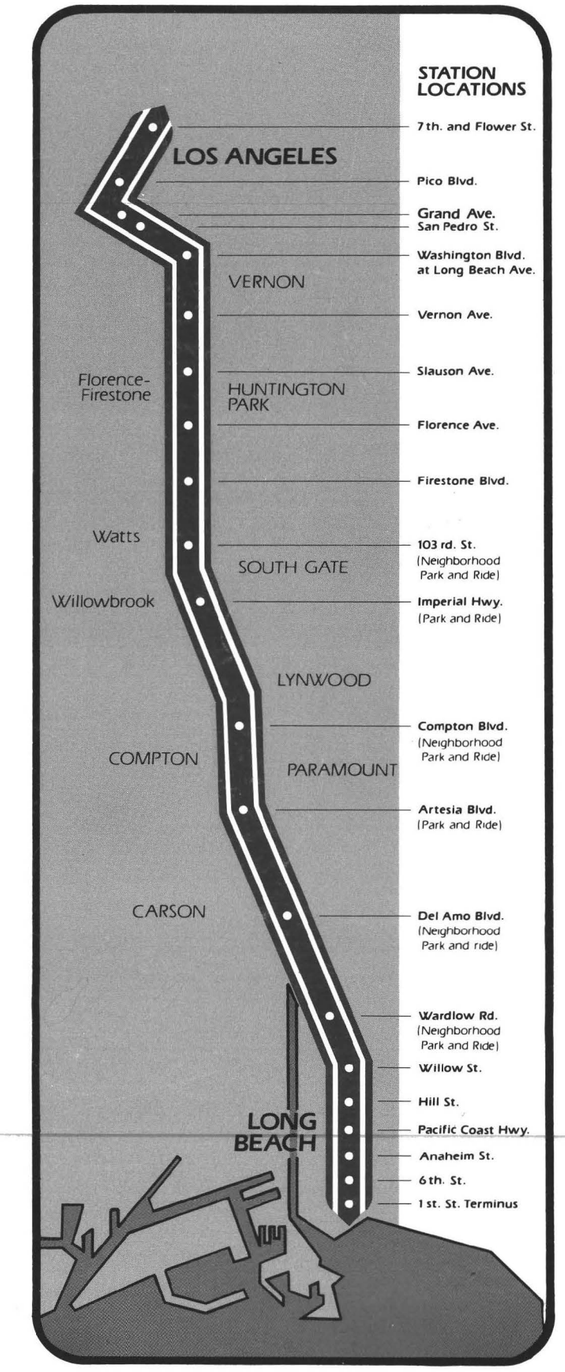
PROCUREMENT DOCUMENTS

Light Rail Vehicles

Contract No.
R01-T05-P865

REQUEST FOR TECHNICAL PROPOSAL

RESPONSES TO INDUSTRY COMMENTS



Long Beach - Los Angeles Rail Transit Project

Los Angeles County
Transportation
Commission

LACTC

No. _____
OVERSIZE
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CARBUILDER/SUPPLIER : American Seating Co.

SECTION TITLE : Seats

SECTION NUMBER :

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	3-20	Section 3.14 Paragraph 2	Change sentence to read: "a rigid Thermoplastic insert at a future date." The upholstered inserts shall be of color, material and padding that are commercially available for the intended use.	Tooling for thermoplastic inserts is standard and is now being used by transit properties. Proven materials should be used and not laboratory offerings. Commercial availability of these materials is limited in colors and quantities.	1. Possibly okay, make a proposal.
2	3-21	Section 3.14 Paragraph 3	Change wording and dimensions to: Minimum O.A. seat dimension from front to back shall be 21.5"; minimum seat pitch shall be 29" and the minimum O.A. width shall be 36" per two-passenger seat and 17" for single seats. The seat design and construction shall be the Otaco #850 Innovator or approved equal.	Existing standard production tooling is for these dimensions. This seat model will establish the level of quality, comfort and safety required for this project.	2. Requirement has been clarified in Final RFTP. (But remains basically the same).
3	3-21	Section 3.14.1 Paragraph 1,a.	Construction. Change wording from "equally distributed along the grabrail" to: equally distributed along the upper back area of seat.	Grabrail is not normally designed to take a load of this magnitude, but intended to deform under excessive loading in order to limit head and body injury in the event of high impact.	3. Requirement remains unchanged.
4	3-21	Section 3.14.1 Paragraph 2	Eliminate first sentence: "Seats located at stanchions as described . . ."	All seats should be supported by wall mount and pedestal only! (or box mount supports). Seats should not depend on stanchions for structural integrity.	4. Requirement remains unchanged.
		Line 10	Eliminate complete sentence starting with: "The stanchion shall provide additional vertical . . ."	Same as above 3.21 - paragraph 3 above.	
5	3-21	Last Paragraph	Eliminate last two (2) sentences beginning with "a stainless steel or cast or extruded . . ."	This should not be included in seat section of spec. This is part of box structure that would be supplied by car builder.	5. RFTP does not place requirements upon individual subcontractors, but upon prime.
6	3-22	Section 3.14.2	Eliminate all after the word "finish". Replace with: of 180 Grit Satin Finish.	The formability of the material would flatten out any pretextured surface of the stainless steel.	6. Possibly okay, provide details in proposal.
7	3-22	Section 3.14.3 Cushion Inserts 3rd Sentence	Eliminate words "employing a special tool."	Special tools not required to remove inserts. Concealed location of insert attachment allows removal of fasteners with a std. wrench.	7. Possibly okay, provide details in proposal.
		4th Sentence	Eliminate entire sentence beginning with "LACTC approval . . ."	Insert securement is the proven standardized method. Any change would involve major tooling changes.	Requirement remains unchanged.
		5th Sentence	Change the word "fiberglass" to: Thermoplastic".	Same reason as Item #1 above (Page 1).	Possibly okay, make a proposal.

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CARBUILDER/SUPPLIER: American Seating Company

SECTION TITLE: Seats

SECTION NUMBER:

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
8	5-2	Section 5.3.2 Paragraph 1	Change third sentence to read: "Covering material shall be perforated to minimize perspiration build-up and operator discomfort.	Availability of materials to meet Section 17.14 guidelines.	8. Requirement remains as written.
9	5-2	Section 5.3.2 Cab Seat	Eliminate the last sentence "The seat cushion shall be a minimum of 5" . . ." Replace with: "Seat cushions to have a 1" neoprene topper over a coiled spring board unit for a total dimension of 5 inches".	Large masses of low smoke neoprene have a severe permanent set in a short period of time. (20-25% within 2 years) Coiled spring reduces foam thickness and permanent set.	9. Possibly okay, provide details in proposal.
			"Back cushion shall be of varying thickness due to proper contouring. Minimum thickness of foam cushion to be 2 inches."	4" is excessive and will produce more permanent set with a low smoke foam. (4" not necessary for comfort).	10. Possibly okay, provide details in proposal.
10	5-2	Section 5.3.2 Paragraph 3	Change word from "Tubular" to solid steel.	Better for hard usage on driver controls.	11. Clarified in Final RFTP.
11	17-1	Section 17.1.1 Paragraph 2	A published list by the Authority of their approved cleaning agents is necessary in order that they may be evaluated before we would agree to this.	We are limited to a given number of materials to meet railcar guidelines. These materials can be severely affected by cleaning agents and all are affected to some degree.	12. Corrected in Final RFTP.
12	17-34	Section 17.14.3 Flammability Seat Cushions	This must be a typographical error. This should read: D_s (1.5) $\leq$ 100 D_s (4.0) $\leq$ 200	Per D.O.T. of August, 1984 Federal Register	13. Corrected in Final RFTP.
13	17-34	Section 17.14.3 Seat Frame	This must be a typographical error. This should read: D_s (1.5) $\leq$ 100 D_s (4.0) $\leq$ 200	Per D.O.T. of August, 1984 Federal Register	

CARBUILDER/SUPPLIER : ACEC BELGIUM

SECTION TITLE : SYSTEM REQUIREMENTS

SECTION NUMBER : 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	2-53	2.3.2. 2.3.2.4	We believe that a definition of the term "failure" is required. This can for instance be defined as "a component condition requiring removal of the vehicle form service". We also think that it is fair to allow for a "burn-in" period of say 3.000 miles during which the failures are not taken into account for the reliability demonstration program. A provision should also be made for endemic failures that occur very frequently and can be overcome by a design modification or adaption. We suggest that in such cases the supplier may request for a reasonable time to take corrective action and that the penalties resulting from the repeated failures are replaced by a penalty on the non accomplishment of this corrective action in due time. These matters should be judged by the consulting engineer.	Clear contract conditions avoiding future misunderstanding. These provisions are necessary as every equipment needs some adjustment during initial operation. If endemic failures appear and penalties are applied regardless the effort of the supplier to elaborate a good solution, the supplier might just repair the equipment in order to avoid heavy penalties. It is impossible to set precise rules for such situations. Some room should be left for the judgement of the supervisor.	1) - Definition provided in Final RFTP. - No time available for burn-in on vehicles in service.
2	2-1 2-7 10-10	2.1.A. 2.3.1.1.C 10.7.1.	Para. 2.3.1.1.C. says that both IEC349 and IEEE11 are acceptable testing standards. Para. 10.7.1. mentions only IEEE11. It is to be understood that IEC349 is also acceptable ? There is a considerable difference in overspeed test requirements in this case. IEC349 requires 1.25 x 55 = 68.75 mph while IEEE11 requires 1.2 x 65 = 78 mph according to our interpretation. Is this correct ?	Clarification	2) The interpretation is incorrect. For the IEEE11 use 55 mph, for IEC349 use also 55 mph, but vehicle must meet worse case (i.e. 55 x 1.25).
3	2-2	2.1.1.1.E	Should the speed limitation in case of failure be automatic ? Is there any requirement regarding the number of possible restrictive speeds ? How will the types of failure leading to speed restriction be defined ?	Clarification	3) Yes, the speed restriction must be automatic. There is no limit to the number of failures to be recognized.
4	2-11	2.2.C.	In the case of eight car mixed operative/inoperative train : can the inoperative cars use their brakes ? Must the eight car mixed train operation be possible with any sequence of cars ? (Also with operative cars at both ends ?). This might influence the dimensioning of signalling train lines.	Clarification	4) - Inoperative cars may not have operational brakes. - Any sequence of cars is possible.

CARBUILDER/SUPPLIER : ACEC BELGIUM

SECTION TITLE : SYSTEM REQUIREMENTS

SECTION NUMBER : 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
5	2-17	2.2.8.	The requested dead time of 200 ms can not be realized with a cam controller under all operating conditions. From full acceleration to 10 % braking takes 500 ms and we therefore request the limit to be set at this value.	Mode change dead time of 200 ms will exclude cam systems from participation. A value of 500 ms will increase the procurement sources.	5) Requirement revised, see Final RFTP.

CARBUILDER/SUPPLIER : ACEC BELGIUM

SECTION TITLE : AUXILIARY ELECTRICAL EQUIPMENT

SECTION NUMBER : 9

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
6	9-5 9-6	9.2.	We propose that a Static converter will be allowed as an alternative to the motor alternator.	More procurement sources	6) No, requirement remains unchanged.

CARBUILDER/SUPPLIER : ACEC BELGIUM

SECTION TITLE : PROPULSION SYSTEM

SECTION NUMBER : 10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
7	10-3 10-4	10.3. 10.3.1.d. appendix A	In order to calculate motor heating we need precise location of traffic lights including dwell times (45 sec ?). We have not found these locations on the track data. The dwell times mentioned in table 1 of appendix "a" do not seem to be multiples of 45 sec.	Correct calculation of motor heating.	7) Reference Appendix A of Final RFTP.
8	2-1 2-7 10-10	2.1.A. 2.3.1.1.C 10.7.1.	Para. 2.3.1.1.C. says that both IEC349 and IEEE11 are acceptable testing standards. Para. 10.7.1. mentions only IEEE11. It is to be understood that IEC349 is also acceptable ? There is a considerable difference in overspeed test requirements in this case. IEC349 requires 1.25 x 55 = 68.75 mph while IEEE11 requires 1.2 x 65 = 78 mph according to our interpretation. Is this correct ?	Clarification	8) Same as #2.
9	10-9	10.7.1.	According to our experience it is not necessary for the magnetic circuit to be fully laminated to meet the performance requirements. We believe the specification should also permit a solid frame construction under the condition that performance requirements are met.	More freedom in design without affecting performance will result is more procurement sources.	9) Solid frames are permitted.
10	10-10 10-11	10.7.1	We believe that commutator seasoning should not be imposed as a procedure. In fact we have replaced seasoning about 15 years ago by a modernised procedure consisting of alternating hot and cold radial and longitudinal pressing. The results of our carefully elaborated procedures might be hampered by the addition of seasoning which is a less controllable process. We cheek commutator TIR before and after sample testing of the motors.	Each motor manufacturer has its own manufacturing procedures and will have solved its inherent problems. It is better not to deviate from prooven manufacturing procedures in order to achieve best quality.	10) Seasoning requirement remains (heat and spin seasoning).
11	10-3	10.2.1.3.	We propose not to impose a minimum number of stages for acceleration and braking under condition that the specified jerk limits are held. Depending on the design it is possible to realize a certain jerk with more or less stages.	Some types of cam systems do not have the possibility of incorporating the specified number of stages but are however capable to comply with the jerk- and other performance requirements. There will be more procurement sources if the specification is open to those systems.	11) Concern no longer valid. Chopp only allowed.

CARBUILDER/SUPPLIER : ACEC BELGIUM

SECTION TITLE : MATERIALS AND WORKMANSHIP

SECTION NUMBER : 17

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
12		17	Are metric standards for threads acceptable ?	Clarification. Choices of all kind of apparatus and equipment would be severely limited if a certain thread standard would be imposed.	12) Requirements have been revised, see Final RFTP.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE: SYSTEMS REQUIREMENTS

SECTION NUMBER: Two

ITEM #	PAGE #	PARA #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	2-2	2.1.1.1	System and Subsystem Requirements We do not understand the significance of this paragraph.		1. These are standard definitions and requirements for safety. 2.1.1.1(c) requires "fail safe" systems, (doors, brakes, ATS, etc.) to have both positive and negative sides of circuits containing contacts.
2.	2-7	2.1.6	Clearance Requirements A clearance diagram showing all site constraints is required to determine vehicle size and suspension performance under both normal operating conditions and worst case conditions.		2. At this time, detailed constraint are not being placed on the vehicle contractor.
3.	2-8	2.1.6	Clearance Requirements An alternative could be to have straight wall sides. E.g. width of car body at roof eave equals width of carbody at floor level.	A more cost efficient car body	3. Probably, okay make a proposal.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE: SYSTEMS REQUIREMENTS

SECTION NUMBER: Two

ITEM #	PAGE #	PARA #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
4.	2-10	2.1.11	<u>Selected Interfaces</u> Requirement stating that braking performance shall be met regardless of trolley line voltage implies series excited traction motors with field pre-excitation equipment. This requirement will result in a complicated main circuit diagram with many contactors. Our philosophy is to use separately excited motors and reduce the number of contactors considerably. Also series braking resistors can be eliminated. The disadvantage is that dynamic braking force will become slightly dependent on trolley line voltage. Also dynamic braking can not be applied if line voltage goes below approximately 400 V which happens when substation is tripped.	The main circuit diagram when separately excited motors are used gives a simple and reliable solution with few contactors. The result is reduced weight and maintenance.	4. Series and separately excited traction motor configurations are acceptable.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE: SYSTEMS REQUIREMENTS

SECTION NUMBER: Two

ITEM #	PAGE #	PARA #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
5.	2.38	2.3.1.2	Qualification Tests Data Requirements Motor Temperatures (Rise) Please clarify the following: "Lead" and "Bearing" "2 each" (2 motors or 2 wheels?) Electrical Data for condenser motor should also be required Last paragraph mentions two test methods. Are both required or is it an option?		5. Requirements revised, see Final RFTP. Vendor's option. 6. Clarification provide, see Final RFTP.
6.	2-40	2.3.1.2	Qualification Tests Test Requirements "Discontinue testing sufficient temperature drop inside the unit." This sentence must be incomplete.		

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CARBUILDER/SUPPLIER: ASEA

SECTION TITLE: SYSTEMS REQUIREMENTS

SECTION NUMBER: Two

ITEM #	PAGE #	PARA #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
7.	2-44	2.3.1.3	Vehicle Systems Testing Air Conditioning Test (1) Is there a criteria of the cool-down time?		7. Requirement are as stated in Final RFTP.
8.	2-45	2.3.1.3	Vehicle Systems Testing Heating System Test (1) Is there a criteria of the warm-up time?		8. Same as above. 9. Provide proposed test procedure for LACTC approval.
9.	2-46	2.3.1.3	Vehicle Systems Testing Heating System Test (6) Please define test method.		

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE: CAR BODY

SECTION NUMBER: Three

ITEM #	PAGE #	PARA #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
10.	3-8	3.7.1	<u>End Underframe Structures</u> "The front end underframe shall consist of the draft sill, end sill, anti-climber and body bolster." We ask for permission to use other approved principals that will withstand stated demands and give a car body with better performance, for example, energy absorption.	In an accident, a car body with energy absorbing sections will give less injuries to the passengers and the repairing costs for the LRV will also be reduced.	10. The proposed technique is possibly adequate. Load requirements still remain. Address in proposal.
11.	3-10	3.7.2	<u>Body and Side Sills</u> Please change the first sentence to the following: Body sills shall be provided if necessary. Side sills shall be provided to transmit a portion of the applied longitudinal loading from the end sill to the end underframe and to provide supporting structure for the underfloor equipment items.	An underframe without body sill will be lighter and easier to manufacture.	11. Possibly acceptable, provide details in proposal.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE: CAR BODY

SECTION NUMBER: Three

ITEM #	PAGE #	PARA #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
12.	3-10	3.7.3	Floor Beams "Flat sheets of stainless steel shall be attached to the bottoms of the transverse floor beams." We ask for permission to use corrugated stainless steel.	A corrugated stainless steel underfloor is less sensitive against buckling than what a flat underfloor with the same sheet thickness is when longitudinal loads are applied at the car ends. A much better load taking underfloor will be achieved. Longitudinal sills inboard of the side sills will not be necessary for transmission of longitudinal loads. This will result in a lighter underframe.	12. See Final RFTP, Volume I. Requirements have been revised.
13.	3-12	3.8.1	Roof Structure An alternative can be to construct the roof in stainless steel. Due to an easier manufacturing procedure, the cost will not increase.	Lower weight. Corrosion resistant.	13. LAHT Required, stainless steel extremely difficult to repair.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE: CAR BODY

SECTION NUMBER: Three

ITEM #	PAGE #	PARA #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
14.	3-13	3.8.3	Skirts First paragraph, last sentence, request to add: "... or other plastic approved materials ..."		14. Not permitted. Flammability and repairability of concern.
15.	3-17	3.11	Car Interior In order to fulfill graffiti resistance rating of 1 and at the same time fulfill the flammability demands, expensive materials are required.	By permitting graffiti resistance rating of 2, the flammability demands will be met at a lower cost.	15. No change allowed. 16. Permitted. Provide information in proposal.
16.	3-19	3.13	Windows As an option, we would like to recommend double glazed windows in order to lower costs for heating-up and cooling down.		

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE: CAR BODY

SECTION NUMBER: Three

ITEM #	PAGE #	PARA #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
17.	3-20	3.13.3	<u>Cab Windows</u> We request a clarification on standards to use to determine compliance with "bullet resistant design"		17. Clarification provided, see Final RFTP, Volume I.
18.	3-20	3.14	<u>Seats</u> As an option, we request permission to use steel-frame seats with plastic covers.	Standard seats are available on the US market. For replacement purposes, this is an example on material that should be sourced in the US.	18. No change permitted.
19.	3-25	3.16.6	<u>Destination Signs</u> Roll curtain type signs are extremely difficult to be remotely controlled and trainlined. We request to add electronic signs as an option.	This will be a more reliable solution.	19. No change.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE: AIR COMFORT SYSTEM

SECTION NUMBER: Seven

ITEM #	PAGE #	PARA #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
20.	7-4	7.3	<u>Heating Requirements</u> We propose that it should be possible to use either DC or AC power supply for the controls.	This will increase the number of possible suppliers.	20. Not permitted.
21.	7-13	7.5	<u>Temperature Control</u> The demands on the variations of interior car temperature are quite rigid. By decreasing those demands, an over-sophisticated system will not be required.	More reliable and cost efficient.	21. Requirements are within industry capabilities.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE: AUXILIARY ELECTRICAL EQUIPMENT

SECTION NUMBER: Nine

ITEM #	PAGE #	PARA #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
22.	9-5	9.2	Motor Alternator We would like to propose a static invertor as an alternative to the motor alternator.	In order to reduce maintenance, a static invertor is preferred. A static invertor is almost noiseless. Reliable almost maintenance free, AC-motors will be used for auxiliary equipment.	22. No, a static inventer is not permitted due to: - requirement for interior lighting without inventer ballasts. - undesired output wave form produced by inventers.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE: PROPULSION SYSTEM & CONTROL

SECTION NUMBER: Ten

ITEM #	PAGE #	PARA #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
23.	10-1	10.2	<u>System Configuration</u> We prefer to use two fixed frequencies in the motoring mode.	By using a two fixed frequency chopper, the number of semiconductors will be reduced. This reduces weight and cost.	23. Possibly okay, provide details in proposal.
24.	10-2	10.2.1.1	<u>Split Chopper</u> We recommend to have the two chopper units in a common box rather than splitting it up in two boxes.	Weight and required space will be reduced.	24. Okay.
25.	10-10	10.7.1	<u>D. C. Traction Motors</u> <u>Commutator Brushes</u> The brush holders to be proposed are of radial type and designed to give a pressure characteristic where the reduction in brush pressure from new to worn brush is kept to a minimum. We recommend a clock spring or a lever type pressure finger with a helical spring.		25. Okay.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE: PROPULSION SYSTEM & CONTROL

SECTION NUMBER: Ten

ITEM #	PAGE #	PARA #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
26.	10-10	10.7.1	D. C. Traction Motors Commutator For this size of motor, we recommend a molded type of commutator. The molding material is an epoxy resign. The creepage surface at the front end of the commutator will be of the molding material. As the commutator is already seasoned at the manufacturer's, no seasoning will be made on the complete armature.	With a molded commutator, it is possible to make a more compact motor. It is also possible to arrange a better cooling of the armature because of the more generous space between commutator hub and armature shaft.	26. Provide adequate support information in proposal.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE: TRUCK ASSEMBLIES

SECTION NUMBER: Eleven

ITEM #	PAGE #	PARA #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
27.	11-7	11.4.1	Shock Absorbers We ask for permission to propose normal dampers of approved type as lateral shock absorbers.	Our experience is that lateral shock absorbers of normal type will give the best running performance and reduce maintenance.	27. Possibly acceptable, submit adequate design review information in proposal.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE: FRICTION BRAKE SYSTEM

SECTION NUMBER: Twelve

ITEM #	PAGE #	PARA #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
28.	12-1	12.1	General We would like to propose a hydraulik brake system as an alternative to a pneumatic system.	Reduced dimensions and weight. Easier to meet the required brake response time. Reduced cost.	28. Not permitted.
29.	12-13	12.7.6	Air Supply System If a static invertor is accepted, we suggest that the compressor motor should be supplied by it. This implies that a three phase induction motor of standard type is used instead of a 750 Volt DC motor.	A simpler more reliable motor practically free of maintenance and available at a low price.	29. A static inventer will not be permitted.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE: MATERIALS AND WORKMANSHIP

SECTION NUMBER: Seventeen

ITEM #	PAGE #	PARA #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
30.	17-9	17.6	Aluminum We have successfully used aluminum in undercar equipment boxes and wire ducts.	Lighter and stronger equipment boxes.	30. We forsee a corrosion problem and therefore will not permit aluminum equipment boxes.

CARBUILDER/SUPPLIER: BBC Brown Boveri, Inc.

SECTION TITLE:

SECTION NUMBER:

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	2-3	2.1.1.2a)	In motoring, two independent signals will be checked before starting. In braking, two independent signals will be provided, but if one of the signals is missing the car will go to the emergency brake mode.	Safety	1. Want three independent signals with failure annunciation.
2.	2-11	2.1.11b)	We recommend coded terminals on the battery.	- Some of the apparatus have free wheeling diodes which can be damaged if the battery is not properly connected.	2. Devices must be protected eithe on a car basis or individual basis.
3.	2-12	2.2e)	The equipment controls shall operate from 45 VDC to 25 VDC at the apparatus terminals.	- The standard apparatus for traction application are defined according to IEC standards. - To comply with para. 2.1.11b	3. Requirements revised, see Fina RFTP.
4.	2-13	2.2.31a)	The maximum stop change in deceleration will be 0.2 mphps due to propulsion control only.	Same as motoring (2.2.1a)	4. Corrected.
5.	2-14	2.2.3.1f)	We refer to comments para. 2.2.8.		5. Requirement revised, see Final RFTP.
6.	2-16	2.2.6	Jerk limits for 3 to 4 mphpsps shall be for maximum service brake only (2.2.3.1) and can be smaller for intermediate deceleration demands. Method of measurement has to be defined.	To increase comfort for passenger.	6. Requirement remains unchanged.
7.	2-17	2.2.8	Mode change dead times shall not exceed 500 ms.	500 ms is an experience-value. However, if there is a fast response on the friction brake system a reduction is possible for power-to-brake.	7. Requirement revised, see Fina RFTP.

CARBUILDER/SUPPLIER: BBC Brown Boveri, Inc.

SECTION TITLE:

SECTION NUMBER:

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
8.	2-17	2.2.7	A load compensation system is not needed for acceleration control system as BBC would propose. However, we will provide if required.	The acceleration and deceleration control system (feedback) is able to compensate different car loads.	8. Load compensation is required.
9.	2-17	2.2.9	We would recommend a combined master controller as supplied for Portland and San Jose with following functions: - Inverser drum for forward/neutral/ reverse/off - Key to interlock the inverser drum in the off position. - Certain motoring and braking steps including maximum service brake but excluding emergency brake. - Mechanical interlocks between inverser drum and motoring braking drum. - Dead man with T-handle.	No electrical interlocks are required. By selecting a forbidden position, the car driver feels it immediately because the handle is blocked.	9. Foot pedal control is required.
10.	9-4	9.1.3	Delete: requiring no power to remain in the closed, untipped state. Where is para. 10.5.12?	The high speed circuit breaker can be used to isolate high tension feed from the propulsion system.	10. If BBC has an alternative which meets the intention of S9.4.5, then make a proposal.
11.	9-6	9.2	We recommend a static inverter as alternative.	Reduction of maintenance Higher reliability Low mass Higher efficiency Reduction of components and therefore weigh and space savings.	11. A M.G. is required due to: - the outputs desired wave shap - Interior lighting without inventer ballasts.
12.	9-7	9.3.2	Low voltage power supply can be part of the static inventer; refer to para 9.2.		12. A DC to DC convertor is allowed by specification.

CARBUILDER/SUPPLIER: BBC Brown Boveri, Inc.

SECTION TITLE:

SECTION NUMBER:

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
13.	10-1	10.2	We recommend as an alternative switched resistor control by individual contractors.	Features of the contactor notching: - Switching devices of the same contactor family for motor connection, field weakening, and notching - Fewer spare parts - Less maintenance: no driving motor nor wearing parts on the camshaft - Flexibility of connection - Simple trouble shooting and test - Faster reaction time (unnecessary notches are not switched) - Individual contactors can be changed - High number of notches available	13. Requirements are as stated in Final RFTP.

CARBUILDER/SUPPLIER: BBC Brown Boveri, Inc.

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ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
14.	10-2	10.2	We recommend as an alternative automatic field weakening.	Less contactors and therefore less maintenance and higher reliability.	14. Separately excited fields are allowable by specification.
15.	10-3	10.1.1	Temperature rise shall be limited by class of insulation system.	The BBC traction motors are insulated with the BBC class-H system VERIDUR R	15. No, this is not permitted. Class F temperature rise with Class H-rating required.
16.	10-5	10.6.3	The friction brake control can be fully integrated in the car control logic as an alternative.	Reduction of electronics and therefore increased reliability.	16. Separate units preferred, must still be on a per truck basis, make a proposal.
17.	10-8	10.6.14	A vital no-motion logic consists of two independent circuits. We recommend a separate circuit independent from the car control logic.	The critical function assessment is easier to make by the responsible people.	
18.	10-9	10.7.1	Mounting: add - ... or each motor shall be fixed directly to the truck frame	Fully-suspended motor.	18. Possibly okay, make a proposa
19.	10-10	10.7.1	Noise: The allowed noise level is 90 dB according to IOS R 1680 We recommend therefore 90 dB for the traction motor.	The required maximum noise level of 85 dB demands a forced ventilated traction motor which will cause more maintenance and reduce reliability.	19. Requirement remains as stated Final RFTP.
20.	10-10	10.7.1	Commutator: add - ... or IEC 349/1985, standards		20. Other standards are permitted must be equal or tougher, bur of proof on vendor.
21.	10-11	10.7.1	The creepage band over the mica and "V" ring at the front end of the commutator shall be one piece, made of Teflon.	In its experience BBC uses a "V" ring made of one piece (seamless), but it is not shrink fitted.	21. Possibly acceptable, provide details in proposal.
22.	10-11	10.7.1	Delete second paragraph about seasoning.	The commutators from BBC do not have to be seasoned.	22. Seasoning is required.

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ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
23.	10-11	10.7.1	Commutation: The visible commutation does not give any indication how the motor will perform during service.	BBC confirms with the requirements for brushes and commutator of page 10-10.	23. This is not our experience, requirement remains.
24.	10-12	10.7.2	Please replace in the 4th line: with one wheel raised ± one inch (instead of two inches)	Proposed as a result of our practical experience.	24. No, rail mismatch of 2 inches possible. Requirement remain
25.	17-15	17.10.1-3	We propose a proven cable type (Radox) which can perform up to 125°C. (UL-E 63322)	Mass and space requirement reductions.	25. Possibly okay, need informatic on smoke, flammability, cold flow, etc. performances.
26.	17-17	17.11.1	6th paragraph: All wiring connected to a piece of apparatus shall be insulated for the highest voltage connected. We recommend deletion of the sentence.	For current transducers or voltage transducers (e.g., type LEM) not possible.	26. Provide necessary information items not meeting requirement
27.	17-20	17.11.1	8th paragraph: We assume the second number in this series refers to inches. No 10 and smaller -3, No 8 and larger -2.		27. The second number refers to t number of possible re-termination.
28.	17-22	17.11.5	A minimum clearance of one inch should be allowed.	According to our experience, one inch is sufficient. Space can be saved.	28. No change, want a minimum of inches.
29.	17-23	17.11.1	Electrical terminal boards for cables will be as follows: 6 mm^2 with screw connection 2.5 mm^2 with fast-on	Space can be saved in order to use fast on plugs for small cable cross sections.	29. Fastons generally not permitt Application will be reviewed approval on a case-by-case ba
30.	17-23	17.11.9	Grounding connection on the carbody side shall be iron silver-plated.	It is much easier to handle during carbody soldering.	30. Not permitted for carbody grounds.

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ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
31.	15-4/5	15.2.1	Software-development for automatic testing of all assemblies and subassemblies is very expensive.	The cost of this testing is not justified for less than 300 units.	31. Requirements have been revised.
32.	17-37	17.15.2	Return circuits: Shielded impulse cables may be grounded on both sides.	As a result of experience.	32. Submit a proposal, will be considered on an individual basis.
33.	17-37	17.15.3b.1	Four times maximum circuit voltage is not always possible; e.g., for input circuits of power supplies.	Semiconductors are protected by means of filters. Therefore, short voltage peaks will not be transferred to the semiconductors.	33. Same as above.
34.	17-38	17.15.3i	In general, this is true; but certain circuits may not always have two manufacturers; e.g., complex counters and possibly microprocessors.		34. Same as above.
35.	17-38	17.15.3j	MIL-STD-883 B is usually not applied by BBC. It results in very expensive equipment.	Very long delivery times are typical; as much as one-year delivery is not unusual.	35. Alternatives permitted by the RFTP.
36.	17-38	17.15.4.a	Also, multi-layer boards are used.	High density of integrated circuits on a printed circuit board and therefore higher reliability because of reduced rack wiring.	36. Submit a proposal, possibly okay on an exception basis.
37.	17-39	17.15.4b	Pins of integrated circuits are not numbered, but component side of circuit board shows mounting position.		37. Same as above.
38.	17-39	17.15.4d	Sockets are only used for IC of 28 pins and up.	Less sockets increase the reliability of the PCB's.	38. Requirement is stated in Final RFTP.
39.	17-41	17.15.a	a) The rack will shield the entire electrics EMI b) Transient recorder circuit board with battery powered RAM's is available. c) Program and settings are stored in	EPROM's can be used several times, but PROM's, one time only.	39. a. Okay. b. Provide details in proposal c. Okay.

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SECTION TITLE : SYSTEM REQUIREMENTS

SECTION NUMBER : 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	2.2.	2.1.1.1.e.	SYSTEM AND SUB-SYSTEM REQUIREMENTS Should the speed limitation in case of failure be automatic ? Is there any requirement regarding the number of possible restrictive speeds ? How will the types of failure leading to speed restriction be defined ?		1. a. Yes b. No c. Failures which contribute to unsafe condition unless a speed restriction has been imposed.
2.	2.8.	2.1.6.m.	MIN. RUNNING CLEARANCE AFTER ALL WEAR AND DEFLECTION We understand that all figures mentioned are as from top of the rail.		2. Correct
3.	2.8.	2.1.6.r.	WIDTH OF SIDE DOOR OPENINGS We propose to change the figure from 4ft 0in ± 1/8in 4ft 3 1/8in (= 1,300 m)	The proposed width is a generally accepted standard, allowing the simultaneous boarding and alighting of two passengers. This results in the reduction of the station dwell times and accordingly increases the commercial speed of the vehicles	3. 4-ft minimum opening is required.
4.	2.8.	2.1.6.s.	HEIGHT, DOOR OPENINGS OVER TRESHOLD We propose to change the figure from 6ft 8in ± 1/8in to 6ft 3in (1,905 m) ± 1/8in	The proposed height is standardized on many vehicles in revenue service or under construction in the USA, Canada and abroad (e.g.: San Diego,Portland, Pittsburg, Calgary, Edmonton...)	4. Requirements have been revised.
5.	2.9.	2.1.7.	WEIGHT Taking into account the main weight influencing features which are : - high structural design requirements as compared to normal practice in Europe - presence of compressed air equipment - air conditioning equipment - roofmat over whole length of the roof - floor consisting of stainless steel underfloor and 3/4in plymetal floor panels and after comparison with other 6-axle cars, we believe from our experience that an empty car load of 90.000 lbs could be exceeded.		5. Requirement remains unchanged.
6.	2.9.	2.1.9.	All electrical equipment withstand vibrations and [illegible] to IEC 571		6. Proposers obligation to determine and prove requirement compatibility.

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SECTION TITLE : SYSTEM REQUIREMENTS

SECTION NUMBER : 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
7.	2.11.	2.2.c.	In the case of the 8 car mixed operative/inoperative train : can the inoperative cars use their brakes ? Must the 8 car mixed train operation be possible with any sequence of cars ? (also with operative cars at both ends ?) This might influence the dimensioning of signalling trainlines		7. - Cars will be "dead," brakes and/or propulsion inoperative - Cars may be in any sequence.
8.	2.13.	2.2.3.1.	SERVICE BRAKING We propose to amend the nominal full service braking rate as follows : 2,9 mph/s instead of 3,5 mph/s	The figure of 1,30 m/sec^2 (2,9 mph/s) is generally used for the dimensioning of the braking system as it provides the best compromise safety/passenger comfort. It is also to be noted that other LRV's operating in the USA have been designed using the proposed full service braking rate of 2,9 mph/s (San Diego, Portland, Philadelphia)	8. No, this is not acceptable due t California PUC GO 143.
9.	2.17.	2.2.8.	MODE CHANGE DEAD TIMES The requested dead time of 200 ms cannot be realised with a cam controller under all operating conditions. From full acceleration to 10 % braking takes 500 ms and we therefore request the limit to be set at this value.		9. Requirements revised, see RFTP.
10.	2.20.	2.2.10.3	INTERIOR NOISE We understand that the required levels are for a stationary vehicle.		10. This is correct.
11.	2.7. 2.1. 10.10.	2.3.1.1.c. 2.1.a. 10.7.1.	DC TRACTION MOTOR TESTING Para.2.3.1.1.c. says that both IEC 349 and IEEE11 are acceptable testing standards. Para.10.7.1. mentions only IEEE11. It is to be understood that IEC 349 is also acceptable ? There is a considerable difference in overspeed test requirements in this case. According to our interpretation IEC 349 requires 1.25 x 55 = 68.75 mph while IEEE 11 requires 1.20 x 65 = 78 mph Is this correct ?		11. Either standard may be used, bu 55 mph should be used in both calculations.

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SECTION TITLE : SYSTEM REQUIREMENTS

SECTION NUMBER : 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
12.	2.32.	2.3.1.2.h.(1)	STATIC LOAD TEST We usually apply the lateral and longitudinal loads as if they were applied at the level of the secundary suspension. In order to obtain a more reasonable weight of the truck frame and truck bolster, we suggest to use 40 % adhesion instead of 60 % at the wheels at full load for the calculation of the maximum longitudinal load.	The weight of the truck frame and truck bolster will be more reasonable	12. Requirements are as stated.
13.	2.33.	2.3.1.2.h.(2)	We usually consider that the values of the forces applied during the fatigue test namely a vertical load equal to an end truck's share of AW4 minus the weight of the truck ± 25 %, combined with a lateral and longitudinal load equal to ± 15 % of the mean vertical load, include already a large safety coefficient as compared to the actual forces occuring on line. That is the reason why we apply the transversal and longitudinal fatigue forces at the level of the secundary suspension.	The weight of the truck frame and truck bolster will be more reasonable	13. Requirements are as stated.
14.	2.53.	2.3.2. 2.3.2.4.	RELIABILITY We believe that a definition of the term "failure" is required. This can for instance be defined as "a component condition requiring removal of the vehicle from service". We also think that it is fair to allow for a "burn-in" period of say 3000 miles during which the failures are not taken into account for the reliability demonstration programme.		14. Failure defined in final versi of RFTP.
15.	2.54.	2.3.3.2.	COMPONENT CHANGE-OUT In respect of the person-hours allowed for component change-outs, we would like to attract your attention to the fact that, in the case of monomotor trucks, the dismounting of a traction motor from below is a rather difficult operation. Normally system operating companies prefer to disconnect the motor truck from the car body and then replace the motor in a specially equipped workshop. In order to reduce the immobilisation time of the vehicle the system operators perform a truck exchange, rather than a motor exchange, with subsequent motor exchange on the dismounted truck.		15. Requirements have been revise

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SECTION TITLE : SYSTEM REQUIREMENTS

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#	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
			A motor truck exchange requires 12 person-hours. A motor replacement requires 8 person-hours. For the brake disks we believe following person-hours are more realistic : Brake disc change-out in case of a 2-part brake disk : - motor truck : 3 h (reduced accessibility) - trailer truck : 2 h Brake disk change-out in case a 1-part brake disk is accepted for mounting on the new vehicles with replacement by 2-part brake discs when worn out : - motor truck : 4 h - trailer truck : 3 h		- Assume a 2-piece disk
16.	2.55	2.3.4.1.	FRONT END MOCK UP In order to respect the timing (latest six months after contract award) we presume that some materials or components may be dummy as far as they do not influence the normal procedures of inspection and approval.		16. Okay, but final mockup must us approved production parts.

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SECTION TITLE : CAR BODY

SECTION NUMBER : 3

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	3.5.	3.4.f.	We propose to amend as follows : The anticlimber shall withstand a 40.000 pound vertical load with no yielding of any carbody structure. (For the horizontal load we refer to 2.3.1.3. (5) page 2.41)	The structural design requirement whereby a 40.000 pound vertical load on the anticlimber is combined with a 100.000 pound longitudinal load, represents a non realistic load condition as it is always possible to lift a car body without having a longitudinal load applied at the same time. The only result of complying with the specification would be an increase of the vehicle weight due to the need for reinforcements at some window-corners of the driver's cab. For the Portland vehicle the amended requirement has been accepted.	1. Requirement remains as stated RFTP Volume I. 2. Asked as a question in the RFT Volume I. 3. Agree.
2.	3.7.	3.6.	ARTICULATION SECTION We suggest that you would define the minimum passage width between the interior panelling of the articulation section which to your experience would be requested to obtain easy and safe access between the two car sections. In the Portland vehicle for instance the passage has a width of 5ft 7in.		4. Location acceptable, quick disconnects are required.
3.	3.7.	3.6.2.	ARTICULATION - SERVICE PROVEN DESIGN From our experience we believe that it is important to stress that the design should offer a maximum protection of the diaphragms against damage by adverse weather conditions, vandalism or direct sunlight, whereby even in curves of minimum radius the articulation diaphragms shall not be visible.	This design results in an increased life of the diaphragms and accordingly a reduced maintenance cost	
4.	3.8.	3.6.3.	CONNECTIONS We propose to provide the cabling across the articulation below the floor line, but above the truck level, allowing a quick separation of the truck without having to separate the two car bodies and thereby without having to disconnect wiring and cabling. Additionally, as the separation of two car bodies occurs much less frequently than the separation of the truck, we suggest to provide simple junction boxes on both sides of the articulation instead of the more expensive quick	Improved maintainability	

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SECTION TITLE : CAR BODY

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ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
5.	3.10.	3.7.3.	SUB-FLOOR We propose an alternative solution for the entire design of floor and sub-floor. Refer to figure 3.7.3.	The advantages of this design are as follows : a) proven design on many types of LRV also guaranteeing an interior noise level not exceeding 72 dBA. b) the corrugated sub-floor offers additional resistance to the car body structure in order to withstand the forces mentioned in this specification. c) a more safe and also easier mounting of the underfloor equipment supports is possible.	5. a. + b. Proposed alternative unacceptable . We will accept floor pan (undersheet) with single-sided plymetal floor (stainless steel top sheet). Must meet flammability requirement. c. Alternatives are permitted, see Final RFTP Volume I.
6.	3.12.	3.8.1.	ROOF STRUCTURE We propose that corrugated roof sheets should be accepted as an alternative solution, provided anti-slip walkways are foreseen.	The design provides for a higher stifness of the roof structure and has been successfully applied on many existing LRV's including Portland. With a breakaway design of the pantograph only a small area of the roof is to be provided with an insulating mat or similar. This results in a gain of weight of about 650 lbs/car.	6. Possibly acceptable, provide details in proposal.
7.	3.15.	3.10.	FLOOR AND FRAMING See our comments for 3.7.3. The floor shall be constructed of 1/2 in thick plywood.		7. Not acceptable.
8.	3.18.	3.12.	INSULATION As far as the requirements for interior noise levels and interior air comfort are concerned, other insulation systems may be proposed.	Weight savings are possible.	8. Possibly acceptable, provide details in proposals.
9.	3.19.	3.13.1.	SIDE AND DOOR WINDOWS We propose to amend as follows : "They shall have a visible light transmission of 48 to 62 %" instead of ± 55 %.	This allows the use of commercial qualities of glass, resulting in lower prices and better availability for the supply of spare parts.	9. Requirement remains as stated RFTP Volume I.
10.	3.8.3.	3.16.2.	STANCHIONS AND GRAB RAILS Commercial types will also be acceptable. Stanchions and grab rails : stainless steel tubes	This results in lower prices and better availability for the supply of	10. Stanchions requirements remain as specified, proposal require for deviation, no annodizing permitted

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SECTION TITLE : COUPLER AND DRAFT GEAR

SECTION NUMBER : 4

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	4.2.	4.2.3.	STRENGTH REQUIREMENTS To allow lifting of an AWO car from the face of the coupler, even when blocking is provided between drawbar and endsill, the strength of the drawbar must be higher than on commercially available couplers. We understand the interest of this requirement in case the car must be re-railed. However, the drawbar and its fixation and rotative device should have therefore to be re-designed. The possibility of providing other means to assure a quick and easy re-railing should be left open so that the coupler can remain of a commercial standard type.	Advantage : easy re-railing of the car Disadvantages: - a special non commercial coupler is requested (more expensive) - weight increase	1. To date no coupler manufacturers have expressed concern. No change.
2.	4.3.	4.4.2.	CONTACTS We propose the use of male and female contacts as they have a very small contact resistance and are self-cleaning. Current rating for these contacts is 15 to 20 A which is largely sufficient for all train-lined operations and controls.	Experience has shown butt contacts are not designed for small current transmission such as for radio, public address, control circuits and others	2. Not permitted.
3.	4.4.	4.4.2.	We propose to provide a small weatherproof connector at each car end. When trailing a defective car, a small cable can be used to realise the coupling of the communication circuits.	The provision of additional contacts in the mechanical coupler can give some problems : - it is difficult to provide weatherproof covering - problem of contact resistance	3. Not permitted.

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SECTION TITLE : OPERATOR'S CAB

SECTION NUMBER : 5

M #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	5.6.	5.3.15.1.b.	Speed information for the speedometer can be given through the slide protection system.	- Average speed of all axles is indicated - Even in case of a defective perception head, there is still speed indication. - Speedo equipment is simplified.	1. Comment not understood, requirement remains as stated in RFTP Volume I.
2.	5.4.	5.3.10.	EXTERIOR MIRROR As an alternative we suggest the use of a retractable mirror moved by a pneumatic cylinder activated by electropneumatic valves.	- Simple system - Low maintenance cost	2. Permitted, see RFTP Volume I.

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SECTION TITLE : PASSENGER DOORS

SECTION NUMBER : 6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	6.1.	6.1.	It should be noted that for doors of the outward-folding or swing-plug design, which project relatively far over the vehicle's side wall clearance gauge, a minimum distance between lower door edge and platform has to be foreseen in order to avoid damages. This distance is function of wheel wear, suspension setting, possible suspension failure, etc... In this respect, it is to be noted that, in the case of swing-plug design it is recommended to have the lower transmission arm installed below the floor level thereby providing an obstacle free floor at the doorways (safety).		1. Requirement remains unchanged, see Volume I.
2.	6.2. + 6.4.	6.2. + 6.2.3.	We propose that the obstruction protection by controlling the air outlet of the pneumatic door operator with a differential pressure switch may be considered as an alternative.	- Cost reduction - Reduced maintenance	2. Obstruction detection method remains as stated, see Volume I.
3.	6.7.	6.3.6.	DOOR MECHANISM LOGIC Due to the complexity of the requirements for the door mechanism logic , we suggest the use of a small micro-processor for each door platform (two doorways).	- Smaller volume requested than in the case of conventional relay logic - easy adjustments in door sequence are possible - possibility to have a local fault indication. - fail safe design	3. Safety assurance of concern, provide details in proposals.
4.	6.9.	6.4.4.	DOOR STATUS INTERLOCK As described in this paragraph 4 sensor switches are to be provided per door. This means that 16 contacts have to be arranged in series for one car side. The risk for defects is thereby increased, resulting in a low MTBF. Door status can in fact be checked with only two sensing devices as the movement and positioning of both panels is interdependent and this needs only one sensor, and as the locking device is common to both panels, this also needs only one sensor.		4. This may be acceptable, provide more details in proposal.

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SECTION TITLE : AIR COMFORT SYSTEM

SECTION NUMBER : 7

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	7.6.	7.3.3.	DEFROSTER - DEMISTER We propose a combined equipment for cab floor heating and defrosting/demisting of cab windows	Commercial type of proven design offering lower price and easy purchasing of spare parts.	1. Need more details - comment not clear.
2.	7.6.	7.4.	AIR CONDITIONING Where space on the underframe is available, a split system can be considered : compressor and condensor units are packaged in an underframe mounted unit whilst the evaporator is roof mounted.	- Better accessibility of the compressor/ condensor unit - Since compressor and condensor are housed outside the body structure, noise and vibration are dramatically reduced	2. Not acceptable - require unitized construction.
3.	7.10.	7.4.3.	COMPRESSOR/CONDENSOR PORTION In case of underframe mounting, we propose that the use of a direct driven 750 V DC compressor should be allowed.	Reduction of low voltage power requirements for the motor alternator. In this case, a static converter could be considered to provide low voltage power, resulting in an improved maintainability of the vehicle.	3. Not acceptable - required configuration as stated.

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SECTION TITLE : LIGHTING SYSTEM

SECTION NUMBER : 8

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	8.2.	8.2.1.	MAIN INTERIOR LIGHTING FIXTURES The average rated life time of a standard fluorescent lamp is about 6 to 7000 h, depending on the circumstances in revenue service (temperature, number of on/off switches)		1. Disagree, manufacturers claim 18,000.
2.	8.6.	8.4.4.	TEMPORARY LIGHTING We propose the use of a switch-on and switch-off relay for the interior lighting so that the emergency ligths remain illuminated as long as no off command is given thus preventing the cars from being in total darkness when changing cabs.	Simplier and less expensive system.	2. Comment unclear.

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SECTION TITLE : AUXILIARY ELECTRICAL EQUIPMENT

SECTION NUMBER : 9

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	9.5.	9.1.5.	SAFETY GROUNDING We propose that stainless steel pads welded to the truck frame body be also acceptable.	Common practice	1. Not acceptable.

CARBUILDER/SUPPLIER: BN CONSTRUCTIONS FERROVIAIRES ET METALLIQUES

SECTION TITLE: PROPULSION SYSTEM & CONTROL

SECTION NUMBER: 10

#	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	10.3	10.2.1.3.	CAM TYPE SWITCHED RESISTOR We propose not to impose a minimum number of stages for acceleration and braking under condition that the specified jerk limits are held. Depending on the design it is possible to realize a certain jerk with more or less stages.		1. Requirements are revised, see Final RFTP, choppers only.
2	10.3	10.3.1.	TRAFFIC LIGHTS In order to calculate motor heating we need precise location of traffic lights including dwell times (45 sec?). We have not found these locations on the track data of appendix a. The dwell times mentioned in table 1 of appendix a do not seem to be multiples of 45 sec.		2. Provided in Final RFTP, Appendix A. 3. Requirement has been revised.
3	10.9	10.7.1.	DC TRACTION MOTOR STATOR According to our experience it is not necessary for the magnetic circuit to be fully laminated to meet performance requirements. We believe the specification should also permit a solid frame construction under the condition that performance requirements are met.		4. Possibly okay, provide details in proposal.
4	10.9	10.7.1.	TRACTION MOTORS - VENTILATION To obtain clean air, it is not absolutely necessary to have the air intake above the car roof level. We have good experience with air intakes in the side wall just below window level. We suggest to add this as a possible alternative.	Better accessibility to the air filters	5. Absolutely not. Seasoning required.
5	10.10 10.11	10.7.1.	TRACTION MOTOR COMMUTATOR We believe that commutator seasoning should not be imposed as a procedure. In fact we have replaced seasoning about 15 years ago by a modernised procedure consisting of alternating hot and cold radial and longitudinal pressing. The results of our carefully elaborated procedures might be hampered by the addition of seasoning which is a less controlable process. We check commutator TIR before and after sample testing of the motor.		

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SECTION TITLE : PROPULSION SYSTEM & CONTROL

SECTION NUMBER : 10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
6	10.11	10.7.2.	GEAR DRIVES Gear coupling design allows full motion of the suspension to the mechanical stop.	Common practice.	6. Comment not understood.
7.	10.14	10.7.8	GROUND BRUSH We suggest that the use of direct friction ground brushes to the axles should be considered as an acceptable alternative.	Common practice since more than 20 years without problem	7. This is an additional maintenance item, not acceptable.

CARBUILDER/SUPPLIER : BN CONSTRUCTIONS FERROVIAIRES ER METALLIQUES

SECTION TITLE : TRUCK ASSEMBLIES

SECTION NUMBER : 11

#	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	11.1	11.2	We do not recommend use of SAB-V wheels In case of inside bearing design, we recommend use of either Bochum 54 wheels with tapered fitting or Bochum dismountable tyre type.	Too high level of vertical acceleration on the axle mounted equipments.	1. Requirement has been revised.
2	11.3	11.2	We would like to be allowed to propose an improved version of Clouth springs with injected rubber instead of a pressed rubber torus. The supplier could be Kleber or Paulstra France.	Better qualification to qualification test. 2.3.1.2h (3)	2. More details required, provide in proposal.
3	11.4	11.2.2.	LOAD LEVELING We propose to use a double check valve mounted between the 2 air bags which will limit the difference in pressure between 2 opposite bags to a maximum of 7psi.	Simple, safe and reliable system.	3. Acceptable.
4	11.8	11.6	Wheels : see above our comment on SAB-V wheel		4. Same comment as above.
5	11.8	11.6.1.	TOLERANCES ON WHEEL DIAMETER. Bochum normally delivers wheels which are delivered in sets of four wheels matched in diameter to within 0,02 inch. As far as the wheel-axle assemblies are concerned, when rolled on the journals, the treads show indicator readings which are not greater than 0,02 inch in the radial direction and 0,01 inch in a direction parallel to the axle centerline.		5. Requirements remain. 6. Same as above.
6	11.9	11.6.2.	A max. T I R of 0.003 at center of axle is not a normal value Usual value is 0,2 mm or 0,008 ".	Reduction of cost	7. This must be equal or better than the AAR requirement. 8. Comment not clear.
7	11.9	11.7	The axles shall be in SAE 4140 steel, quenched and tempered.	Resistance of the axle.	
8.	11.10	11.7	The max. static load in center of axle is higher than 5000 psi. The axle is calculated taking into account the dynamic and static vertical, transversal and		

CARBUILDER/SUPPLIER : BN CONSTRUCTIONS FERROVIAIRES ET METALLIQUES

SECTION TITLE : FRICTION BRAKE SYSTEM

SECTION NUMBER : 12

#	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	12.1	12.1	GENERAL In respect of the requirements for proven systems, we would like to have the possibility to propose a digital 3-wire brake control which is very simple and reliable and in revenue service on different LRV-systems.		1. Provide details in proposal and submit for our review.
2	12.2.	12.4.e	Due to difference of braking effort between trailer and motortruck, it is usually necessary to have different caliper in trailer and motortruck.	Brake performance optimization.	2. Permitted, see Final RFTP. 3. Not acceptable.
3	12.7.	12.6.8	OPERATING PRESSURE We suggest to add as follows : The air compressor of all the cars of one train will be trainline commanded in a way that all the compressors start at the same time, as soon as the pressure switch of any car has detected the minimum pressure.	To avoid that for coupled cars, it is always the same compressor which starts and feeds the compressed air reservoirs.	4. Two piece discs are required.
4	12.9.	12.7.1.	In order to reduce price, it is common practice to have a 1-part disc for original manufacturing. When worn, they are replaced by 2-part discs.	Reduction of purchase cost.	5. An articulated track brake minimizes the rooster tail effect upon reaching vehicle zero speed. Requirement remains unchanged.
5	12.15	12.7.7.	TRACK BRAKE It must be noted that the articulated track brake usually produces a higher coefficient of friction between track brake shoes and rail at high speeds. At medium and low speeds, however, the solid track brake offers advantages in respect to the coefficient of friction. We therefore suggest that solid track brakes should also be considered providing the performance requirements are met.		

CARBUILDER/SUPPLIER : BN CONSTRUCTIONS FERROVIAIRES ET METALLIQUES

SECTION TITLE : VEHICLE COMMUNICATION

SECTION NUMBER : 13

#	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	13.1	13.1	GENERAL We suppose that the equipments furnished by LATC will conform to the IEC 571,68, 272, 319 and 362.		1. Doubt specs are comparable. Vendor must prove.
2	13.3.	13.3.	POWER SUPPLY The DC/DC power convertor will conform to the IEC 571 with a maximum ripple of 100 mV RMS, and a stabilisator of ± 0,5 V.		2. Provide details in your proposal.
3	13.7	13.5.4.	TAPE PLAYER We suggest the use of a digital static equipment instead of a tape player system. A small control panel on the drivers console comprises of a 2 digit preset to enable the selection of a specific line, a nex station button, a test button and an announce button to release the current announcement. A small display indicates the station number and optionally the station name. With a small incorporated speaker the announcement can prealably be checked.	Our experience shows that after a few months a tape player system is unusable (dirty perception heads, broken belts, mishandling of desk cassettes ...). With a digital static system, maintenance is reduced to a minimum. The system is already in use on some heavy metro systems.	3. Requirement deleted.

CARBUILDER/SUPPLIER : BN CONSTRUCTIONS FERROVIAIRES ET METALLIQUES

SECTION TITLE : MATERIALS AND WORKMANSHIP

SECTION NUMBER : 17

#	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	17.13	17.9.2.	AIR PIPING AND FITTINGS As an alternative for the in-car mounted air lines other than for braking system purposes, we propose the use of nylon calibrated pipes with adapted copper fittings.	- quick installation - weight saving	1. No, for under car and inaccessible equipment, within boxes may be proposed.
2	17.15	17.10.1d	We propose to amend I) as follows : wires which are pulled through conducts or wireways may not be smaller than No. 16	Our experience has shown that wires of a size No. 16 can be used for this purpose, and results in a weight saving.	2. No, require No. 14.
3	17.19	17.11.1	APPLICATION AND INSTALLATION We suggest that it should be acceptable to have only the 750 V cables placed in separate conducts or wireways.	Less conducts or wireways.	3. Requirement remains as stated.
4	17.21	17.11.2.	CABLE CONNECTORS We propose the use of non-watertight connectors for use inside the car, such as round or rectangular types of AMP, Burndy or others.	Less expensive	4. Need detail information, depends on application.
5	17.23	17.11.7.	Connection throughout the car for cables up to a section of AW 12 will be with mechanical solderless PIGD type fastons in pretinned phosfor bronze (AMP or equivalent). Terminals will be used with faston termination for cabling up to AW 12. For AW 10 and larger studs with washer and nylon neets will be used.	Pretinned brass terminals and fastons become brittle after a few years.	5. We do not w-ant Faston connectors, where hardware is only obtainable with Faston then submit information for review and approval.
6	17.25	17.11.13	Cable marking with heat shrinkable sleeves of crosslinking polymers will be acceptable. Different colours can be used to separate the circuits. (e.g. the radio)		6. Need information, possibly okay.
7	17.26	17.11.18	The use of wireways in an isolating material such as PVC, polycarbonate will be allowed. Limitation of the number of cables in a wireway is not necessary as long as the different cables are grouped and bundled. The wireways may contain conductors with a total cross section area up to 60 % of the interior cross section of the wireway.	- light weight, no sharp edges, no oxidation - no grommet material is to be provided. - supplementary isolation.	7. No, this will not be permitted.

CARBUILDER/SUPPLIER : BN CONSTRUCTIONS FERROVIAIRES ET METALLIQUES

SECTION TITLE : MATERIALS AND WORKMANSHIP

SECTION NUMBER : 17

#	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
8	17.28	17.12.6	Comparative fatigue test made by our company has shown that stress relief by heat treatment does not increase the fatigue resistance of welded frame and bolster.	Reduction of price Less deformation of frame	9. This is permitted but subject to approval. See RFTP.
9	17.28	17.12.7	Choice between full penetration and fillet weld depends on stress level in structural member. The choice is validated by fatigue test on the structure.	Reduction of price More intensivity of design to weld quality.	10. Submit in proposal, allowed by RFTP.
10	17.10	17.7.5.	TRUCK PARTS It is to be noted that quality of rubber depends on application : normal qualities are natural rubber and polyuretane.	Common practice	11. No.
11	17.22.	17.11.4	CLEAT We propose that impregnated high quality wood would also be accepted.	Common practice	
12.	17.23	17.11.9	GROUND TERMINAL We propose that stainless steel pads welded to the truck frame body be also acceptable.	Common practice	12. No, brazed copper required.

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SECTION TITLE : SYSTEMS REQUIREMENTS

SECTION NUMBER : 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
	2-9	2.1.7	We would like to bring to your attention that the term full load is not defined. This terminology is also used in other sections. For example p. 2-11; 2.2 b), p. 2-13; 2.2.3.1 a), p. 2-31; 2.3.1.2 f)(2).	Please clarify.	1. Full load is defined in Final RFTP.
2	2-12	2.2.1 c)	Under maximum acceleration, the distance travelled in 20 seconds shall not be less than 700 feet. We would like to suggest that this requirement may be redundant in regard to other performance requirements for specified jerk limits and acceleration rates. This might bring some confusion in the interpretation of the specification.	Please clarify.	2. The additional requirement helps to clarify the high-speed acceleration requirements. 3. Requirement revised, see Final RFTP.
3	2-13	2.2.3.1 a)	Instantaneous rate variations of no more than 0.1 mphps. To our knowledge, no existing hardware can achieve such an accuracy level. We would like to suggest that 0.1 mphps be replaced with 0.2 mphps minimum.	To ensure consistency with current industry standards.	4. This is correct.
4	2-14	2.2.3	Manually controlled magnetic track brakes. Please confirm that this stands for an operation controlled by an electrically activated push button on the cab console and that the track brakes can be applied at any time by the operator.	Please clarify.	5. Requirement has been revised.
5	2-14	2.2.3.1 f)	Mode change dead time of 0.2 second between brake command and initial response. A pneumatic air brake system cannot meet this requirement. We would like to suggest that at least 400 to 500 msec are required for this function to be performed. If required, test results could be presented to justify this statement.	To ensure consistency with current industry standards.	

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SECTION TITLE : SYSTEMS REQUIREMENTS

SECTION NUMBER : 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
5	2-16	2.2.4.1	We would like to suggest that there is a conflict with the description of paragraph 2.2.3.2 regarding the availability of spin-slide correction. In paragraph 2.2.3.2, we understand that there is spin-slide correction under emergency braking condition.	Please clarify.	6. There are two different types of emergency brake applications. 7. Requirements have been clarified.
7	2-16	2.2.6	Rate change requests below specified jerk limits shall follow the command signal within specified accuracy limits. Our understanding is that for a control command requesting an acceleration rate of 3.0 mphps, the jerk limit shall be within the 3-4 $mphps^2$, range, while for a command requesting an acceleration rate of 1.0 mphps, the jerk limit shall be within the accuracy limits of the command; i.e., 1.0 $mphps^2$.	Please clarify.	8. Requirements have been clarified. 9. Requirement revised, see Final RFTP.
3	2-16	2.2.6 a)	We would like to suggest that paragraph (a) may be in conflict with the text of paragraph 2.2.6 on the application of specified jerk rate limits.	Please clarify.	10. Agree, however, it is beneficial to determine problems early.
9	2-17	2.2.8	Mode change dead time of 200 milliseconds should be at least 400 to 500 ms. Please see previous comment no. 5 on paragraph 2.2.3.1 f).	To ensure consistency with current industry standards.	11-12. These areas deal with the propensity to derail, not flexible.
0	2-21	2.2.10.5.1 d)	In regard to the significance and accuracy of physical results obtained from such a study, we would like to suggest that these requirements be assessed against the real car configuration.	It is very difficult to recreate the sound absorption characteristics of materials and the diffraction and reflection characteristics of surfaces.	
1	2-23	2.2.11 c)	We would like to suggest that 110% be replaced by 115%.	This request can be justified by the hysterisis in rubber suspension components. The properties of rubber may also differ among units.	
2	2-23	2.2.11 d)	We would like to suggest that 2% be replaced by 3%.	Same reasons as for preceding comment.	

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SECTION TITLE: SYSTEMS REQUIREMENTS

SECTION NUMBER: 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
3	2-24	2.2.13.1	We would like to suggest that the 3-minute requirement to remove and replace a filter may be unrealistic. Also, we would like to bring your attention that this requirement seems to be in conflict with component change out time requirements in paragraph 2.3.3.2 (30 minutes).	Please clarify. We believe that only through a detailed analysis of final car design the assessment of such a requirement will be possible.	13. Requirements revised and clarification provided.
4	2-26	2.2.14	We would like to suggest that the minimum requirement of 0.2g in figure 2.1 be increased to 0.3g. Meeting 0.2g requires ideal conditions of track, wheel wear, suspension system, etc.	To ensure consistency with current industry standards.	14. Requirement is standard. Test will be conducted with "new" wheels, proper suspension, and on-track of an AAR designated class as specified in Appendix A
5	2-28	2.3.1.1 e)	After "The spray ... cone from ... cones", we would like to suggest the addition of "The nozzles shall be held 46 to 84 inches from the work."	To ensure consistency with current industry practice and complete test description.	15. Requirements clarified.
6	2-28	2.3.1.1 f)	Pneumatic devices and system to be tested in accordance with an LACTC approved functional test. We request that this test procedure be produced by the Contractor and submitted to the LACTC for approval prior to bid opening.	Please clarify.	16. Tight schedule does not permit time for such activity.
7	2-31	2.3.1.2 f)(6)	We would like to bring to your attention that having this environmental test made by an independent laboratory is going to result in significantly higher costs to the Contractor, and in turn to the LACTC. We would like to suggest that the responsibility of this test be left to the Contractor subject to LACTC approval.	Potential cost savings.	17. There is no requirement that these tests be performed by an independent laboratory. What yc suggest is acceptable.
8	2-32	2.3.1.2 h)	We would like to suggest that AW4 (full load) be described. Please see our previous comment no. 1 on page 2-9 and paragraph 2.1.7 of the specification.	Please clarify.	18. Full load definition has been added.
9	2-32	2.3.1.2 h)(1)	We would like to bring to your attention that the specified lateral and longitudinal loads appear to be too severe.	Values currently accepted within the industry for such loads are between 15% and 25% of the vertical load. To that end, we would like to suggest that the lateral and longitudinal loads shall not be less than 20% of the specified vertical load. Potential cost savings.	19. These figures represent standarc requirements. If previous tests have been conducted which are believed to be applicable, then include in proposal.

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SECTION NUMBER : 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
0	2-33	2.3.1.2 h)(2)	Fatigue test of the track brake support bracket and attachments. We would like to suggest that a static test of the supports and attachments (ref: paragraph 2.3.1.2 h)(1)) and a fatigue analysis based on the results of this static test will be adequate for verifying the strength and fatigue characteristics of those components.	Potential cost savings. It is our opinion that fatigue tests are not necessary in this particular case.	20. This test is required; we understand the cost implications.
1	2-36	2.3.1.2 o)	Air conditioning unit; climate room test. We would like to suggest that the costs associated with these requirements are very high and that the opportunity to use an alternate method to conduct these experiments should be offered to the Contractor.	Potential cost savings.	21. Climate tests of this type are necessary to evaluate the equipment early in the design steps before rework costs would prohibit any necessary corrections. 22. Corrected.
2	2-43	2.3.1.3 (a)	Paragraph # 11; 3.4 j) should probably read 3.4 a)	Please clarify (probably a typing error).	23. Adjustments necessary to "tune' vehicle for acceptance and which render vehicles unique to one another.
3	2-49	2.3.1.3 h)	Any adjustments from vehicle running tests shall be noted in the individual car history book. Please clarify the nature and extent of the adjustments mentioned herein. We would like to bring to your attention that it is not a current practice to note such adjustments in the car history book.	Please clarify.	24. Possibly okay, clarify in proposal.
4	2-50	2.3.1.4 b)	Each car to be weighed at contractor's facility. We would like to suggest that the opportunity of selecting an alternate location for weighing the cars be given to the Contractor and remain subject to LACTC approval.	To provide the Contractor with greater flexibility.	

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SECTION TITLE : SYSTEMS REQUIREMENTS

SECTION NUMBER : 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
5	2-53	2.3.2.1	We would like to suggest that these MTBF requirements are too stringent based on 30 mph average and average mileage of 40,000 mi/year (paragraph 2.1.3). This means for propulsion system: 1 fault/year, friction braking system: 3 faults/year, auxiliary electric system and door operators: 1 fault/year. Furthermore, the potential cost penalties in trying to achieve these results could be significant.	It is our belief that the difficulties inherent in meeting these requirements are such that they might be extremely difficulty, if not impossible, to meet in service. Potential cost savings.	25. - We don't agree with your calculations, figures in RFTP are on a car basis. - These MTBF figures are necessary for a fleet availability of 95 percent, which in turn is necessary t meet revenue service requirements.
6	2-53	2.3.2.2	We would like to suggest that a preliminary analysis shall be provided by the Contractor for LACTC review and approval prior to manufacturing start since changes are likely to occur during production.	Please clarify. Long lead times on the delivery of certain components necessitate that a notice to proceed be given to the Contractor as soon as possible. Potential cost savings.	26. We don't understand the comment; it seems to agree with RFTP.
	2-54	2.3.2.4	We would like to bring to your attention that the demonstration period does not seem to be clearly defined. There is no mention of when it starts and when it finishes. Also, no debugging or burn-in period is allowed.	Please clarify in order to eliminate ambiguities and potential confusion. We would like to suggest that a debugging or burn-in period of 1500-2000 miles be considered for the elimination of "infantile mortality" type problems.	27. Demonstration period starts at acceptance and lasts for two years. No "Burn-in" is available. 28. Requirement has been revised.
8	2-54	2.3.3.2	Traction motor change out on the car shall require no more than 4.0 men-hours. It is our opinion that this requirement appears to be somewhat unrealistic (i.e. too low) and that the results can vary from monomotor to bimotor truck configurations. We would like to suggest that 15-20 man-hours as a more realistic and achievable objective.	To ensure consistency with current industry standards and practices.	29. Six month requirement will remain; however, simulated equipment will be permitted but must be replaced when productio pieces are available.
9	2-55	2.3.4.1	It is our opinion that a 6-month period to build that mock-up is too short. We would like to suggest that 16 months would be more representative of what could be achieved.	Design of interior and exterior arrangements and purchase of hardware will require more time. To provide a more achievable target for the industry.	30. This is acceptable.
0	2-56	2.3.4.2	We would like to suggest that "Actual equipment shall ... and piping" be replaced by "Actual equipments shall be used as soon as they are available in place of mock-up components".	Delivery of components may not be adequate to meet underfloor mock-up production schedules and this might result in undue delays to car production schedule.	

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SECTION TITLE : CAR BODY

SECTION NUMBER : 3

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
31	3-1	3.2	We would like to suggest that "The underfloor sheets shall be constructed of stainless steel." be completed by the following addition to read as follows: "The underfloor sheets shall be constructed of stainless steel, low allow high tensile (LAHT) steel or high copper content steel as approved by LACTC."	Specification is too restrictive in regard to floor construction and precludes the use of several existing designs.	31. Only stainless steel will be permitted.
32	3-2	3.3	Carbody section without camber. We would like to suggest that positive camber should be requested or at least allowed in order to make it possible to meet the requirements while providing an allowance to compensate for future carbody shell creep.	Existing requirement precludes the use of an existing design.	32. Requirement has been revised. See Final RFTP Volume I.
33	3-3	3.3	We would like to suggest the addition of the following parenthesis to clarify the text so that it reads as follows: "The use of polyurethane (except for exterior paints) or asbestos is prohibited."	Please clarify. Polyurethane paint system is required for all exterior surfaces by paragraph 17.13.1.	33. Polyurethane paint on exterior permitted, see Final RFTP Volum I.
34	3-3	3.3	Carbody flatness. We would like to suggest that these requirements, particularly considering the flat portions, appear too stringent for a Corten steel carbody construction. Also, we would like to suggest that a limit should be set forth as to the maximum thickness of body filler that can be applied on steel skins.	A tolerance of + 1/8-inch after the application of body filler would be, from our past experience, adequate to provide a high quality surface finish such as that required by the LACTC. Maintain reasonable costs.	34. Requirements are as stated in t Final RFTP Volume I.
35	3-3	3.3	We would like to suggest that room for the Contractor to address car exterior acceptance provisions should be left in the final RFTP.	We would like to bring to your attention that the last sentence of paragraph 3.3 concerning the appearance of finished car exterior leaves sufficient latitude for subjective evaluation and judgement which may result in a serious imbalance during discussions related to car acceptance. To avoid confusion and costly conflicts and delays.	35. We don't believe it to be subjective. Quantitative measurements can be made. No change.

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ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
36	3-4	3.4 a)	The specified dynamic load variation of not less than ± 20% appears too high. We would like to suggest that the normal accepted value in the industry (± 15%) be kept instead.	To ensure consistency with current industry standards and practices. Potential cost savings.	36. Requirement remains as is.
37	3-4	3.4 b)	The following requirement appears unnecessarily restrictive, i.e. "the highest stress inboard of the coupler anchor shall not be in any part of the articulation or the yoke arms...". We would like to suggest the deletion of this requirement. The given limitations on the stress inboard of the coupler anchor to 90% yield and to 90% of the highest stress outboard of the coupler anchor are adequate.	To ensure consistency with current industry standards and practices.	37. Requirement remains as is. 38. Requirements are as stated in Final RFTP Volume I.
38	3-5	3.4 f) & g)	Requirements for "40k vertical + 100k longitudinal" at the anticlimber and "25k vertical + 100k longitudinal" at the articulation.	These requirements appear too severe in regard to current industry standards. It is not usual practice to superimpose these loads. We would like to suggest that the vertical and longitudinal loads be treated as separate loads, as normally accepted in the industry. To avoid costly redesign of proven vehicles and maintain cost control.	39. Requirements have been revised 40. Prequalified joints are what w want. Other standards may be submitted for approval.
39	3-9	3.7.1	Removable anticlimber. We would like to suggest that a permanent anticlimber integrally welded to the end sill should be acceptable as well.	Simpler, lighter and more cost-effective construction can best be achieved with a permanent anticlimber.	
40	3-9	3.7.1	Requirements for AWS prequalified complete joint penetration groove welds. We would like to suggest that welding should not be limited to AWS prequalified joints.	Joints other than the AWS prequalified joints are also permitted in the AWS code provided these are qualified according to the AWS code.	

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SECTION TITLE: CAR BODY

SECTION NUMBER: 3

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
-1	3-9	3.7.1	Heat treatment of end underframe. It is our opinion that these requirements are not justified. We would like to suggest that heat treatment be done only to the car body bolster (bolster beam) and only if required for stress relief prior to any machining operation.	Potential cost savings.	41. If needed to retain strength requirements according to materials manufacturer, then it must be conducted.
-2	3-10	3.7.3	We would like to suggest that "Flat sheets or stainless steel ... and form a sub-floor." be modified to read as follows: "The underfloor sheets shall be attached to the transverse floor beams to retain the fiberglass insulation and form a sub-floor."	This would allow a corrugated underfloor for added strength.	42. Alternative described in Final RFTP Volume I. 43. Probably okay, provide details proposal.
-3	3-12	3.8.2	The specified hat-shaped requirement for the longitudinal belt rail is restrictive. Other functional shapes should be permitted as long as structural strength and functional requirements are met.	To provide the Contractor with greater design flexibility and to allow existing design.	44. RFTP revised, see Final RFTP Volume I.
-4	3-18	3.12.1 (2)	We would like to suggest the deletion of "2-1/2 inches thick 3/4 pound density" and "3-inch fiberglass insulation consisting of a 1-1/2 inch thick layer of long fiber, 1-pound density fiberglass and 1-1/2 inch thick layer of short fiber, 1-pound density." and the addition of "Heat transfer through the carbody shall be determined by trade-off studies (CDRL). The location, weight, and thermal conductivity of the insulating material shall be part of these trade-off studies. A design goal for the heat transfer rate is 1,250 BTU/hr/$^{\circ}$F."	Specification is too restrictive and precludes the use of better designs and/or materials.	45. Requirement remains as stated RFTP.
-5	3-19	3.13	Side windows shall be designed to be pushed outside in case of an emergency. We would like to suggest that greater emphasis should be put on overall evacuation requirements instead of emergency exit design.	Considering that evacuation from one side only (with four double doors per side) is in the range of 3.0 minutes, this requirement, mainly because of considerations related to design, is going to be costly and will add more weight to the car. Maintain weight and control cost.	

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
46	3-19	3.13.2 (2)	We would like to suggest that "A three piece windshield shall be provided." be modified to read as follows: "A three-piece windshield may be provided."	Leave room for a better design by allowing the Contractor more technical flexibility.	46. Configuration requirements ha been modified, see RFTP Volum
47	3-20	3.14 (3)	We would like to suggest that ",and the minimum seat width shall be 18-3/4 inches." be modified to add ",or the two-passenger seat width shall be 36 inches."	From our knowledge, no seats such as those described in the specification are currently available in North America. In any event, this change would certainly help to preclude a sole source supply situation from occurring that could be costly to the LACTC.	47. Probably okay, provide detail proposal.
					48. Probably okay, provide detail proposal.
48	3-21	3.14.1	Passenger seat frame and its support to be an integral unit. Since it appears likely that many different seat configurations will be required, this particular requirement would not have any positive effect on seat interchangeability. We would like to suggest the deletion of this "integral unit" requirement.	Improve on interchangeability and overall design flexibility.	49. Okay, see Final RFTP, Volume 50. Clarified, see RFTP Volume I. 51. RFTP remains unchanged.
49	3-23	3.16.2	We would like to suggest that "The outside surface of stanchions shall be clad with stainless steel." be modified to read as follows: "The stanchions shall be made of tubular stainless steel or stainless steel clad tubular steel."	Tubular stainless steel is readily available at a lower price and offers a better appearance. Potential cost savings.	51. a. Details are not available this time.
50	3-23	3.16.2	The specification says "windscreen shall not block the operator's view of seated passengers or door areas". Because of the "floor to ceiling" and "plymetal construction" requirements, the windscreens will certainly partially block the operator's view at door areas.	Please clarify.	
51	3-25	3.16.5 c)	We would like to suggest that the last sentence of this paragraph be deleted.	Reasons related to corporate identification policies do not allow any approval such as that mentioned in this paragraph.	
1 a.	3-25	3.16.5 f)	We would like to suggest that "other designations" should be clarified in order to allow for a proper evaluation during bid preparation.	Please clarify.	

CARBUILDER/SUPPLIER: BOMBARDIER INC.

SECTION TITLE: COUPLERS AND DRAFT GEAR

SECTION NUMBER: 4

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
52	4-2	4.2.4	Paragraph 4.2.4 of the specification requires that the standard draft gear be able to absorb the energy of coupling up to speeds of 3 mph. In addition, it must have as a back-up device, a frangible element in the form of a mechanical tube which will collapse or deform at a buff load of 75,000 lbs. We would like to suggest that a Jarret shock absorber be used instead of the mechanical tube. The Jarret device, which uses a high viscosity fluid, will come into play at a certain buff force and will compress, with increasing reaction, over the stroke of the device. The preload, the maximum reaction and the stroke can be designed to suit. The second paragraph could read as follows: "In addition to the standard rubber (or ring spring) draft gear, the coupler shall be provided with an energy absorbing device, using a high viscosity fluid, to absorb energy during overspeed coupling without damage to the coupler or car frame. The device will come into action at ... lbs and will have a stroke of ... inches. The maximum reaction at the end of the stroke will be ... lbs. Recovery of the device, to its normal position after impact, will be automatic and immediate thus rendering the coupler ready for reuse without service."	Reduced maintenance and component replacement costs, plus greater reliability and successful revenue service experience.	52. RFTP to remain unchanged.
					53. RFTP to remain unchanged.
53	4-4	4.4.5	The cover shall not be damaged by maintenance personnel using the cover as a step. We would like to suggest that requirements for a load or weight to be supported should be added to this paragraph.	Please clarify. This would help the Contractor in establishing design criteria for cover construction.	54. Brake pipe requirement has deleted.
54	4-5	4.5.1	Status of brake pipe when the car is isolated electrically appears to be ambiguous.	Please clarify.	

CARBUILDER/SUPPLIER: BOMBARDIER INC.

SECTION TITLE: OPERATOR'S CAB

SECTION NUMBER: 5

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
55	5-1	5.2	Plymetal construction for cab partition and door. We would like to suggest that the possibility for the Contractor to propose alternate materials should be given, subject to LACTC review and approval.	Possibility of dramatic weight reduction.	55. Possibly okay, make a proposa
56	5-2	5.2	Kick plate, 8 inches high on the inside and outside of cab door. We would like to suggest that aesthetic aspects should be given due consideration in regard to this particular requirement.	Possibility of aesthetic improvement.	56. Okay, provide a proposal.
57	5-6	5.3.15.2	Trainlined Annunciation: c) and d). Isn't it preferable to inverse the function and provide an indication of open door which is important when the car is rolling.	Possibility to diminish potential safety hazard by allowing train operator to react according to circumstances.	57. RFTP to remain unchanged. Se Volume I.
58	5-8	5.4	Short, intermediate and long term fare collection policy plans of the LACTC will have to be provided since it is required that the cars be compatible.	Please clarify as to the time when this information will be available for Contractor review.	58. Statement deleted, see Volume

CARBUILDER/SUPPLIER : BOMBARDIER INC.

SECTION TITLE : PASSENGER DOORS

SECTION NUMBER : 6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
59	6-3	6.2.2	Opening time of 1.5 sec. ± 0.1 may be difficult to achieve. We would like to suggest that this requirement be changed for 2.0 ± 0.1 which would be more realistic.	As stated, this requirement may preclude the use of swing plug type doors and restrict door operator supplier choices to a minimum number.	59. See Volume I.
60	6-4	6.2.4 b)	The word "captured extremity" needs clarification and explanation as to the extent and nature of its contractual definition.	Please clarify.	60. See Volume I.
61	6-10	6.4.6 c)	In the case of an emergency situation, we would like to suggest the use of a manual door release handles which offer a very interesting alternate, particularly in terms of passenger safety.	Diminish potential safety hazard and consequent liability aspects of emergency evacuation situations.	61. RFTP remains unchanged.
61 a.	6-11	6.4.9	The Public Address shall not be used for the warning signal. We would like to suggest that the PA System speakers be used for the warning signal. If not, how many other speakers would be required for the warning signal?	Please clarify. Potential cost and weight savings.	61a. Requirement remains unchanged see Volume I.

CARBUILDER/SUPPLIER: BOMBARDIER INC.

SECTION TITLE: AIR COMFORT SYSTEM

SECTION NUMBER: 7

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
62	7-4	7.3	The specification reads "If the exterior ambient temperature falls below 40°F, the heating system shall maintain a temperature in the car of not less than 28°F above the outside ambient temperature" and paragraph 7.5, page 7-12, says that if Ta ambient is below 40°F, Ti interior should be 68°F ≤ Ti ≤ 72°F. We would like to suggest that a discrepancy may exist between both statements.	Please clarify.	62. Clarified, see Final RFTP.
63	7-4	7.3	There is no tolerance specified for any temperature. We would like to suggest that +0°F, -5°F be added as an appropriate tolerance.	Please clarify by adding an appropriate tolerance.	63. Tolerances are specified in Section 7.5.
64	7-5	7.3.2	There is no tolerance specified for any temperature. We would like to suggest that +0°F, -5°F be added as an appropriate tolerance.	Please clarify by adding an appropriate tolerance.	64. Same as above.
65	7-11	7.2.2	Access to filters. We would like to suggest that access to filters from inside the car is sufficient for regular maintenance. It is our belief that the adverse effects on overall design complexity resulting from watertightness integrity requirements would far exceed the benefits of having a supplementary access way to the filters from outside the car.	To reduce overall design complexity.	65. Requirement revised.
66	7-13	7.5	Tolerance on variations in interior car temperatures. We would like to suggest that ±2°F be replaced by ±5°F in all cases. It is our opinion that ±2°F is too restrictive in regard to the physical capability of the equipment to meet these requirements.	To ensure consistency with current industry practices. Potential cost savings.	66. Requirements have been revise see Final RFTP.

CARBUILDER/SUPPLIER: BOMBARDIER INC.

SECTION TITLE: LIGHTING

SECTION NUMBER: 8

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
	8-2	8.2.1	We would like to suggest that the LACTC provide an anticipated switching and operation pattern to the Contractor in order to analyze the technical feasibility of these requirements.	Lamps have an average life of 20,000 hours. We would like to bring to your attention that this requirement can be achieved as long as the switching occurs no more than once every three hours. To present suppliers with realistic objectives.	67. Agree with comment. Include information in proposal.
	8-6	8.4.4	It appears that there are two different types of description; one using the auxiliaries ON-OFF and the Master Controller (paragraph 8.3.2), and the other using the terminology of cab switch LOCAL and ON.	Please clarify by using consistent wording.	68. Clarified in RFTP, Volume I.

CARBUILDER/SUPPLIER : BOMBARDIER INC.

SECTION TITLE : PROPULSION SYSTEM AND CONTROL

SECTION NUMBER : 10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
4	10-9	10.7.1	We would like to suggest that the following sentence be modified to read as follows: "The air intakes shall be screened and positioned on the sides or above the car roof ... water or debris."	A side intake requires a shorter duct to the motor and does not affect the appearance of car interior.	74. Possibly okay, provide details proposal.
75	10-14	10.7.8	Is one ground brush at the end of each axle acceptable? We would like to suggest that one ground brush for each axle is enough. There seems to be a discrepancy with paragraph 9.1.5, page 9-5.	Please clarify.	75. Requirement remains as stated i Final RFTP.

CARBUILDER/SUPPLIER: BOMBARDIER INC.

SECTION TITLE: TRUCK ASSEMBLIES

SECTION NUMBER: 11

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
76	11-1	11.1	Access to axle centers for wheel truing. We would like to bring to your attention that axle end ground brushes may create physical interference. However, we would like to suggest that they be allowed because a trade-off maintainability analysis would certainly be in their favor.	Please clarify.	76. Provide details in proposal.
77	11-2	11.2	For operation, there has to be rotational stops welded on truck and underframe to limit movement to $\pm$ 12°. We would like to suggest that the purpose for 90° rotation requirements should be compared against operational requirements of the car and related safety aspects.	This is to protect wires and cable going from truck to carbody sanding hoses, ground wires, etc.	77. Okay, but strength of stops must be adequate in case of derailment. 78. Cut-out cocks may be car body mounted and therefore, not affected by truck change out.
78	11-3	11.2	Air bag secondary suspension. All cut-out cocks on the same side of the car. Please clarify in regard to interchangeability requirements i.e. changing motor trucks from A end to B end.	Please clarify.	79. Requirement remains. 80. Half an inch remains as the requirement. Method of measurement to be approved by LACTC.
79	11-4	11.2.2	We would like to suggest that the proposed 1/4" response deadband should be increased to 3/8" because minor motions generated by passenger boarding and unloading could have an adverse influence on the usable life of the air compressor with such a small deadband.	That would result in less severe service for the air compressor and would significantly increase its service life expectancy.	81. See Final RFTP, Appendix A.
80	11-4	11.2.2	We would like to suggest that the proposed 1/2" transverse floor level variation be increased to 1".	It is our belief that 1/2" over a 9' span provides too little allowance for factors such as rubber suspension components creep.	
81	11-8	11.6.1	Wheel profile to be submitted by the Contractor. We would like to suggest the addition of provisions discussing the delay within which the LACTC will have to supply the track profile data to the Contractor so that he can establish wheel profile design parameters.	Please clarify.	

CARBUILDER/SUPPLIER : BOMBARDIER INC.

SECTION TITLE : FRICTION BRAKE SYSTEM

SECTION NUMBER : 12

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
82	12-1	12.2	It is our understanding that the proposed air applied and spring released friction brake system does not appear to be of the fail-safe type. We would like to suggest that a confirmation on this fact should be given to the Contractor in the specification.	Please clarify.	82. The required system will be the fail-safe type.
82 a.	12-15	12.7.7	Each vehicle shall be fitted with two articulated magnetic track brake assemblies per truck. We would like to suggest that solid track brakes be allowed.	To allow the Contractor greater design flexibility and to provide for a larger number of supliers. Potential cost savings.	82a. Requirement for articulated brake remains.

CARBUILDER/SUPPLIER: BOMBARDIER INC.

SECTION TITLE: AUTOMATIC TRAIN STOP

SECTION NUMBER: 14

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
83	14-1	14.3.1	General description. The system will be designed to operate up to 75 mph. Please clarify the specification in regard to an operating speed 55 mph and a design speed 65 mph.	Please clarify.	83. Maximum operating speed shall be 55 mph. Maximum vehicle design speed shall be 65 mph. Maximum ATS design speed shall be 75 mph.

CARBUILDER/SUPPLIER : BOMBARDIER INC.

SECTION TITLE : IN-SERVICE SUPPORT

SECTION NUMBER : 15

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
84	All pages	All paragraphs	We would like to request that the nature and extent of the involvement of the SCRTD in terms of approval be clarified in regard to the contractual obligations of the Contractor.	Please clarify in order to avoid any possible confusion related to the interpretation of the specification.	84. They are not involved in the approval process.
84 a.	15-9	15.3.3	We would like to suggest that a clarification be made in regard to the supply of special tools for assembly and disassembly of the car and subsystems. The nature and extent of this requirement should be further explained with respect to the Contractor's production tooling.	Please clarify.	84a. Special tools are those which cannot be bought off-the-shel commercially. As part of the Final RFTP, a question will b asked to proposers on their suggestion for special tools.

CARBUILDER/SUPPLIER: BOMBARDIER INC.

SECTION TITLE: MANAGEMENT

SECTION NUMBER: 16

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
B5	16-4	16.9	Computerized control of vehicle configuration. A more detailed description of hardware and software types should be given in the specification so that the Contractor is able to better anticipate the requirements during bid preparation.	Please clarify.	85. When available. Presently has not chosen any particul system. Provide suggestion proposal.

CARBUILDER/SUPPLIER: BOMBARDIER INC.

SECTION TITLE: MATERIALS AND WORKMANSHIP

SECTION NUMBER: 17

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
86	17-1	17.1.1	We would like to suggest that the following sentence be modified to read as follows: "All materials exposed to cleaning operations shall be unaffected by CONTRACTOR approved cleaning agents."	Please clarify. It is our opinion that warranty obligations justify an approval by the Contractor of all cleaning agents used by the LACTC for the LRVs.	86. Revised.
87	17-4	17.2.2	All fasteners not visible to passengers on the inside or outside of the car shall be stainless steel or zinc plated steel. May we use cadmium-plating as described in paragraph 17.2.3 of page 17-4?	Please clarify.	87. Requirement remains unchange 87a. Revised.
87 a.	17-7	17.4.1	We would like to suggest that "may" in the first sentence be replaced with "shall".	To avoid possible confusion and ensure consistency with the requirements of Section 3 of the specification.	88. Requirement.
88	17-10	17.7.3	We would like to suggest that the warranty period on elastomeric parts be changed from 5 years to 2 years to reflect current industry standards.	To ensure consistency with current industry standards. A great deal of reluctance can be anticipated from elastomeric parts suppliers.	89. Only if they are housed in continuous thick-walled cond
89	17-22	17.11.5	Hi-voltage cabling is allowed inside the car only for heater circuits. We would like to suggest that high voltage power cables running from the pantograph down to the propulsion control system can certainly represent a major exception in that respect.	Please clarify. To ensure consistency with current industry practices.	90. Spiral metal type not permit 91. No.
90	17-24	17.11.10	It appears to us that truck to carbody connections will certainly require flexible type conduits. We would like to suggest that flexible type conduits should be allowed, subject to LACTC approval.	This is required by design.	
1	17-26	17.11.19	Would aluminum conduits be acceptable? We would like to suggest that both "rigid steel" and aluminum conduits be allowed, subject to LACTC approval.	Potential weight reduction.	

CARBUILDER/SUPPLIER: BOMBARDIER INC.

SECTION TITLE: MATERIALS AND WORKMANSHIP

SECTION NUMBER: 17

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
92	17-28	17.12.6	This requirement should be clarified as to extent and application. End underframe is not normally subjected to heat treatment for stress relief or strength improvement. Please see previous comment no. 41 on paragraph 3.7.1, page 3-9.	Please clarify. Potential cost savings.	92. See comment and response, nu 41.
93	17-30	17.13.1	It says "painting shall be done in a clean, dry atmosphere at a temperature not less than 68°F and paragraph 17.13.2 page 17-32 says "painting shall be done in a clean, dry atmosphere at a temperature as recommended by the paint manufacturer". Which requirement prevails?	Please clarify.	93. Revised. 94. Comment is correct, has bee revised.
94	17-34	17.14.3	Seat cushion and seat frame; Ds $\leq$ 35 time not specified, and Ds (1.3) seems unusual.	Please clarify in regard to probable typing errors.	95. This is as directed by SCRT
95	17-35	17.14.3	We would like to suggest that the 1-hour ASTM E-119 requirement for floor construction be re-evaluated in regard to the availability of eight (8) double doors per side in case of an emergency evacuation situation.	To ensure consistency with current industry standards. It is our opinion that 15-minute is an adequate requirement to provide for a safe emergency evacuation performance capability. Potential cost and weight savings.	96. Clarification provided.
96	17-46	17.17.3	Asbestos construction panel. We would like to suggest that there seems to be a conflict with paragraph 3.3, page 3-3, where the use of Asbestos material is forbidden.	Please clarify.	

CARBUILDER/SUPPLIER: Breda Costruzioni Ferroviarie / Kiepe

SECTION TITLE: Systems Requirements

SECTION NUMBER: 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	2-6	2.1.4 (f)	Please specify the composition of the metallic subway tunnel dust as well as its degree of fineness.	Clarification.	1. System is not built yet; however, initial metallic "dust" should contain iron oxide from rail grinding operations.
2.	2-11	2.2 (c)	Please specify if inoperative cars shall be able to brake pneumatically. Also please specify if the sequence of operative and inoperative cars in an eight car train shall be at random.	Clarification.	2. Inoperative cars should assume to be randomly placed in consist and without braking capability.
3.	2-13	2.2.3.1	Please specify what is meant by "General Order 143, as interpreted by the CPUC for this contract".	Clarification.	3. This section has been clarified to stated LACTC's interpretation.
4.	2-17	2.2.8	Would it be acceptable to have a 500ms dead time for a mode change of the CAM shaft controller?		4. Requirement revised, see Final RFTP.

CARBUILDER/SUPPLIER: Breda Costruzioni Ferroviarie

SECTION TITLE: System Requirements

SECTION NUMBER: 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
5	2-8	2.1.6(m)	The required values (8" and 10") seem excessive (to us) in comparison with those required for similar vehicles: GCRTA car 3" and 6.5", MBTA car 5" and 7".	This would allow greater flexibility of the under-floor arrangement with less complicated maintain-ability.	5. Requirements remain unchanged.

CARBUILDER/SUPPLIER: Breda Costruzioni Ferroviarie

SECTION TITLE: Car Body

SECTION NUMBER: 3

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	3-18	3.12.1	The thickness of the insulation for the roof and sides (2.5") and for the floor (3") seems excessive to us in comparison with the required dimension for similar vehicles, considering the fact that weather conditions in L.A. are more favorable. For example, minimum temperature predicted for L.A. is +20 degrees F, while for Boston it was -20 degrees F.	It would avoid incurring greater costs without gaining any additional advantages. It would also avoid increasing the weight of the car structure.	1. Possibly okay, must meet all performance requirements in heating and cooling. Provide details in proposal.

CARBUILDER/SUPPLIER: Breda Costruzioni Ferroviarie

SECTION TITLE: Passenger Doors

SECTION NUMBER: 6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	6-4	6.2.3	We request that an option be included in the specifications that would allow the use of an obstruction detection system which utilizes a device that measures the time required for door closing.	It would result in a simpler, more reliable system.	1. No, a sensitive edge is required. 2. Probably okay, provide details in proposal.
2.	6-7	6.3.6	We suggest replacing the sentence: "Each doorway shall be equipped with its own separate logic package..." with the following: "Each half body shall be equipped with door controls that will permit operation of the doors through the train-line controls."	It would result in reduced costs.	

CARBUILDER/SUPPLIER: Breda Costruzioni Ferroviarie / Kiepe

SECTION TITLE: Propulsion System & Control

SECTION NUMBER: 10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
3	10-3	10.2.1.3	Would it be acceptable if we were to meet the ride quality requirements with a lower number of resistance notches?		3. Requirements revised, chopper control only permitted.

CARBUILDER/SUPPLIER: Breda Costruzioni Ferroviarie

SECTION TITLE: Truck Assemblies

SECTION NUMBER: 11

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	11.3	11.2	We request permission to use a primary suspension with coil springs.	Our comment is based on our lengthy experience with these components in similar applications.	1. Need more details, provide in proposal.
2.	11.7	11.4.1	We request permission to use lateral shock absorbers of the linear-viscose type.	The same level of ride quality is achieved at lower costs and with better maintainability.	2. Need more details, provide in proposal.

CARBUILDER/SUPPLIER: Breda Costruzioni Ferroviarie

SECTION TITLE: Friction Brake System

SECTION NUMBER: 12

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
	12-2	12-4 a	We suggest removing "from transducers provided by the friction brake supplier".	It would result in reduced costs.	1. No, this requirement is to assume proper interfacing.

CARBUILDER/SUPPLIER: FAIVELEY

SECTION TITLE: SYSTEM REQUIREMENTS

SECTION NUMBER: 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	2-15	2.2.4	Wheel spin/slide protection. Is the solid state microprocessor spin/slide control system acceptable?	Improve system efficiency, thus passenger comfort and safety.	1. In concept okay, need details in proposal.

CARBUILDER SUPPLIER FAIRLEY

SECTION TITLE PASSENGER DOORS

SECTION NUMBER 6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
2.	6-1	6.1	Outward folding or swing plug door design is not compatible with the requirement of high plateform passenger boarding. If high plateform passenger boarding is maintained, it is recommended to have either Inward folding or outside sliding or outside slide plug door design.	Passenger safety. Possible interference with plateform.	2. No, outward folding or swing plug are required.
3.	6-1	6.1.1	Door leaf inside painting not compatible with para. 3.1.1.2, page 3-18 and 17.13.3, page 17-32.	Better spec. understanding.	3. 6.1.2 explains.
4.	6-3	6.2.1.1 & 2	Preferences for electric door operator motor - vs - pneumatic door actuation.	Uptimum operation and maintenance.	4. Subcontractors option:
5.	6-3	6.2.2	Operating mechanism generating forces 30 lbs on both door leafs simultaneously or 60 lbs on one single leaf to open both doors.		5. 30 lbs. per leaf.
6.			In the case of swing plug door design, it may be advisable to increase force to improve door tightness. Opening and closing times are fairly short adding strain to the mechanism; also, tolerances are minimal for such a system. It is proposed to specify 2.5 to 3.0 open and close for electric operation - 2.5 to 3.5 open and close for pneumatic actuator which are generally used for this type of application.		6. Required operating times are achieval
7.	6-5	6.2.4.6	The expression "captured extremety" needs to be clarified and defined. One sensitive edge cell per door leaf may be an improvement.	Improve passenger safety.	7. Will clarify.
8.	6-3	6.3.6f	In the case of electric door operator, electronic chopper control is a proven technology. Some electronic controls are desirable.	Improve system operating and reliability.	8. Probably okay, provide information i proposal.
9.	6-3	6.4.1	We propose that the "No motion action" cuts the power supply to the control unit: only then the signal would be in a door closed configuration without cutting power to the operation motor or actuator. Electric locking is achieved by the motor in case of default of the locking mechanism.	Improve passenger safety.	9. Provide detail information in propos
10.		6.4.9	Clarification needed of warning signal definition.		10. Chime near doorway and one per doorw

CARBUILDER SUPPLIER FAIVELEY

SECTION TITLE AIR COMFORT SYSTEM

SECTION NUMBER 7

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
11.	7-4 7-5	7.3.1 7.3.2	Power available to be chosen by FAIVELEY or carbuilder for double stage heating depending upon car configuration and operating conditions.	Better spec. understanding.	11. Elements may be HVDC or three phase Controls shall be battery powered.
12.	7-6	7.4	Can FAIVELEY be an approved supplier?	Improved passenger comfort.	12. Provide detailed proposal which meet all requirements and we will review.
13.	7-8	7.4.2	Based on our experience, a double circuit evaporator system would provide better control of comfort.	Improved system reliability.	13. Same as #12.
14.	7-10	7.4.3	Does fan and compressor motor have to be Class F insulation, and oversize frame size? Acceptability of rotary hermetic compressor.	Improved passenger comfort and equipment reliability.	14. Provide details in proposals.
15.	7-12	7.5	Are solid state electronic control unit accepted?		15. Same as #14.

CARBUILDER/SUPPLIER: FAIVELEY

SECTION TITLE: AUXILIARY ELECTRICAL EQUIPMENT

SECTION NUMBER: 9

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
16.		9.1.2.2	It is proposed to specify single arm pantograph instead of the "Diamond Style".	Reduction in weight and improved aerodynamic characteristics.	16. Requirement has been revised, see Final RFTP.

CARBUILDER, SUPPLIER: FAIVELEY

SECTION TITLE: TRUCK ASSEMBLIES

SECTION NUMBER: 11

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
17.	1-1		Wheel flange lubrication not specified.	Reduction of power on consumption, wheel and truck wear.	17. Not a system wide concern, if required will be used locally.

CARBUILDER/SUPPLIER: FAIVELEY

SECTION TITLE: FRICTION BRAKE SYSTEM

SECTION NUMBER: 12

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
18.	-	-	Comparaison between pneumatic and hydraulic braking system.	Increased passenger safety and comfort.	18. Don't want additional maintenance.
19.	12.5	12.7.7	Track Brakes Would rigid magnetic track brakes be acceptable instead of the specified articulated ones?		19. No, articulated required.

CARBUILDER/SUPPLIER: FERROSTAAL

SECTION TITLE:

SECTION NUMBER:

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.		2.1.2	The coupler impact is understood by us to the effect that one vehicle is pushed against a second stationary vehicle at a speed of 3 mph, and the couplers are engaging mechanically.		1. Clarification provided.
2.		2.1.7	Under Item 2.3.1.2 you mention amongst others the load case AW4 without giving its definition; however, we recommend to assume in accordance with VOV specifications a standing load of 8 persons/m2.		2. Definition provided, see Fina RFTP.
3.		2.1.9	The impact factors for truck frame mounted components amounting to 20 g are not usual for strength calculations of European railways. We would propose the following dynamic load assumptions for carbody and truck mounted components: Carbody / Truck hori./longi. (x): 2g / 4g hori./lat. (y): 1g / 2g vertical (z): 2g / 3g		3. 20 g is a single-impact requirement. 4. This is correct. 5. Clarification provided. 6. Requirements revised.
4.		2.2.10.3	The requirements are understood by us as applying to measurements taken of the auxiliary equipment on the stationary vehicle.		
5.		2.2.10.4	We think that for the measurements, it should be required to define also the condition of the wheel tyres and of the rail surface (new or ground respectively).		
6.		2.2.13.4	Please explain the term "improvements" (improvements with respect to which base of reference).		

CARBUILDER/SUPPLIER: FERROSTAAL

SECTION TITLE:

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ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
7.		2.3.1.1	A watertightness test as required seems to us to be not practicable since an economical manufacturing sequence would no longer be ensured due to the requirement that the vehicle has to be provided with all necessary appointments. The carbody shell is anyhow subjected to tests according to approved methods for the tightness of welds so that the subsequent watertightness test may be confined to doors, windows, panels, etc. whose possible leakage could also be seen when the vehicle is completely trimmed.		7. Not necessary to provide all appointments, plugs acceptable for first test. This is what we want.
8.		2.3.1.2(h2)	It is usual and best results have been obtained with respect to dimensioning, to vibrate not the truck with mounted components but only the complete truck frame.		8. Want the completed truck tested, i.e., track brake hangers, brake actuators, etc.
9.		2.3.1.2(q)	Please explain this test to us since it is unusual for LRVs.		9. Purpose: determines areas of extreme air leakage.
10.		2.3.1.3 (a8, 11, 13)	In order to preclude residual stresses after the load tests have been performed, it is necessary to preload the carbody prior to the tests proper in order to stabilize the shell structure, see also ORE B12/RP 17.		10. - Alternatives are permitted, see Volume II. - Stabilizing shell structure. Provide details for review in proposal.
11.		2.3.3.2	According to our experience, we are able to confirm the maximum person hours indicated, including the following deviations, however: - two traction motors (example two-axled longitudinal drive) 8.0 h - motor truck 4.0 h These periods include also the jacking of the vehicles and disconnecting and connecting of all mechanical, pneumatic and electrical connections. - coupler (complete) 2.0 h		11. 8.0 hrs. and 4.0 hrs. are acceptable. No, 1.0 hr. is required.

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12.		2.3.4.1	Since the mock-up is in the first place to be used of the passenger section, it will, in the phase of reaching a decision at any moment , be possible to change certain components in order to achieve the best possible design. Since the actual design work of the vehicle will not be performed until having obtained the approval of the mock-up the time required for the preparation and approval of the mock-up has to be included in the time schedule.		12. The mock-up shall be provided for approval nine months after Notice to Proceed.
13.		2.3.4.2	Same as the mock-up described under 2.3.4.1, also the provision of the mock-up of the car underfloor arrangement will cause a delay to the time schedule since decisions can only be taken after the relevant drawings will have been reflected in the mock-up. In order to minimize this delay, we would recommend to use for the mock-up materials which are typical for that purpose, such as wood and plastics and to manufacture only part models of the areas of particular importance.		13. Simulated components are acceptable until production pieces are available, at which time they must be fitted.
14.		3.6.1	A characteristic feature of the LHB articulation design is that the carbody sections A and B are jointly supported on the bolster of the non-motored truck.		14. We believe this meets our requirements. Provide plenty of details in proposal.
15.		3.6.2	As already mentioned, 3.6.1 the LHB articulation is a design featuring the direct connection between the A section and the B section without an additional articulation section mounted on the non-motored truck. The carbody sections are sealed by means of one-part bellows which may be panelled from inside and outside. We assume that this approved solution will also be admitted by you.		15. Provide in proposal.

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16.		3.7.3	It would have to be considered whether the flat sheets in the floor could, at least partly, be replaced by weight-saving and strength-increasing corrugated sheets.		16. Alternative to special requirements will be looked at; provide details in proposals. Any alternative must meet all other requirements.
17.		3.8.1	Your requirements regarding concentrated roof loads are interpreted by us to the effect that maintenance personnel of the usual number (2to 5 persons) may work on the roof and not that the roof is loaded throughout in accordance with the aforementioned requirements.		17. This is correct.
18.		3.8.2	We recommend to reduce the use of hat and zee-shaped sections and box sections as far as possible in order to minimize corrosion-proneness which increases when material doublings are employed.		18. Provide in proposal.
19.		3.9.4	We recommend a flat board lowered central roof gathering and draining the rain water in concealed form so that rain gutters are not required.		19. Possibly okay, provide details in proposal.
20.		3.10	We understand the construction type of the holes used for the fastening elements in such a way that a hole is countersunk through the steel skin and not that the steel skin is formed. Furthermore, we would ask you for an explanation with respect to providing stainless steel plates on both sides of the floor panels since this is in our experience not usual with LRVs.		20. If skin is a thickness-permitting countersinking okay, but doubt it.
21.		3.10.2	In order to facilitate cleaning, it should also be allowed to use non-slip floor coverings without ribbing. In most cases, the floor panels are trimmed with approved aluminum mouldings.		21. Underseat use okay, ribs necessary in walking, standing and handicap areas. Not acceptable, must be stainless steel.

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22.		3.12.1	Please let us have more detailed description of the application of Ultracoustic in underframe and side wall.		22. Acoustic material sprayed in place. The thermal material is "stuffed" and glued in place.
23.		3.14.3	It should be considered whether it would be convenient to renounce, to the advantage of optimum seating comfort, the requirement of identical cushion inserts for seat bottoms and backs.		23. Can be different, but both must be removable.
24.		3.15	In view of the remaining aisle width accessability for wheel chairs can only refer to the areas near the operator's cab provided with the tie down arrangements, i.e. accessability through doors 1, 4, 5, and 8.		24. Access will be through end doors only. 25. Probably okay, provide details i your proposal.
25.		4.1	More than 200.000 Scharfenberg couplers were built in the past 70 years. The proposed draft gear has been used successfully in revenue service since 1978.		26. Same as above. 27. Same as above.
26.		4.2.1	The mechanical coupler operates according to the Scharfenberg principle. This means that, when coupled, the load transmitting elements form a parallelogram thus ensuring a slack-free and safe connection of the cars. By using adequate material combinations any wear in the bearings is minimized. Lubrication is minimized by using self-lubricating bearings.		
27.		4.2.2	The coupler allows for horizontal swing of $\pm$ 45° and for a vertical swing of about 8°. The lateral stop to be provided to positively limit the coupler swing is normally provided by the carbuilder and is installed in the car underframe.		

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28.		4.2.3	If the under emergency conditions the end of a car is lifted at the coupler heavy transverse loads will act both upon the coupler and the drawbar. The coupler is not capable of withstanding those loads. Therefore, the car should be lifted at a more suitable place.		28. RFTP allows blocking prior to jacking.
29.		4.2.4	The energy absorption feature collapses at a certain release load which remains constant throughout the entire travel length.		29. Okay.
30.		4.4.2	Two different types of electrical couplings are used: a) Movable electrical coupling When coupling the electrical heads move automatically forward whilst when uncoupling the automatically move backwards to their retracted position. b) Fixed electrical coupling The electrical head is elastically fixed to the mechanically coupler being on a level with the coupler face. The contracts of the movable electrical coupling are isolated by the movement of the electric head and/or by using an isolating switch. Any contacts which after isolation of the electric head shall maintain the connection of the intercommunication trainlines must therefore be arranged in the mechanical coupler. This would involve considerable exact costs and therefore is not recommendable. The fixed electrical coupling is isolated by using isolating switches and/or by separation of the cars.		30. The RFTP states clearly what is required.

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31.		4.4.7	If isolation of the electrical coupling is accomplished by isolating switches, all necessary switches are normally supplied by the electrical equipment subcontractor. The cutout cocks for the isolation of the pneumatic trainlines have to be supplied by the carbuilder.		31. There are no pneumatic cutouts required. 32. Comment understood.
32.		4.5.1	The coupler can be provided with a MR piper which is automatically opened and closed when coupling and uncoupling the cars. Besides the coupler can be equipped with a brake pipe which is automatically opened and closed during the coupling and uncoupling process and which remains open in case of break of the coupler thus releasing automatic train stop.		33. Comment understood. 34. Available details are defined RFTP Volume I.
33.		4.6.1	The couplers automatically couple mechanically, pneumatically, and electrically unless they are within the gathering range. Uncoupling of the cars is normally accomplished form the driver's cab. Interlocking with the isolate control is normally done by the electrical subcontractor.		35. Objects are of a standard siz no change.
34.		5.4	For the assessment of the operator's cab and in particular of its partition, we require detailed descriptions of the fare collection equipment to be used in order to achieve an optimum arrangement of the fareboxes with respect to their accessability by passengers and operator, and also to optimize the position of the cab partition door.		
35.		6.2.3	Since the test objects listed by you are very small the adjustment of the sensitive edge has to be so highly responsive the false responses are		

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36.		6.3.4	We understand this description to the effect that the doors can be operated only when the car is energized, without the console being energized, by means of the crew switch.		36. Trainline control of doors can only occur with a cab console energized.
37.		6.4.6	Recent experience has shown that a direct application of the emergency brake by passengers in tunnels is rather problematic since evacuation in cases of fire would be difficult due to uncontrolled stopping of the train. An emergency alarm signalled to the operator would seem more convenient for he could move the train to the nearest point appropriate for evacuation.		37. Note: Full service, not emergency brake application is required.
38.		8.5	We would suggest to desist from confining the supply of the components of the lighting equipment to US-manufacturers so that it will be possible to consider for the design of the LRVs also highly qualified components which are supplied by international manufacturers and which are worldwide used.		38. We require U.S. supply.
39.		11.1	For turning the wheelsets of trucks of outside bearing design, it is necessary to remove the covers of the axle box cases, speed probes, odometers, earthing contacts, etc. This would require the new design of part of the components. What is the reason for the requirement of a rotation angle of at least $\pm 90^{\circ}$ for the flexible portion of the clean air supply ducts? Usually the air bags are rated in accordance with the angle of rotation of the truck. To what extent will deviations from service-proven designs according to specifications which are required by the specific design, or new arrangements of service-proven components be recognized as being service-proven.		39. Clarification provided, see Fin RFTP. In case of derailment. Reviewed and judged on a case b case basis.

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40.		11.3.3	An axle parallelism deviation with a horizontal, longitudinal force of 1.5 t applied at diagonally opposite wheels is hardly maintainable for articulated frames provided with Clouth or Megi spring suspension.		40. This requirement is for truck frame tram.
41.		11.3.4	The required truck equalization, lifting any wheel of a truck 51 mm vertically without a loss of contact between any of the other three wheels and the rail will only be possible with an articulated frame which would have to be designed. Furthermore, it should be noted that LRVs are attaining good running qualities in Central and Western Europe also without this special type of truck design.		41. Possibly acceptable. Make a proposal. 42. This defines the need for one c to make five stops, without the use of the second car. 43. Requirements revised, see Final RFTP Volume I.
42.		12.6.12	Is this requirement also applicable to the conditions mentioned under 12.6.7?		
43.		12.7.8	In view of the often relatively small number of installation spaces available, we would recommend to renounce the requirement of mechanical dosing by means of sand traps and to provide a pneumatic dosing device.		44. Requirement has been deleted.
44.		13.2.2	Due to the high mechanical stresses occurring in the vehicle cassette tape players are prone to flutter and wow. Digital announcement memory assemblies are not susceptible to disturbances and are thus more suitable for being used in rail vehicles. The control of digital memory assemblies is confined to setting the run number (route) and to calling the station stops. The digital audio system functions according to the linear prediction code method (LPC). It can also be controlled by the passenger information system through a serial interface (IBIS).		

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45.		15.1.5	It is possible and practicable to reduce the additional expenditure required for documentations by introducing a systematically and logically established set of drawings with detailed representations.		45. No, requirement remains as is.
46.		15.4.3, 15.4.4., and 15.4.6	We think that it would be reasonable to appropriate instructors of the subcontractors companies. For establishing a training program, it would be necessary to define the number of the persons to be trained as well as the corresponding training period. Since operators have larger experience in maintenance and servicing, we would recommend to resort for the training to the assistance of an appropriate transit authority.		46. We don't care who does it, but prime contractor is responsible. The number is not important. Make a proposal. 47. Clarified in Final RFTP. 48. Make a proposal.
47.		17.1.1	Please explain which cleaning agents will be permitted.		49. Probably okay, appearance is the issue, not the process.
48.		17.1.5	Will also other approved coatings be permitted for protecting the plywood?		50. No. No.
49.		17.1.8	We recommend to brush the surfaces in order to obtain for the optical effect a perfect appearance.		51. This is a new system, defect is a defect.
50.		17.2.2	It should be considered whether fastening elements which are not required to be undone for normal maintenance could be made of other materials than stainless steel for reasons of cost reduction. Is it allowed to use metric threads?		
51.		17.7.3	Since the parts described are subjected in rail vehicles to a great variety of particular stresses which can only hardly [illegible] the guarantee conditions would		

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52.		17.9.2	Is is permitted to use piping made of stainless steel?		52. Stainless okay, how do you make joints, no flange or compression fittings are permitted.
53.		17.9.3	To the advantage of economical maintenance, it should be tried, and it would also be possible, to substantially reduce the number of filters.		53. The filters are required.

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ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	2.1	2.1.a	Carbuilder requests that design speed be replaced by safe speed so as to have same wording as in other paragraphs particularly paragraphs 2.2.2 et 10.7.1	Clarity of specification.	1. No, design speed of 65 mph is required.
2	2.1	2.1.f	Carbuilder requests that the height of the platform be clearly stated. See also commentary concerning chap. 6.	Clarification necessary with regard to the design of doors.	2. Provided in Final RFTP.
3	2.4	2.1.2	Energy absorbed by the car body in case of collision will be due to its design carried out in accordance with the requirements of section 3.	Clarification of specification.	3. Calculations verifying design are necessary.
4	2.6	2.1.4.f	Carbuilder requests that composition of metallicdust be clarified.	Clarification of specification.	4. Subway not built yet, content unknown at this time. Suspect mostly rail grindings.
5	2.6	2.1.5.a	Carbuilder requests that the worst possible cases of successive left and right curves be clarified as they were in preliminary specification.	Clarification necessary for design of coupling gear and anticlimber.	5. 6. & 7. Information is provided in Appendix 'A' of Final RFTP.
6	2.6	2.1.5.b	Carbuilder requests that the maximum track warping to be used to obtain superelevation be given.	Clarification necessary for design of rolling stock particularly for the circulation with collapsed pneumatic suspension.	
7	2.7	2.1.5.e	Carbuilder requests that it be clarified whether gradient curves exist or not. If yes clarify the minimum curve in relation to the gradients.	The curves noticibly increase the resistance to forward motion, it is preferable if possible to avoid them in the gradient or to limit them to a wide radius in order not to over design the propulsion equipment.	
8	2.9	2.1.7	Given the design of the equipment the carbuilder believes that the empty car operating weight be closer to 100,000 lbs and will depend on the choices imposed by LACTC in the final specification.	Request modification of specification.	8. Requirements are as stated in Final RFTP.
9	2.11	2.1.11.b	Carbuilder requests that in certain cases this type of protection be otherwise assured (non-electrically, for example a mechanical error-free device).	Reduction of costs.	9. We question whether a mechanical device will be quick enough, make a proposal.

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10	2.14	2.2.3.1.f	Given his experience the carbuilder requests that the length of dead time be increased from 0,2 to 1,0 s.	Request modification so as to use proven technologies.	10. Requirement has been revised, see Final RFTP.
11	2.14	2.2.3.2	See also paragraphs 12.4(b), 12.6.9 and 11 and 12.7.4. In view of these paragraphs as a whole the carbuilder concludes that in normal working conditions the decelerations requested are assured by the addition of dynamic brakes, friction brakes and magnetic track brakes and as well, by friction brakes and magnetic track brakes in the event of a failure of the dynamic brake. The resulting decelerations are therefore weaker in the event of a failure of the magnetic track brakes. The carbuilder believes that the friction brake fully applied in an emergency braking corresponds to the direct feeding of the cylinders by the reservoirs through the peak limitation valve in relation to the weight and only coincides in the event of failure of the dynamic brake, a failure which in this case would cause the cutting off of the supply of the Emergency magnet valve.	Request clarification.	11. Agreed that Francorail would review and advise on vehicles capability to achieve emergency rates without track brakes operational.
12	2.15	2.2.4	Carbuilder requests that the concept of normal system failure be clarified.	This concept is so vague at present that it cannot be taken into consideration.	12. Failure definitions provided in reliability section.
13	2.17	2.2.8	Carbuilder estimates that In electrical braking the response time is 0.2 s. ,when the starting time of the measure is not the emission of the braking order but the instant corresponding to the disappearance of propulsion current in the power circuit.	Request modification to use proven technologies.	13. Requirements revised, see Final RFTP. 14. Not acceptable.
14	2.17	2.2.9.a	Carbuilder requests the possibility of offering as an alternative a hand master controller.	System proven.	15. Requirements revised for clarification.
15	2.23	2.2.12	The figure 2.1 included at the end of the section does not correspond to the subject matter of this paragraph.	Request clarification.	16. Full Load definition added to 2.1.7. (e) (135,000 lb).
16	2.32 & 2.33	2.3.1.2	The load AW4 is not defined in the specification.	Request precision.	

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17	2.42	2.3.1.3 (5)	Clarify that compression test of two times AWO is calculated with AWO = carbody weight without the trucks as is written in paragraph 3.4.b page 3.4.	Clarification of specification.	17. AWO is defined in 2.1.7 (a).
18	2.42	2.3.1.3 (8)	The impositions of this paragraph seem to be in contradiction with those of paragraph 2.3.1.3 (10) and 3.4.g where the authorized stresses are measured with the horizontal loads applied to a maximum loaded car body instead of to an empty one.	Clarification of specification.	18. Known contradictions have been corrected in Final RFTP. Note: 3.4 are design requirements and 2.3.1.3 are tes requirements.
19	2.44	2.3.1.3 (13)	If LACT decides to test a second car, the cost to LACTC should include the cost of the test itself plus incidental expenses (disturbances of fabrication and delays).	Request clarification.	19. LACTC will not perform test, the will witness test.
20	2.51	2.3.1.4 (f)	Carbuilder believes it not necessary to test the working of air conditioning system in each car. The run-in test carried out on the first car checking out the conception and design of the equipment, it is then possible to limit the tests on the other cars to a functional one only.	Systematic testing unjustified and expensive.	20. This is a requirement.
21	2.53	2.3.2.1	Carbuilder considers that the figures given are high in relation to those generally accepted.	Figures can only be worked out after an agreement as to the nature of the failures considered has been received from LACTC.	21. These are car figures and necessary to provide 95% car availability.
22	2.54	2.3.2.4	Carbuilder suggests reducing the observation period from 2 years to six months.	Adequate length of time.	22. No, cars will not see adequate mileage.
23	2.55	2.3.4.1	Carbuilder requests that the mock-ups be in wood.	Cost reduced - time limit respected.	23. Mockups acceptable until production equipment is availab for installation.

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SECTION TITLE : CAR BODY

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1	3.1	3.1	Carbuilder's experience in the area of construction of steel vehicles for subways, cars and train sets for suburban and long distance lines, combined with his experience in the development of articulated LRV(Nantes' in operation and Grenoble's under construction), combined with the usual means of calculation (FEA) and of in-factory testings make it such, generally speaking, that the specifications requested present no particular problem to him.		1. Comment noted.
2	3.4	3.4 (b)	It would appear from the impositions of this paragraph that the stress gauges should be stuck to a carbody structure loaded with AWO instead of to a bare carbody as is usually done.	Request precision.	2. Comment not understood, we do not see any imposition.
.	3.5	3.4 (c)			3. AWO.
					4. AWO.
3	3.5	3.4 (f)	What is the working load of the carbody based on the given calculations.	Request clarification.	
4	3.5	3.4 (g)	What is the working load of the carbody based on the given calculations.	Request clarification.	
5	3.7	3.6	Commentaries applying also to paragraphs 2.1.5 and 11.2. Carbuilder requests that the use of an articulation system without ball bearing rings be authorized as mentioned in the original specification. In fact the use of ball bearing rings is a satisfactory way of ensuring the rotation and the transmission of efforts for a truck under a single carbody but it is not the only possible solution especially for an articulated carbody. The solution advocated by the carbuilder and which he put into use on the french L.R.V consists in linking each carbody section to its own vertical ring by an articulation axe, the two vertical rings lying on the bolster of the truck one rigid, the other activated by a horizontal articulation axe. The curved sections are ensured by the rotation around vertical axes made possible by elastic articulations fixed to the frame and to the roof of the carbody, the humped and hollowed sections are ensured by the rotation around a horizontal axe made of bearings. Concerning the particular case in question, the L.R.V for LA-LB, the imposition to circulate with the collapsed pneumatic suspensions can, in relation to the buckling of the track (for which we need the figures), lead us to slightly modify the intercommunication in such a way that freedom of torsion between the carbodies be necessary to limit	Request modification of specification.	5. Alternatives not employing sliding surfaces will be reviewed for acceptability. Provide adequate details in proposal for such a review. Also, address issue of proven service. Be prepared to offer an alternative.

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5 Cont.	3.7	3.6	This freedom of torsion the necessity of which in relation to the different parameters should be appreciated, is not really dependant on the existance or non-existance of ball bearing rings but is easily feasible in the intercommunication which we are advocating. We plan to ensure this freedom by using a cardan type articulation between the vertical rings and by controlling the torsion of the upper part of the vertical rings in such a way that the movement of the torsion only occurs when a certain threshold is reached, which while allowing collapsed suspensions in the buckled track sections ensures the behaviour in torsion of the L.R.V is that of a rigid carbody under normal working conditions. (Behaviour foreseen in paragraph 3.9.6). Carbuilder emphazises that the conception of articulation with two vertical rings is particularly suited to the carrying out of this torsion control of carbodies and that moreover the other impositions of the specification (resistance security and lifting conditions)present no problem in being respected as such ; simply a few specific descriptions of the specification such as the extremities of the carbody and the ball bearing rings should be adapted. Attached find sketch of the Nantes L.R.V articulation system.		6. Probably okay, make a proposa 7. We believe desirable and necessary.
6	3.8	3.6.3	Carbuilder believes justifiable the request to put the connections under the floor. Does the specification allow for the passing of the cables inside the longitudinal girder of the truck as the carbuilder has already done ?	Request clarification.	
7	3.13	3.12.1	Carbuilder believes that the imposition to isolate the inside of posts and structural members is much too excessive. Carbuilder suggests that this requirement be transformed into a recommendation.	Ease of construction.	

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8	3.19	3.13.2	The specification stipulates a three-piece windshield separated by vertical posts. Such a request would require three windscreen wipers in order to wipe the 3 parts adequately. Carbuilder suggests equipping the L.R.V with one single windshield with just one wiper. The bullet resistance required should be in absolute relation to the specification of the windshield.	- cheaper, - simpler, - more aesthetic, - better field of view towards the front. Request clarification.	8. Requirements have been revised, see Final RFTP.
9	3.21	3.14.1	Carbuilder draws from his experience of seats completely suspended which in the event of no underseat equipment boxes being necessary frees the floor of all obstacles.	Floor washing simplified.	9. Suspending seats require having reinforcement of side walls, resulting in a heavier car.

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SECTION TITLE : OPERATOR'S CAB

SECTION NUMBER : 5

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1	5.1	5.2	Where is the cab door in relation to the center line of the vehicle?	Request clarification.	1. See RFTP Volume I, make a proposal within requirements.
2	5.1	5.2	Where is the fare collection point, what are its dimensions ?	Request clarification.	2. See RFTP Volume I.
3	5.4	5.3.10	To meet different heights of operators the carbuilder suggests adjustable exterior mirrors. Adjusting either manuel or remote control from a point within cab.	Better field of view of the rear. Request clarification.	3. Manual adjustment capabilities are required. See RFTP Volume

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SECTION TITLE : PASSENGER DOORS

SECTION NUMBER : 6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	6.1	6.1	See also paragraph 2.1 f. Given the two types of doors mentioned, outward folding or swing plug, two solutions possible (excluding door folding inwards) in order to avoid interference and reduce gap with platform : - position wayside platform about 90 mm lower than the general floor level, an unsatisfactory solution for access of wheelchair passengers. - use mobile devices, permetting platform to be at general floor level, about 150 mm from edge of car, gap almost completely filled in by mobile device right at door. Carbuilder suggests that a choice between these two possibilities be made and that the specification be consequently adapted. Carbuilder also suggests that other types of doors could be considered: doors with exterior threshold swing-sliding or outward sliding, which in so for as the design of the cars permits, could produce very worthwhile solutions.	Request clarification especially concerning access for wheelchair passengers.	1. Requirement remains unchanged, See RFTP Volume I.
2	6.1	6.1.1	Carbuilder requests that the design of the leaves for the folding doors (because of the particular design of the articulations, windows...) be also done and that the load of 200 lbf be applied over an area 24" high and 12" wide.	Request clarification.	2. Clarification provided in RFTP Volume I.
3	6.3	6.2.2	Carbuilder requests confirmation that the force of 30 lbf is ensured simultaneously on the two door leaves and that its maximum variation authorized on the extremities of the 2" be indicated.	Request clarification.	3. - 30 lbf is per door leaf. - No variation permitted. - Time will remain as stated.
4			The operating times mentioned, 1.5 s and 2 s are very brief and with very high tolerance for a door with an opening of 1,220 m. Carbuilder requests that these times be raised to 3 s ± 0,5 s.	Request modification.	4. Tolerance has been changed t ± .5s.

CARBUILDER/SUPPLIER: FRANCORAIL - ALSTHOM

SECTION TITLE: PASSENGER DOORS

SECTION NUMBER: 6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
5	6.5	6.2.4 b	Should it be understood that in the event of failure of the obstruction detection system, the objects mentioned in paragraph 6.2.3 prevent the leaves from locking or that it's a question of another bigger obstacle (an arm for example) of much bigger dimensions (50 to 60 mm) ?	Request clarification.	5. Clarification provided, see RFI Volume I.
6			Carbuilder suggests as a possible solution which could be varied, that big levers be used to release the object caught even though the door be locked.	Request modification.	6. Big seals are not acceptable. 7. Possibly okay, provide detail in proposal.
7	6.8	6.3.6 (f)	Carbuilder requests that for the electric doors, a proven motor electronic control be accepted, the control of the door remaining a conventional relay one.	Request clarification.	

CARBUILDER/SUPPLIER : FRANCORAIL - ALSTHOM

SECTION TITLE : AIR COMFORT SYSTEM

SECTION NUMBER : 7

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	7.6	7.4	Carbuilder requests that the alimentation of the compressor of the air conditioning system be carried out in power HT instead of AC 60 cycle source and the resulting revision of specification.	- Reduction of power and of motor alternator group weight. - Reduction of car mass.	1. No, we want A.C. due to elimination of commutation and capability of "inertial" power during intermittent power losses.

CARBUILDER/SUPPLIER : FRANCORAIL - ALSTHOM

SECTION TITLE : AUXILIARY ELECTRICAL EQUIPMENT

SECTION NUMBER : 9

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	9.4	9.1.4	Carbuilder requests that every ground brush be designed for half of the total return current.	Request modification so as to avoid the over designing of the ground brush.	1. Requirement remains unchanged.
2	9.5	9.2	Carbuilder requests the possibility of proposing a static converter as an alternative.	Reduction of maintenance costs.	2. No - don't want inverter ballasts on all interior lights. - want to avoid problems associated with static inverter output wave forms.
3	9.6	9.2	If LATC decides to keep the alimentation of the air conditioning in alternative current with a motor alternator supply, the carbuilder requests that the heat resistances be supplied by the alternative current. In which case the paragraph 7.3 will have to be modified.	Coherence of the two solutions envisaged.	3. Possibly okay, provide information in proposal.

CARBUILDER/SUPPLIER : FRANCORAIL - ALSTHOM

SECTION TITLE : PROPULSION SYSTEM CONTROL

SECTION NUMBER : 10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	10.1	10.2	Is the GTO chopper equipment included in the name thyristor chopper ?	Request clarification.	1. No, GTOS not permitted.
2	10.3	10.2.1.3	The carbuilder requests not to impose the number of traction or brake notches but indicate that the number of notches be sufficient to comply with impositions of paragraphs 2.2.1 a and 2.2.3.1 a (variations about the average rate due to propulsion control).	Optimizing the control equipment of traction motors.	2. Not an issue - choppers only permitted.
3	10.3	10.2.2	Suppress series excited for the traction motors, the use of separately excited traction motors being authorized as per paragraph 10.7.1.	Clarity of specification.	3. Both are permitted, see Final RFTP.
4	10.9	10.7.1	Carbuilder requests the suppression of the imposition fully laminated magnetic circuit.	Opening up the specification to other proven motor traction technologies.	4. Requirement revised, see Fina RFTP.
5	10.11	10.7.1	Carbuilder requests that the safe speed criteria be applied to a car equipped with new wheels.	The application of the specification would provoke the all-over enlarging of the traction motor.	5. No, want safe speed criteria with worn wheels.

CARBUILDER/SUPPLIER : FRANCORAIL - ALSTHOM

SECTION TITLE : TRUCK ASSEMBLIES

SECTION NUMBER : 11

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	11.1	11.1	The carbuilder's experience in track building materials for locomotives, subways coaches, suburban and mainline power cars, combined with his experience in articulated LRV development (Nantes' in service Grenoble's under construction) as well as the usual means of calculation (FEA) and structure tests makes it such that generally speaking the requirements of the specification pose no particular problem.		1. Comment noted.
2	11.1	11.1	We request an increase in the maximum truck wheelbase to 2200 mm (86"1/2).	It seems rather difficult to construct a bi-motor truck with motor parallel to the axles and with an 84" wheelbase on normal gauge truck with the motors resulting from the requested performances.	2. Probably okay, our concern is in not exceeding the maximum dynamic outline.
3	11.3	11.2	Carbuilder requests that the specification be open to different types of springs other than the Clouth spring.	It is possible to use adherized rubber conical springs of the most recent technique, very satisfactory in use, the performance of which is as least as good as that of the Clouth spring. These adherized springs are used in the Paris subway ; more than 1000 MF 77 type bogies manufactured by us are equipped with them.	3. Probably okay, make a proposal.
4	11.3	11.2	Carbuilder requests that the trailer bogie, mounted under the articulation, be equipped with a bolster without ball bearing rings as opposed to the power truck.	Dispositions in revenue service See § 3.6.	4. Arrangement must meet interchangeability requirements.
5	11.3	11.2	Carbuilder considers unrealistic the request to run with collapsed air suspensions at maximum speeds which lead practically to lining the air suspension with a second suspension of rubber springs. In the event of the collapse of the air suspension, the carbuilder proposes that the carbody rests on relatively souple elastic stops, in which case it would be possible to run at a speed of about 30 km/h.	Request modification.	5. Condition is possible and vehicle must be capable of operation safely. Requirement remains unchanged.

CARBUILDER/SUPPLIER : FRANCORAIL - ALSTHOM

SECTION TITLE : MATERIALS AND WORKMANSHIP

SECTION NUMBER : 17

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	17.45	17.17.3 b	Carbuilder understands that this paragraph does not concern the high speed circuit breaker (HSCB) mentioned in § 9.1.3.	Request clarification.	1. Correct.

CARBUILDER/SUPPLIER : FRANCORAIL - ALSTHOM

SECTION TITLE : FRICTION BRAKE SYSTEM

SECTION NUMBER : 12

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	12.3	12.4.e	Carbuilder requests that the friction brake discs be mounted on the outside of the wheels.	Reduced maintenance cost.	1. Not permitted.
2.	12.10	12.7.2	Carbuilder considers the request for a separate hose for each brake cylinder unjustifiable. Carbuilder requests that one hose per truck per function be authorized.	Simplification of the links between carbody and truck, reduction of costs.	2. Requirement deleted.
3.	12.16	12.7.8	Sand boxes are described as if they could be installed under the first transverse passenger seat to the rear of the front doors. Depending on the design which will finally be accepted could other dispositions be accepted, could the filling operation from the inside be suppressed.	- simpler seats - no risk of dirtying the inside of the car when filling.	3. Inside filling necessary, actu location of boxes somewhat flexible. Make a proposal.
4.	12.17	12.7.8 c	Carbuilder suggests that pneumatic air traps be used.	- reduction of consumption of sand. - more efficient sanding.	4. Agree, allowable by RFTP.

SECTION TITLE: Garrett

SECTION NUMBER:

GENERAL COMMENT

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
			The specification makes no allowance for life cycle cost. Energy consumption, reliability, maintenance, etc. should all be taken into account in the bid evaluation so as to obtain the lowest overall life cycle cost rather than just lowest first cost. L.C.C. is of particular inportance in the selection of: a) Chopper or switched resistor propulsion, and b) M/A set or static inverter auxiliaries.	To obtain the "true" lowest cost bid rather than just lowest first cost.	Under present LACTC procurement regulations and evaluation criteria, life cycle costs are not to be considered. It has been our experience and others that available life cycle cost data is inadequate to determine "True" cost.

SECTION TITLE: Selected Interfaces

SECTION NUMBER: 2.1.11

PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
2-11	2.1.11.b	Upper limit of low voltage range to be 42V rather than the specified 45 volts. NOTE: Also specified in section 2.2.E.	To allow the use of existing service proven equipment. 24V to 42V is the normally accepted range for 37.5V nominal equipment.	Requirements have been revised, see Final RFTP.

SECTION TITLE: Balancing and Continuous Speed Requirements

SECTION NUMBER: 2.2.2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
2	2-13	2.2.2	The propulsion system should remove tractive effort under overspeed conditions but the brake application would normally be commanded by the ATP equipment.	ATP is failsafe.	Conventional ATP/ASC equipment is not to be supplied for these cars.

SECTION TITLE: Qualification Tests

SECTION NUMBER: 2.3.1.2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
	2-29	2.3.1.2	Can qualification testing be waived if a service proven system is proposed.	To minimize testing costs.	If the supplier can substantiate that the complete and exact hardware and system have been used previously, and that test data can substantiate satisfactory results, then LACTC will consider waiving the requirements.

SECTION TITLE: Operation Cab

SECTION NUMBER: 5

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
	5-1		No mention is made of the Propulsion Electronic Control Equipment which is normally located in the cab.	Location of the PECE in the cab allows easy access for maintenance and guarantees a suitable environment for the electronics.	Okay, but we doubt if there will be adequate space without enlarging cab.

SECTION TITLE: _____

SECTION NUMBER: 9.3.3

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
	9-8	9.3.3	A ripple of 3% without the battery connected is very low for subsystem that must operate over a range of 24V to 45 volts. A 10% ripple should be acceptable.	A smaller and lighter low voltage power supply would result.	Requirement has been revised, see Final RFTP.

SECTION TITLE: _____

SECTION NUMBER: 10.2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
	10-1	10.2	Fixed frequency chopper operation is specified. Dual frequency operation (such as 120/360 HZ) has been successfully demonstrated to be compatable with wayside equipment.	To allow the use of service proven equipment.	Okay in principle, all control techniques will be required to be compatible with wayside and other carborne equipment.

SECTION TITLE: _____

SECTION NUMBER: 10.2.1.2

PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
10-2	10.2.1.2	A single chopper is required to have a truck cut-out capability. Garrett's MARTA Propulsion System has demonstrated such a high system reliability that it is felt that the addition of power truck cut-out switches would actually reduce car availability due to the failure rate of the additional hardware.	To maximize car availability truck cut-out should not be required if an existing system can show a high enough reliability rate.	Not acceptable - this additional flexibility is required.

SECTION TITLE: _____

SECTION NUMBER: 10.2.2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
	10-3	10.2.2	Series excited D.C. traction motors are specified. Separately excited motors have demonstrated a reliability much higher than average and the regeneration capability is increased by the use of separate excitation. Either series or separate excitation should be allowed. NOTE: 10.7.1. states separate excitation will be considered.	To allow the use of high reliability systems which can also regenerate more efficiently than series system.	Separately excited traction motors <u>are</u> allowed by the RFTP.

SECTION TITLE: _____

SECTION NUMBER: 10.2.2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
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SECTION TITLE: _____

SECTION NUMBER: 10.6.4

PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
10-5	10.6.4	The electric braking effort is defined as 3.5 MPHPS at 55 MPH at full load (ratioed for the motored axles). This braking power is about 3 times that of the drive power. To obtain a brake power rating closer to the drive power rating it is normal to taper the brake rate and to allow some friction blending at maximum car weight.	To allow the use of an optimum propulsion system sizing.	Requirements have been revised.

SECTION TITLE: _____

SECTION NUMBER: 10.6.14

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
	10-8	10.6.14	The vital no-motion logic is defined as being in the propulsion equipment. It may be safer to include it in the A.T.P. equipment. The location of the no-motion logic should not be defined.	To allow the car builders to optimize the overall system.	No motion logic will not be available from the required ATS equipment. Alternatives to propulsion as a source will be reviewed.

SECTION TITLE: _____

SECTION NUMBER: 10.7.6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
	10-13	10.7.6	The knife switch is defined as 4 position. The MARTA knife switch is 3 position but functionally provides the 4 required modes. Shop power is supplied via a plug and socket with the switch in the mid position. It is suggested the 4 required modes be defined rather than the knife switch construction.	Would allow the use of service proven equipment.	May be okay, need details.

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SUPPLIER: General Electric Co., Transit Equipment Marketing, Erie, PA

SECTION TITLE: System Requirements

SECTION NUMBER: 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	2-1	2.1.1	The car systems required to be fail safe should be identified in this section. Generally only the ATS equipment and the brake system are designed to be fail safe. The paragraph should be clarified to read "ATS equipment and brake system shall meet requirements of section 2.1.1.1 --". Circuits shall be designed and utilized to operate in a fail safe manner to the greatest extent possible and consistent with simplicity and reliability requirements specified; that is circuit design shall be in the direction that neither the ridership, the crew or the equipment is placed in jeopardy.	Generally fail safe design practices are opposed to simplicity and reliability.	1. Circuits to be fail safe shal include; propulsion, brakes, doors, and ATS, no motion detection.
2	2-5	2.1.3	The LRV's shall be designed using service proven components to the maximum extent possible, however, the service life design goal shall be 30 years or more.	The LRV design utilizes hundreds of components with various amount of service life. There is no accurate way to design the LRV for a service life of 30 years.	2. We disagree, in fact, it has been done, (ie. PCCs).

CARBUILDER/SUPPLIER: General Electric Co.

SECTION TITLE: System Requirements

SECTION NUMBER: 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
3	2-8	2.1.6e	Fully worn wheel diameter of 25 inches (or 25-1/2") instead of 26" should be required.	Equipment should be able to operate with more than 1 inch radial wheel wear. An increased allowable wheel wear will also reduce wheel change.	3. Disagree.
4	2-9	2.1.9	Impact loads of not less than 20 g on any major axis should read not less than 8 g vertically and 6 g horizonally.	20 g requirement is unduly conservative.	4. Disagree; note, this is a or time impact.
5	2-12	2.2.1d	Minimum position of master controls shall be no greater than 0.2 MPHPS. A minimum acceleration rate of 0.5 MPHPS is recommended.	The 0.5 MPHPS is more realistic for an LRV.	5. Requirements revised, see Final RFTP.
6	2-21	2.2.10.5.1 (b)	Equipment Noise: Since pure tones can be expected from propulsion system gearing, the not to exceed reference should be increased from 85 to 88 dba	Include allowance for expected pure tone penalty (Ref. 2.2.10.2). No impact on car noise (with equipment installed).	6. Disagree, this is what the is based on.

CARBUILDER/SUPPLIER: General Electric Co.

SECTION TITLE: System Requirements

SECTION NUMBER: 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
7	2-26	2.2.13.6	Preventive Maintenance: What are the consequences to the car builder if person hours are exceeded by actual experience of the authority over the 5 year period.	Define as Design Goal.	7. We won't accept the cars.
	"	"	(Assume the person hours listed are for the entire vehicle).		8. No, corrections must be made to meet reliability requirements.
8	2-53/54	2.3.2.4	Reliability Demo. A progress payment will be tied to completion of a successful demo - on a subsystem basis? Is the loss of payment the only penalty?	Clarify in CP document.	9. We won't accept cars, and corrections must be made. - Component change out figures have been updated, see Final RFTP.
9	2-54	2.3.3.2	Component Change Out: What are the consequences to supplier if person hours are exceeded? Is it only a progress payment ie vehicles will be accepted for delivery.	Define as Design Goal clarify in CP document.	
	"	"	Does the term "change-out" mean "removal and replacement" of a part?		
	"	"	Removal and replacement of a traction motor should be 16 person hours. (instead of 4) as different crafts will be involved i.e. electrical, machinist/mechanic crane operator.		
			For safety reasons, suggest vehicle be		

CARBUILDER/SUPPLIER: General Electric Co.

SECTION TITLE: System Requirements

SECTION NUMBER: 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
10	2-56	2.3.4.2	Under Floor Arrangement. "Actual equipment" on a mock-up should be clarified to "equipment enclosure or equal with all interfaces identified". A mock-up precedes the manufacture of actual equipment.	The requirement for "actual equipment" will result in unnecessary expense and delay the program.	10. Simulations are okay if production pieces are not available. However, once the are available, they must be fitted.

CARBUILDER/SUPPLIER: General Electric Co.

SECTION TITLE: Car Body

SECTION NUMBER: 3

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	3-26	3.16.10	Keys: LRV Maintenance person access to equipment boxes. Normally control groups and equipment boxes mounted under the car do not require keys and locks. Covers are generally secured with spring loaded latches. The specification should describe exact locations requiring key access i.e. equipment mounted in cab on car body should be accessed with the crew key.	Spring loaded latches on under car equipment have proven satisfactory in Transit and LRV application. To reduce the number of keys to access the equipment, delete the requirement for under car equipment.	1. The locks intended for maintainer access (ie. equipment boxes) shall b secured with latch type

CARBUILDER/SUPPLIER: General Electric Co.

SECTION TITLE: Aux. Electrical Equipment

SECTION NUMBER: 9

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	9-8	9.3.6	Low Voltage Trainline: "Maximum voltage drop permitted under this condition shall be 4 volts". The 4 volts should be changed to 2 volts.	A 4 volt drop between any two cars will prevent any significant power transfer between cars on 37 volt battery circuits.	1. This is under extreme conditions with significant current flow. Requirement is adequate.

CARBUILDER/SUPPLIER: General Electric Co., Transit Marketing, Erie, PA

SECTION TITLE: Propulsion System & Control

SECTION NUMBER: 10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	10-3	10.2.1.3	CAM Type Switched Resistor: The paragraph on CAM type switched resistor should be replaced with the following functional description: "Control of resistance shall be accomplished by means of a pilot motor driven CAM operated contactors assisted by solid state devices as appropriate. Field strength control shall be provided by contactors or CAM units as required to produce the specified performance. Requirements for the minimum number of resistance steps will be determined by the sensitivity and accuracy requirements indicated in Section 2, but shall not be less than 25 in either braking or motoring modes. Continuous control of dynamic braking shall be provided over the braking capability of the traction motors."	Functional description of CAM type switched resistor control.	1. Chopper control only permitted.

CARBUILDER/SUPPLIER: General Electric Co.

SECTION TITLE: Propulsion System & Control

SECTION NUMBER: 10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
2	10-3	10.2.2	Drive Configuration	The GE design eliminates maintainable - replaceable elastomeric parts at the axle mounting.	2. Provide detail informatio proposal.
3	10-11	10.7.2	Gear Drive Both articles refer to an elastomeric type gear to axle connection. GE's proven transit drive configurations utilize a rigid mount of the gear unit to the axle combined with a three point resilient motor/gear unit package suspension to the truck. The specification should allow "or other service proven mounting arrangements" for <u>parallel</u> drive.		3. Same as 2.

CARBUILDER/SUPPLIER: General Electric Co.

SECTION TITLE: Propulsion System & Control

SECTION NUMBER: 10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
4	10-7	10.6.11	Circuit Protection: As an alternative, the function of the circuit protection should be described as follows: "An overload circuit breaker,the function of which may be combined with a line switch, shall be provided. The PMC chute shall open to the atmosphere in a manner that provides positive protection and insulation to the car body and near-by equipment. The breaker shall have sufficient capacity for overload and short circuit interruption without damage. The breaker reset function shall be remote and available for reset of the overload when not in power."	Service proven line breakers are available which combine the overload and line switch functions.	4. Requirements are as stated i Final RFTP. 5. Frame need not be laminated, see Final RFTP.
5	10-9	10.7.1	"DC traction motor - with fully laminated magnetic circuit". Solid rolled plate fabricated frames have been used in transit applications for many years. They are rugged and reliable. Laminated frames are an acceptable substitute but offer little if any advantages over solid frame construction. This paragraph should be written to allow for either laminated or solid frame motors.	The small advantages achieved with laminated frame motors is more than offset by the economies inherent in use of service proven production solid frame motors.	

CARBUILDER/SUPPLIER: General Electric Co.

SECTION TITLE: Propulsion System & Control

SECTION NUMBER: 10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
6	10-9	10.7.1	Metal covers in quantity of 5% of total number motors shall be provided. This requirement is not necessary and should be deleted.	High quantity traction motors can withstand normal external cleaning without additional protective covers.	6. Five percent spare covers what is required.
7	10-11	10.7.1	Traction Motor Anti-friction Bearings: Clarify the meaning of permanently grease lubricated bearings. Recommended practice is to provide for periodic regreasing of the bearings.	Clarification.	7. Provide details in propos 8. Provide details in propos
8	10-12	10.7.3	Resistors: "All resistor frames, screens and hard-ware shall be - stainless steel". Industry practice has been to provide the resistor elements to be a corrosion resistance type material, not the resistor box frame.	To apply com'l available st'd resistor frames and to provide the corrosion protection where needed, the resistor element.	9. No, want connectors, and terminations within enclo
9	10-15	10.8	Packaging: "all-control cable termination - internal to enclosures". Allow alternate for the use of multi-pin quick disconnects at the enclosure.	Allow industry st'd practice, also for maintenance and installation.	

CARBUILDER/SUPPLIER: General Electric Co.

SECTION TITLE: In Service Support

SECTION NUMBER: 15

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	15-1	15.1.1	Manuals "Reproducible master copy" Is this a photoready copy? "Manuals - kept current with all changes and modifications" Recommend this be on an annual basis until expiration of warranty period of the last car.	Clarification "Current" would result in near continuous revisions during start-up and the first year of operation.	1. Yes. - Requirements clarified, se Final RFTP.
2	15-2	15.1.6	Format and Content "level sought - ATA100" Although there may be transit authorities with manuals in the ATA100 format, the cost of these manuals have proved significant. A modified level of compliance has been achieved and should be considered. An example would be the recent GCRTA transit car manual by Taconic.	Significant Cost Impact for value received.	2. RFTP stated level of detai shall be as stipulated by ATA100 format.

CARBUILDER/SUPPLIER: General Electric Co.

SECTION TITLE: In Service Support

SECTION NUMBER: 15

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
3	15-7	15.2.2.2	Monitoring a minimum of 150 analog and digital test points: The number of test points depends on how complicated is the system. A CAM control system can be diagnosed to lowest replaceable unit with relative few number of test points, therefore, the requirement should be amended accordingly.	As written would add additional complications to the equipment which may not be necessary.	3. Chopper control is now required.
4	15-12	15.4.4	Classroom Instruction: Since the spec indicates not less than 240 hrs of individual training as basis for proposal and bid, what does LACTC believe the propulsion, control and auxiliary power portion should be? Need an estimate of total maintenance personnel to be trained. To maximize training of personnel, it is recommended that no less than 12 students be in attendence for each session.		4. Requirement clarified, see Final RFTP.

CARBUILDER/SUPPLIER : _____

SECTION TITLE : Materials & Workmanship

SECTION NUMBER : 17

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	17-1	17.1.2	Standards: All materials shall conform to "appropriate --- standards". This is a general statement which is difficult to administer and should be deleted. Clarify to "when so specified herein".	Specification should identify specific references to avoid confusion.	1. We believe this requiremen adequate.
2	17-4	17.2.2	Fastenings: "Screws shall project a minimum of 1-1/2 threads to a maximum of 6 threads". This statement should be amended to allow screws to project a minimum of 1 thread as determined by good design practice and use of standard length fasteners.	Statement could lead to the use of non standard fasteners.	2. Good design practice is 1. threads.

CARBUILDER/SUPPLIER: General Electric Co.

SECTION TITLE: Materials & Workmanship

SECTION NUMBER: 17

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
3	17-4	17.2.3	Fastenings: "All fasteners that are not stainless steel or aluminum shall be plated with Cadmium or zinc". GE COMMENT: Car hardware is not necessarily applicable to Equipment Systems; the following notes hardware applicable to General Electric's propulsion and control equipment devices. PPOPULSION EQUIPMENT: On Grade 5 hardware, up to and including .50 inch in diameter, zinc plate with clear chromate treatment is used. However, on all Grade 8, all Grade 5 over .50 inch in diameter, and some hardened washers and specials, no zinc plate is used. In these cases a phosphate treatment which does not promote hydrogen embrittlement is used. CONTROL EQUIPMENT DEVICES: GE uses Grade 2 hardware for sizes smaller than .25 inch. Grade 5 is used for sizes .25 inches and larger. GE does not use slotted hardware on sizes greater than #10 on both Control and Propulsion Equipment. GE RECOMMENDATION: Amend for Propulsion and Control equipment to allow the use of GE standards as follows:	To conform with Industry vendor practice.	3. Aluminum has been deleted, other requirements have be revised, see Final RFTP.

CARBUILDER/SUPPLIER: General Electric Co.

SECTION TITLE: Materials & Workmanship

SECTION NUMBER: 17

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
	17-4	17.2.3 cont'd	FASTENERS: GE RECOMMENDATION: For Propulsion Equipment Hardware: On Grade 5 greater than .50 inch, Grade 8, and special cases, allow special phosphate treatment in place of zinc or cadmium where applicable. Control Equipment Device hardware smaller than .25 inch may be Grade 2. Propulsion and Control Equipment Device screws .25 and greater not required to be slotted.		4. Extra design margin is required. No change.
4	17-15	17.10.1	National Electric code table 310-16 90 degree column: Industry practice is to use irradiated cross linked polyolefin insulated wire. This insulation is now commercially available rated for 125 degree C operation (formerly 110 degree C). Max. wire capacities should be considered based on the latest insulation rating available, ie 125 degree C instead of 90 degree C.	Cable insulation at 125 degree C is variable and should be applied accordingly commerically.	

CARBUILDER/SUPPLIER: General Electric Co.

SECTION TITLE: Materials & Workmanship

SECTION NUMBER: 17

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
5	17-23	17.11.7	Terminal(Boards) "All terminal boards shall be in accordance with MIL-T-55164A". Please amend to read: "All terminal boards shall be service proven in accordance with MIL-T-55164A or equivalent".	To permit use of service proven equipment.	5. Provide details in proposal
6	17-33	17.13.7	Epoxy powder coating of Equipment Enclosures in place of painting is now commerically available from General Electric. Epoxy powder coating has been applied to PATH (38), NYCTA (380), CTA (95) control group enclosures and is standard for all transit production. Amend paragraph to include "alternatively, epoxy powder coating may be applied to equipment enclosures".	Epoxy powder coating offers significant advantages: - Durability - Resists scratches and corrosion - Dielectric protection - Arc resistant - No paint to repair	6. Provide detail information proposal.

CARBUILDER/SUPPLIER: General Electric Co.

SECTION TITLE: Materials & Workmanship

SECTION NUMBER: 17

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
7	17-36	17.15.2	Electrical Design Criteria: "Transformers and Inductors, shall be derated 10% for current". Change to read "The rating for transformers and inductors shall be determined by their duty cycle with appropriate derating factors for the intended service."	Transformers and inductors are sized on the basis of duty cycle, and not necessarily current.	7. Requirement remains as stat
8	17-36	17.15.2	Electrical Design Criteria: "Hermetically sealed dry tantalum capacitors in metal cases shall be used in place of aluminum capacitors". Change to read "Approved types of high Grade, high quality capacitors shall be used ...".	The latest aluminum electrolytic capacitors have lower leakage, higher quality, under temperature range and characteristics comparable to tantalum capacitors. The part of tantalum capacitors is on the order of 6 to 8 times that of high grade electrolytic capacitors.	8. Are they service proven?

CARBUILDER/SUPPLIER: General Electric Co.

SECTION TITLE: Materials & Workmanship

SECTION NUMBER: 17

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
9	17-37	17.15.3	Semiconductor Standards: A minimum operating standard of -55 degrees C is not available for all electronic components.	The minimum operating temperature should be set at -40 degrees C as this is a practical lower limit for this application as well as a standard temperature limit for electronic components.	9. Provide details in proposa

CARBUILDER/SUPPLIER: GENERAL RAILWAY SIGNAL CO.

SECTION TITLE: SYSTEM REQUIREMENTS

SECTION NUMBER: 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
2.1.7	2-9	1	Defines AW0 to AW3 weight cars. AW3 is defined as "heavy load car weight", whereas Item 2.2(b) on Page 2-11 references "full load car weights." Are the terms "heavy load" and "full load" synonomous? If so, please change one or the other.	Clarity	Clarification provided in Final RFTP. See Section 2.1.7. Requirement remains unchanged.
2.1.9	2-9	1	Current company-wide specifications for vibration and shock do not meet spec between 0 and 9 Hz for body mounted equipment nor between 0 and 19 Hz for truck mounted equipment. Our spec is: A. Body Mounted: 0-4 Hz - 2" constant displacement 5-9 Hz - 0.25G to 0.4G 10-100 Hz - 4.0G B. Truck Mounted: 0-4 Hz - .25" constant displacement 5-19 Hz - 0.3G to 0.4G 20-100 Hz - 6.0G Please change spec to allow. If spec is not changed, GRS will be unable to bid.	Allow greater sub-system competition and/or lower cost.	

CARBUILDER/SUPPLIER: GENERAL RAILWAY SIGNAL CO.

SECTION TITLE: SYSTEMS REQUIREMENTS

SECTION NUMBER: 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
2.3.1.1	2-28	1	Spec references "± 0.5% of the nominal output voltage." Should this be ± 5%?	Clarity	Test requirements have been revised, see Final RFTP

CARBUILDER/SUPPLIER : GENERAL RAILWAY SIGNAL CO.

SECTION TITLE : SYSTEM REQUIREMENTS

SECTION NUMBER : 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
2.3.2.1	2-53	1	With regard to the auxiliary electrical and controls MTBF of 1400 Hrs., we recommend that there be a definition of exactly what is included in this category. We further recommend that automatic train stop be listed as a separate item with its own MTBF. Train control is too important to be lumped together with other equipment. It also allows the train stop manufacturer to know exactly what reliability must be met.	Better definition and/or accountability. Lower cost with just as much accountability.	How the individual category requirements are met are the contractor's responsibility.
2.3.2.4	2-53	1	We feel that a two-year reliability demonstration is too long -- most are one year or 18 months at the most. Even in the one-year test, it has been our experience that most suppliers and authorities lose interest between six and nine months. We know of no project which used an 18-month test where results were different from one year.		

CARBUILDER/SUPPLIER : GENERAL RAILWAY SIGNAL CO.

SECTION TITLE : AUTOMATIC TRAIN STOP

SECTION NUMBER : 14

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
14.3.2	14.3	6	The last sentence in this sub-paragraph is not clear. We believe it should read: "This shall not occur when the vehicle and/or ATS system is de-energized" or "This shall occur when the vehicle and/or ATS system is energized."	Clarity	Clarification provided in Final RFTP.

CARBUILDER/SUPPLIER: GENERAL RAILWAY SIGNAL CO.

SECTION TITLE: IN-SERVICE SUPPORT

SECTION NUMBER: 15

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
15.2.1	15-5	2	Paragraph specifies that car builder, i.e., "contractor" supply an HP3060A or Beaver Major Model EMS-57900. The way this is written each and every sub-system supplier would have to have this specific equipment in house and develop specific test specs for their particular sub-system. We believe this is unreasonable to expect. If it is retained in the spec, it will add considerable cost just for this project.	Significantly lower cost and increased sub-system competition.	Requirement deleted.
15.2.2.7	15-8	1	We notice that the ATS system portable test equipment is missing from the list unless it is intended that it be under sub-paragraph (J). We recommend that it be listed separately.	Clarity	Requirement revised in Final R

CARBUILDER/SUPPLIER : GENERAL RAILWAY SIGNAL CO.

SECTION TITLE : MANAGEMENT

SECTION NUMBER : 16

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
16.6	16.2	1	Section CP6.10 of the contract was not supplied for review and comment.	Clarity	Final Documents sent as one package.

CARBUILDER/SUPPLIER: GENERAL RAILWAY SIGNAL CO.

SECTION TITLE: MATERIALS & WORKMANSHIP

SECTION NUMBER: 17

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
17.11.1	17-20	7	The use of tape rails may not and probably is not consistent with design parameters of all sub-systems manufacturers. Conformance will cause re-design of existing and proven sub-systems with attendant additional cost just for this project.	Greater sub-system competition with possible lower average cost within sub-system supplier group.	Requirements revised, see Final RFTP.
17.15.3(g)	17-38	1	We do not understand why LACTC requires silicon semiconductors meet military temperature range of -55°C to +100°C when industrial range components (-40°C to +85°C) will suffice. This adds significant costs without additional benefit.	Lower costs.	Reliability purposes.
17.15.4(d)	17-39	1	1. Spec no. at top of page is incorrect. 2. It is unreasonable to assume that replacement value is a sub-system manufacturers' criteria for using sockets. In our case, safety and reliability are the determining factors, and these items are not necessarily related to replacement value but are more important than replacement value. We suspect that this is the case for other sub-system manufacturers as well. This spec will cause re-design of existing and proven sub-systems with attendant additional cost just for this project.	More reasonable spec with more workable and reasonable results to LACTC. Also greater competition amongst sub-system suppliers at lower average cost and better reliability.	1. Corrected. 2. Requirement revised, see Fi RFTP.

CARBUILDER/SUPPLIER : GENERAL RAILWAY SIGNAL CO.

SECTION TITLE : MATERIALS & WORKMANSHIP

SECTION NUMBER : 17

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
17.15.4(J)	17-40	2	ATS is a signal system and signal industry standards do not specify nickel over gold on fingers. This may be the case with other sub-systems and this spec will cause re-design of existing and proven sub-systems with attendant additional cost just for this project.	Greater competition amongst sub-systems suppliers with lower average cost.	Possibly okay, provide details proposal.

CARBUILDER/SUPPLIER: HARRIS MILLER MILLER & HANSON INC.

SECTION TITLE: AUDIBLE NOISE AND VIBRATION, INTERIOR NOISE

SECTION NUMBER: 2.2.10.3

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	2-20	1	The present interior noise limits are 72 dBA with all equipment operating under all normal conditions and 68 dBA with any one system operating. We suggest that the interior noise limits be lowered by 2 dBA and expanded to include the maximum noise level while operating on tie and ballast track and maximum noise levels for other specific noise sources. Following are the suggested limits:	These limits will help ensure a comfortable acoustical environment for the system patrons. The limit on the air conditioning system is 68 dBA in a test with a simulated enclosure (Section 2.2.10.5.1.d) and 68 dBA after installation (Section 2.2.10.5.2.d). It would be more consistent with the limits recommended at the left to reduce the a/c noise limit to 66 dBA. With the air conditioning system creating sound levels of 68 dBA, it will be difficult to meet an overall limit of 70 dBA.	A. Agree--added value for moving car interior maxi allowable noise level. B. Agree. C. Don't believe achievable with ventilation operati D. Agree. E. Agree, but question whet one can obtain an adequa low ambient noise level make accurate measuremer (i.e. Ambient at least dBA less than source be measured.) F. Same as E.

A.	In open on tie and ballast track at 40 mph on welded track	72 dBA	
B.	All auxiliaries systems operating, car stationary	70 dBA	
C.	One auxiliary system operating, car stationary	66 dBA	
D.	Door operation, fast meter response, 1 ft or farther from door	72 dBA	
E.	Public address system, 1 ft from any loudspeaker with P-A system energized and operating in standby condition, and with the car electrical system energized	40 dBA	
F.	Lighting system, noise generated by florescent lamps, fixtures, and ballasts installed in car and energized at rated voltage and frequency, 1 ft from each lighting fixture	48 dBA	

CARBUILDER/SUPPLIER: HARRIS MILLER MILLER & HANSON INC.

SECTION TITLE: AUDIBLE NOISE AND VIBRATION, WAYSIDE NOISE LIMITS

SECTION NUMBER: 2.2.10.4

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	2-20	1	The wayside noise limit of 75 dBA at a distance of 50 ft for a 40 mph vehicle passby will be difficult to achieve within the present state-of-the-art for LRT vehicles. For example, noise measurements of the Calgary, Edmonton, Portland Tri-Met, SF Muni, and San Diego Trolley indicate that none of these light rail vehicles would meet the specification. The average noise level that has been measured for these vehicles is 77 dBA at 40 mph and a distance of 50 ft. The EIR assumed a sound level equivalent to 76 dBA for the maximum passby sound level at 40 mph, 50 ft from the track centerline. We recommend that the wayside noise limit be change to a maximum of 77 dBA at 50 ft with the vehicle traveling at 40 mph.	The 2 dB increase in the allowable wayside noise level will result in a state-of-the-art vehicle that does not require extensive additional noise control measures beyond what has been used at other LRT systems. The suggested limit is 1 dB above the level used for the environmental impact analysis. This is an minimal difference, which is within the tolerance of the measurement equipment specified for evaluating compliance with the noise specifications.	1. Agree, revised in Final RFTP.
2	2-20	1	There is no limit on the noise from the friction brake system. We suggest that the following wording be incorporated into the specification: "Maximum sound level under any level of friction brake application at low speeds (0 - 15 mph) shall not exceed 75 dBA at a distance of 15 ft from the track centerline."	As seen with the Washington Metro, brake squeal can be a major noise problem. Adding the suggested wording will help minimize the possibility of brake squeal problems.	2. Agree Final RFTP revised.

CARBUILDER/SUPPLIER: HARRIS MILLER MILLER & HANSON INC.

SECTION TITLE: AUDIBLE NOISE AND VIBRATION, EQUIPMENT NOISE PRIOR TO INSTALLATION ON CAR

SECTION NUMBER: 2.2.10.5.1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	2-21	d)	The first sentence now reads: "The air conditioning equipment when installed on a simulated car enclosure shall not produce noise levels that exceed 68 dBA anywhere inside the enclosure." We suggest that the following be added: "The acoustical performance of the enclosure must be approved by LACTC before the test is performed."	Constructing a simulated enclosure that will accurately represent the vehicle will require a number of engineering approximations. It would be best if LACTC retained some control over the manner in which this test is performed.	1. Agree, Final RFTP revised.

CARBUILDER/SUPPLIER: HARRIS MILLER MILLER & HANSON INC.

SECTION TITLE: AUDIBLE NOISE AND VIBRATION, VIBRATION

SECTION NUMBER: 2.2.10.7

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	2-22	1	The limit on vibration caused by equipment and auxiliaries mounted on the vehicle is 0.04 g peak acceleration at frequencies up to 60 Hz. Vibrations of this magnitude will be annoying to patrons. We recommend a specification with the following limits: These limits are the same as recommended in the APTA Guidelines and have been used in a number of other transit vehicle specifications.	The recommended limits will help ensure a comfortable environment for the system patrons.	1. Agree, Final RFTP revised.

CARBUILDER/SUPPLIER: HARRIS MILLER MILLER & HANSON INC.

SECTION TITLE: CAR BODY, MATERIALS, INSULATION

SECTION NUMBER: 3.2.12

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	3-18	1	A test of the sound transmission loss could be specified here. Following is suggested wording that can be added to the existing text: In no case shall the average sound transmission loss of each characteristic section of the car body be less than specified in the following table: MINIMUM SOUND TRANS. LOSS BY OCT. BANDS Freq (Hz) / Entire Floor / Walls[1] / Ceil./ Roof / Doors[2] 250 Hz 27 dB 23 dB 23 dB 14 dB 500 Hz 35 31 31 22 1000 38 34 34 25 2000 38 34 34 25 [1]The "walls" category includes the windows but excludes the doors. [2]The "doors" category includes the articulated section. The sound transmission loss shall be averaged over each characteristic section of the car body and must include the influence of all sound energy which transmits through weak areas such as apertures, door seals, air ducts, and openings for supply and return ducts. The Contractor shall use procedures outlined in ASTM E336-77, "Test Method for Measurement of Airborne Sound Insulation in Buildings." Evaluation of the sound transmission loss of each characteristic section of the car body shall be performed using one or both of the following procedures... (HMMH will provide a description of the tests if required).	The sound transmission test will ensure that the noise levels inside the vehicle will achieve the limits specified in Section 2.10 and that interior noise levels when operating in subway will be acceptable. This is important since no other section of the specification covers the car interior noise while the vehicle is in subway.	1. A sound transmission test can beneficial, but our past and m recent experience (i.e. WMATA/Rohr) is that it is extremely expensive. Possibly HMMH could provide an estimate for its cost and LACTC could evaluate its necessity.

CARBUILDER/SUPPLIER: HARRIS MILLER MILLER & HANSON INC.

SECTION TITLE: TRUCK ASSEMBLIES, SUSPENSION SYSTEM

SECTION NUMBER: 11.2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	II-3	2	The description of the primary suspension system consisting of chevron or Clouth elastomeric springs should avoid the type of stiff suspensions that have contributed to groundborne vibration problems in cities such as New York, Atlanta, and Washington D.C. It is suggested that the last part of paragraph 2 of Section 11.2 be changed to read: "Primary suspension shall be by means of chevron or Clouth elastomeric springs. The vertical resonance frequency of the primary suspension system shall not exceed 12 Hz for the powered trucks."	An LRT vehicle with a stiff primary suspension system will have the potential of creating significantly more groundborne vibration impact than assumed in the EIR.	1. Agree, Final RFTP revised.

~~CANADIAN~~ SUPPLIER: Hoppecke

SECTION TITLE: Auxiliary Electrical Equipment

SECTION NUMBER: Section 9

#	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	9-9	9.4	We recommend that sentance 1 should read: "An alkaline nickel cadmium storage battery with graphite free type of electrodes or pocket plates and transparent or translucent cell cases _____."	Fiber nickel cadmium (FNC) batteries have a number of distinct advantages over pocket plate NI-CAD types: A. Extensive cycle life capability resulting in a cycle life estended 3 to 4 times over pocket plates in transit service. B. High charge efficiency allowing extended watering intervals (up to 30 months), total recharge at lower voltages, faster recharge to higher capacities and energy savings over the system life. C. Approximately 20 percent space savings providing lower cost for battery space and more room for other underfloor equipment. D. Considerably lower system weight (approximately 25 percent) permitting further energy savings and ease of handling in installation and service. E. No carbonate effect because FNC does not require graphite extenders to increase its conductivity. This prevents gradual capacity lose over time, no possibility of permanent damage from carbonate and no electrolyte changeout over life of the battery.	1. The FNC Technology seems to offer promise for the Railway/Transit industry, but the required in-service experience must be provided prior to its use on this project.
2	9-9	9.4	Add to end of Paragraph 9.4: "The battery shall not require an electrolyte change throughout its service lifetime."		
3	9-9	9.4.2	Revise Paragraph number 3, sentence number 1, to read: "_____ require adding water during normal (90 day) maintenance."		

CARBUILDER/SUPPLIER : KAWASAKI HEAVY INDUSTRIES, LTD. - ALNA KOKI CO., LTD. (KHI-ALNA)

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SECTION TITLE : _____

SECTION NUMBER : _____

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	2 - 2	2.1.1.1	c) Double wire shall be adopted only for specialized points. We request LACTC to decide such points.	For light weight construction.	1. Double wire shall be used where required by 2.1.1(c).
2	2 - 5	2.1.3	Please give us definition of "Design Life."	We do not understand if design life itself is limited as mentioned in this article.	2. The duration over which the car is intended to operate without rebuilding the structure but allowing for normal replacement of bearings, etc. (30 years)
3	2 - 17	2.2.8	We request LACTC to give us definition of "Mode Change Dead Time."		3. Section 2.2.8 is clear.
4	2 - 20	2.2.10.3	68dBA is too severe. We request to allow 71dBA.		4. Requirements clarified.
5	2 - 36	2.3.1.2	K) Acceleration life test of 1.5 million cycles is too severe. We request LACTC to change it to be one million.		5. 1.5 million is an accepted standard and our requirement.

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CARBUILDER/SUPPLIER : KHI – ALNA

SECTION TITLE :

SECTION NUMBER :

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
6	2-48	2.3.1.3	h) Vehicle running test. We do not have the test facility under condition of this article. We hope to do test at L.A. site.		6. The L.A. Line may not be available, alternative arrangements must be made by the prime contractor. The Pueblo test site is available.
7	2-52	2.3.1.4	i) Performance Test – Same to above (h).		7. Same as above.
8	3-2	3.3	(at 4th paragraph) Please explain why each body section shall be built without camber.	We do not understand why.	8. Requirements has been revised, see Final RFTP Volume I.
9	3-6	3.5	Design calculation We request LACTC to separate the stress analysis from manufacturing schedule.	Through our past experiences, stress analysis is never ended by only one time. For keeping production schedule it should be independent from actual structure of carbody and truck	9. Absolutely not, this is to be a proven-car-shell design, it should not be difficult to obtain stress analysis approval prior to production.

NOV.15 '85 19:08 KHI TOKYO HEAD COM B

CARBUILDER/SUPPLIER: KHI - ALNA

SECTION TITLE:

SECTION NUMBER:

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
10	3 - 11	3.7.6	What construction of collision post does LACTC consider ?		10. Appropriate sections is quite clear. See RFTP, Volume I.
11	3 - 20	3.13.3	Please explain definition of "Bullet Resistant Design."		11. Clarification provided in the Final RFTP, Volume I.
12	6 - 1	6.1	Door. Does LACTC approve alternative plan such as our SEPTA LRV type door ?		12. No, inward bifolding doors are not permitted.
13	9 - 17	9.5.5.1	We propose for the master controller of our Hiroshima type.(one hand / both hands dual handle type)	Reason. This is our service proven type and we propose it in stead of foot pedal type.	13. No, a foot controller is required.
14	10 - 1	10.2	(At the 3rd paragraph) Controlled dynamic braking for 5MPH or lower speed is impossible as far as dynamic brake. At least more than 10MPH would be necessary. Please confirm.	If it is in case of regenerative brake, it would be possible.	14. We believe this statement to be incorrect.

TEMU CORP. 60 Trinity Ave. Hartford, CT.

CARBUILDER/SUPPLIER : KHI - ALNA

SECTION TITLE :

SECTION NUMBER :

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
15	11-8	11.6	We request LACTC to add the words of "or approved equal, etc." for recognition of alternative plan.	LACTC can select among various good brands for this item.	15. Not that we are aware of. Please provide examples.
16	12-2	12.2	(at last paragraph) What degree of failure monitoring system does LACTC consider?		16. See Section 2.2.3.1(e) - No BCP at actuator when requested - No BCP at brake control value and when requested - BCP when not requested
17	12-16	12.7.8	Its better that sand hose shall not be truck mounted type.	Reason. To avoid slackening of sand pipe (rubber hose)	17. No, not what is wanted. How do you get sand on rail head while in a curve?
18	15-1	15.1.1	We request LACTC to have only one time review for all manuals without linking with payment terms.	Reason. Generally almost customers are apt to repeat many times review of manuals and every time they have many connections.	18. No, manuals are considered very important, and this will assure getting a timely review on submittals.

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CARBUILDER/SUPPLIER: KHI - ALNA

SECTION TITLE:

SECTION NUMBER:

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
19	14 - 1	14.1	All car-carried ATS equipment shall be decided and supplied by LACTC incorporated with wayside and other ATS equipments.	Its better for LACTC to have same level equipments between car-carried and wayside, etc.	19. No. Requirement remains.
20	16 - 2	16.4	Please change the time of providing of "Record Drawings" to be within 90 days after all changes/revisions are completed.		20. Record drawings are required during ownership of first accepted cars since LACTC/SCRTD will be responsible for their upkeep.

— OVER —

NOV.15 '85 19:11 KHI TOKYO HEAD COM B

CARBUILDER/SUPPLIER : THE KINKI SHARYO CO., LTD. / C.ITOH & CO.(AMERICA) INC.

SECTION TITLE: Friction Brake System

SECTION NUMBER: 2.3.1.2 f)

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	2-31	3rd	"AW1, AW2, AW3 and full load" are described. What is "full load" ?	"Full load" is not defined in 2.1.7 Weights nor 2.1.8 Passenger Capacity.	1. All references to AW4 have been replaced with Full Load Full Load is defined as 135,000 lb.

CARBUILDER/SUPPLIER : THE KINKI SHARYO CO., LTD. / C.ITOH & CO.(AMERICA) INC.

SECTION TITLE: Truck Qualification Tests

SECTION NUMBER: 2.3.1.2 h)

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
2	2-33	7th	"AW4" is described. What is AW4 ?	"AW4" is not defined in 2.1.7 Weights nor 2.1.8 Passenger Capacity.	2. See response to #1.

CARBUILDER/SUPPLIER : THE KINKI SHARYO CO., LTD. / C.ITOH & CO. AMERICA) INC.

SECTION TITLE : Vehicle Running Tests

SECTION NUMBER : 2.3.1.3. h)

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
3	2-48	1st	It is specified that the tests shall be performed at the Contractor's facilityor other test track as approved by LACTC. LACTC's track should be used for this tests.	Carbuilder does not have such test track as the car can run at 55 mph. Although "or phrase" is added in the RFTP, we would request to use LACTC's track for this purpose.	3. LACTC may not have line completed in time for acceptance testing carbuilder to make other arrangements, possibly Pueblo Test Center.

CARBUILDER/SUPPLIER : THE KINKI SHARYO CO., LTD. / C.ITOH & CO.(AMERICA) INC.

SECTION TITLE: Motor Alternator

SECTION NUMBER: 9.2

M #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
3	9-5	1st	In addition to motor alternator, Brushless thyrister motor (BLNA) and Static inverter should be added.	These equipment has widely been used due to better maintenability.	3. No, we want a M.A. - wave form, experience in past - uninterrupted lighting without a need for inverter ballast.

CARBUILDER/SUPPLIER : THE KINKI SHARYO CO., LTD. / C.ITOH & CO.(AMERICA) INC.

SECTION TITLE: Weights

SECTION NUMBER: 2.1.7

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
4	2-9	2nd	AWO 90,000 lbs. seems to be too small for this size of car, especially in case of being provided with dual chopper system.		4. Weight limit is necessary due to civil restrictions on Century Freeway Line.

CARBUILDER/SUPPLIER : THE KINKI SHARYO CO., LTD. / C.ITOH & CO.(AMERICA) INC.

SECTION TITLE : Roof Mat

SECTION NUMBER : 3.9.1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
5	3-13	2nd	Why is 3/16-inch thickness required ?	Thicker is heavier. Thinner material is available, consistent with the performance required.	5. Mat requirements have been revised. Required thickness remains as 3/16.

CARBUILDER/SUPPLIER : THE KINKI SHARYO CO., LTD. / C.ITOH & CO.(AMERICA) INC.

SECTION TITLE : Seats

SECTION NUMBER : 3.14

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
6	3-21	3rd	The seat width will be 37 1/2 inches for 2 passengers, based on the minimum seat width 18 3/4 inches. In addition to this seat width 37 1/2 inches and aisle width 24" specified, we need clearance 1/2 inch between seat and side wall, so the thickness of side wall will be 2 1/2 inches. 2-seater seat would be recommended to be 36 inches wide.	Proper thickness should be assigned to side wall construction in order to get enough carboy strength.	6. Requirement remains.

CARBUILDER/SUPPLIER : THE KINKI SHARYO CO., LTD. / C.ITOH & CO.(AMERICA) INC.

SECTION TITLE : Propulsion System Configuration

SECTION NUMBER : 10.2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
7	10-2		Three types of system are listed. The system to be required should be one.	Any type of propulsion system can be supplied according to the necessity and preference of the Customer. Propulsion system is very fundamental for this type of car, as this relates to weight, performance, reliability, maintenability, price etc. The system to be required should be one.	7. Requirement has been revised to require chopper control.

CARBUILDER/SUPPLIER : THE KINKI SHARYO CO., LTD. / C.ITOH & CO.(AMERICA) INC.

SECTION TITLE: General (Truck Assemblies)

SECTION NUMBER: 11.1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
8	11-1	2nd	The trucks and components are required service proven design. The word "truck" is defined in the first paragraph of this section, which interprets "truck frame and bolster including any mechanical interface requiring welding or drilling on the truck. Then, service proven design is not required as one complete truck assembly, but we can collect the service proven design of each element of truck frame and bolster and component. Are we right ?	Unless we can gather service proven design of each element of truck frame and bolster and component, there can not be service proven design as "one complete truck assembly". Even if it were available, the opportunity should equally be given to each carbuilder who has enough capability.	8. Truck and bolster must have been used together in services. Components mounted on truck must have their own service-proven history but not necessarily with the proposed truck.

CARBUILDER/SUPPLIER : THE KINKI SHARYO CO., LTD. / C.ITOH & CO.(AMERICA) INC.

SECTION TITLE: General (Truck Assemblies)

SECTION NUMBER: 11-1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
9	11-2	11th	Truck rotation upto 90 degrees seems to be impossible in actual truck design.	Maximum rotation should be the degrees on the min. curve plus some margin. 90 degrees rotation will make the design of carbody and truck connection very difficult.	9. Stops may be applied to inhibit rotation.

CARBUILDER/SUPPLIER : THE KINKI SHARYO [illegible] LTD. / C.ITOH & CO.(AMERICA) INC.

SECTION TITLE : Suspension System

SECTION NUMBER : 11.2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
10	11-3	1st	Carbody support on truck bolster should no be limited to ball bearing rings, but should be ball bearing rings or others approved by the Commission.	Carbody support on truck bolster ball bearing or others will depend on the traction system. If limited to ball bearing, the traction system will provide no choice.	10. Requirements have been revised, see Final RFTP, Volume I.

CARBUILDER/SUPPLIER : THE KINKI SHARYO CO., LTD. / C.ITOH & CO.(AMERICA) INC.

SECTION TITLE: Caliper and Pads

SECTION NUMBER: 12.7.2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
11	12-10	3rd	A separate hose for each brake cylinder will make air piping complicated, therefore brake hose should be per truck basis, a hose for each truck.	Reduction of hose numbers and detrucking will become easier.	11. Requirement has been deleted.

CARBUILDER/SUPPLIER : THE KINKI SHARYO CO., LTD. / C.ITOH & CO.(AMERICA) INC.

SECTION TITLE : General (Wire and Cable)

SECTION NUMBER : 17.10.1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
12	17-15	3rd	It is specified that maximum wire ampacities shall conform to the National Electric Code Table 310-16, 90°C column.. However, we would recommend 110°C instead of 90°C.	There will be no problem with 110°C. Overspecification only makes the car heavier.	12. No, want additional margin of safety.

CARBUILDER/SUPPLIER: Knorr Brake Corporation

SECTION TITLE: System Requirements

SECTION NUMBER: 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	2-3	2.1.1.2	The proposed alternative method of checked redundancy is a valid method of achieving a safe system. Subsection 2.1.1.2.b, however, requires a checked redundant friction brake system with parallel per truck control. This requirement is necessary only if a pressure applied friction brake system is selected, whereas if a spring applied system is chosen this requirement may not be necessary. Recommend changing subsection 2.1.1.2.b to state that if pressure applied friction brakes are provided, they shall be a checked redundant system as described in this subsection.	The propulsion system is not mandated to be per truck control, thus the cost versus benefit of a per truck controlled friction brake system is questionable. Spring applied brakes can provide the same level of safety at a lower equipment complexity level without per truck control thus reducing initial costs and life cycle costs.	1. Spring applied brakes are not wanted due to the problems, difficulties, and possibly unsafe conditions arising from having to cutout the friction brakes on a truck basis.
2	2-6	2.1.4.d	The current fording requirement at 25 mph is too high and potentially dangerous. Should the 400 ft fording requirement be necessary, recommend the speed be restricted to 5 mph, or limited to 1 inch at 25 mph.	Splash of under car and truck equipment will be impossible to protect against, under water obstacles will not be visible, and brakes will fade causing a safety hazard.	2. Requirement has been revised.

CARBUILDER/SUPPLIER : Knorr Brake Corporation

SECTION TITLE : System Requirements

SECTION NUMBER : 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
3	2-11	2.2.b	The braking requirements are specified for AWO through "full load car". Subsection 2.1.7 defines AW2 and AW3 weights as service and heavy loads, therefore the requirement should state either AW2 or AW3 as the term "full load" is not defined by the spec.	Insufficient definition allows for vague performance requirement interpretation.	3. Clarification is provided in Final RFTP.
4		2.2.c	The requirement for an operative car to push or pull an inoperative car should be modified to allow for reduced performance under these conditions.	The current interpretation requires full performance under these conditions which will require oversized braking equipment (if physically possible and installable).	4. Reduced performance is permitted.

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CARBUILDER/SUPPLIER: Knorr Brake Corporation

SECTION TITLE: System Requirements

SECTION NUMBER: 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
5	2-13	2.2.3.1	The current service braking requirements are contradictory and physically impossible to achieve. The following specific comments are made: A) Performance is required to meet CPUC GO143, "as interpreted by the CPUC for this contract." As the CPUC interpretation is not stated in the specification and may change from time to time during the contract, the authority and suppliers have no specified performance upon which to base their quotation or guarantee. If this interpretation is required than it must be provided in the specification.	A) Allowing undefined future interpretation in the spec places all parties at risk of supplying a non-compliant vehicle or not being able to achieve the CPUC interpretations.	A) Clarifications if provided in Final RFTP. A CPUC's interpretation change is a possibility, which in turn may necessitate contractual negotiations.
			B) The CPUC 3.0 $\pm$ 0.5 mphps braking rates and the section 2.2.3.1.a, added requirement of 3.5 $\pm$ 5% are contradictory. The 2.2.3.1.a tolerance of $\pm$ 5% ($\pm$ .175 mphps) and the 0.1 mphps additional tolerance should be deleted. These tolerances are impossible to achieve with friction brakes and are too stringent for single car LRV operation.	B) Other California transit properties have attempted dual standards and have always been returned to the CPUC tolerance band.	B) Requirements have been revised.
			C) The subsection 2.2.3.1.b definition of v/t rate is impossible to achieve under the laws of physics. The elapsed time should be specified as the time <u>after</u> brake system dead and buildup time to standstill. Including the dead and buildup time of even the fastest hydraulic brake system requires instantaneous deceleration rates at low speed to approach infinity. See attached reference paper presented at APTA 1983 Rail Conference.	C) The current specification is not achievable by any brake system. Attempts to achieve the specification will cause excessively high instantaneous brake rate which will be dangerous to passengers and cause wheel slides.	C) Requirements have been modified and clarified.
			D) The subsection 2.2.3.1.f dead time of 0.2 seconds is not achievable, except with hydraulic systems. The recommended time is 0.5 seconds.	D) Electronic, trainline and signal processing times will consume most of the specified dead time. Increasing the time to 0.5 seconds does not	D) Requirements have been revised.

CARBUILDER/SUPPLIER: Knorr Brake Corporation

SECTION TITLE: System Requirements

SECTION NUMBER: 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
6	2-14	2.2.3.2	The current specified emergency brake rates are not achievable. CPUC does not specify v/t (as incorrectly defined by subsection 2.2.3.1.b) as the measure of performance. Recommend the (v/t) be deleted from subparagraphs a through d or be correctly defined as instantaneous brake rate (after dead and buildup time) which will result in a 6.0 mphps minimum instantaneous brake rate at <u>all</u> speeds. See attached referenced paper presented at APTA 1983 Rail Conference.	Requiring stepped brake rates and excessively high brake rates will create safety problems on the vehicles. As currently specified, an instantaneous brake rate of over 10 mphps is required at 10 mph and rates approaching infinity are required below 10 mph.	6. Requirements have been revised for clarity.
7	2-16	2.2.5	The current blending requirement will cause extremely high disc temperatures and disc/pad wear on the center truck due to the requirement for continuous center truck braking under at a percentage of total brake command. As a minimum 2 discs per <u>axle</u> on the center truck may be required. Recommend center truck braking be used only when overall brake demand exceeds the dynamic brake capability and if adhesion utilization on power trucks is to be limited, after approximately 16 percent adhesion demand has been applied to the power trucks by dynamic brakes.	See comment to Section 12.6.11 thermal capacity.	7. Requirements have been revised.
8	2-17	2.2.8	The specified mode change dead time of 200 ms is not achievable. At least 0.5 seconds is required, especially due to any propulsion system reconfiguration mode change times, and jerk limitation requirements.	To provide a more realistic required dead time of the propulsion/brake system.	8. Requirements have been revised.
9		2.2.9.d	The currently specified linear rate command signal does not allow a tolerance on the coast point thus the vehicle, especially when trainlined, will be continuously oscillating between brake and propulsion at the coast point.	To allow a tolerance on the coast mode to prevent mode change oscillations.	9. Not a concern with two-wire system, three states possible (power, brake, and coast).

CARBUILDER/SUPPLIER : Knorr [illegible] Corporation

SECTION TITLE : System Requirements

SECTION NUMBER : 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
10	2-31	2.3.1.2	The currently specified friction brake system qualification tests are excessive and costly to the authority. The dynamometer testing will require over 200 runs plus the various profile runs. The endurance test of .5 million cycles will require at least 30 days and the requirement to simulate brake reaction forces will extend this time and require costly test equiment. As a <u>full</u> system is to be tested, the simulation requires simulating 6 - 8 brake actuator/disc torque conditions. These tests are possible to perform but will add significant cost to the project. Recommend waiving these tests for service proven equipment.	Potential cost saving to LACTC.	10. The requirement for test of the full system has been deleted, se Final RFTP.

SECTION TITLE: Couplers and Draft Gear

SECTION NUMBER: 4

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
11	4-5	4.5.1	The current requirement for a pneumatic brake pipe may not be necessary. Recommend changing the section to require provisions for a brake pipe only if required by the proposed brake system. The section 12.4.b allows the use of electrical emergency propogation.	Reduction in initial vehicle cost and complexity and eventual life cycle costs. The change allows for a brake pipe only if a brake system proposed requires the pipe for safety reasons.	11. Has been deleted, see RFTP Volume I.

CARBUILDER/SUPPLIER : [illegible]

SECTION TITLE : Auxiliary Electrical Equipment

SECTION NUMBER : 9

#	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
12	9-13	9.5.3.4.	The specification does not include provisions for dynamic brake cut-out or dynamic brake fault or failure annunciation. As thermal loading on the friction brakes is a safety critical item, affected by presence or lack of dynamic brakes, these functions should be sealed by pass switches and more importantly annunciated to the driver (and possible automatically impose a vehicle speed restriction) to prevent thermal damage or severe fade of the friction brakes.	Safety related improvement to the vehicle subsystem cut-out and annunciation system.	12. - Automatic speed restriction enforced if failure occurs.
13	9-15	9.5.4.2	The requirement for the track brake switch to be a momentary switch is questionable. Use of track brakes should be deliberate by the driver and the MS switch allows for excessive cycling of the track brakes.	Track brakes are only effective after they have been fully applied. The MS allows for momentary cycling without achieving any benefit on the vehicle and may cause excessive wear of track brake components.	13. Requirement remains unchanged.

CARBUILDER, SUPPLIER: Knorr Brake Corporation

SECTION TITLE: Propulsion System and Control

SECTION NUMBER: 10

M #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
14	10-3	10.3.1	The normal duty cycle is defined and referenced in 10.3.1.a, Appendix 1, Track Profiles, which is not currently published. The track profiles, when published, must include all distance and elevation data including location of all traffic light stops and major artery crossing speed limits.	Required to determine the thermal duty cycle of the propulsion and brakes (section 12.6.11).	14. Provide in Final RFTP, Appendix A.
15	15-5	10.6.4	The currently specified minimum dynamic brake capability is extremely low creating severe friction brake capacity requirements. Normal industry standards require dynamic brakes to provide total vehicle braking at weights up to AW2. The specified power truck proportion of AWO weight capability means only 70-80% of AWO (70,000 - 80,000 llbs) of the vehicle can be dynamically braked and the remaining 46,000 - 56,000 lbs must be continuously braked by the friction brakes. This will cause high disc temperatures and severe pad wear on both the center and power trucks. Recommend the capability of dynamic brakes be raised to a minimum of total AW2 weight.	The low dynamic brake specified may require more hardware on the vehicle (additional discs) and will create high disc and pad wear with severe operational costs to LACTC.	15. Propulsion equipment (i.e. traction motors) have limitations also. Requirement may not be unreasonable for all suppliers.
16	10-6	10.6.9	The current specification requires slide control to be an integral part of the propulsion system. This may not be the most effective control method of friction brake slides. Recommend this be deleted as a required part of the propulsion system to allow for experienced friction brake suppliers to provide this function if appropriate.	To allow for the optimum combination of propulsion/friction brake control based on the individual suppliers capabilities.	16. This may be acceptable but should be detailed in proposal.

CARBUILDER/SUPPLIER : Knorr Brake Corporation

SECTION TITLE : Truck Assemblies

SECTION NUMBER : 11

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
17	11-9	11.7	The specification for axle seat finishes ignores the need for axle seats for the brake discs. Recommend the section be expanded to require axle seat dimensions, tolerances and finishes for the brake discs to be specified by the brake supplier.	To include provisions for disc brakes required for the axles.	17. We believe this to be an interface requirement that the prime and subcontractor must resolve themselves.

CARBUILDER/SUPPLIER: [illegible]

SECTION TITLE: Friction Brake System

SECTION NUMBER: 12

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
18	12-1	12.2	The current specification allows only a pneumatic pressure applied disc brake system, and the section describes in detail all components of this system. As the performance requirements are also specified and systems other than a pressure applied system can meet or exceed the performance requirements, the requirement for a pressure applied system and component specifications is questionable. The majority of single car operation LRV's supplied throughout the world in the past 5 years have spring applied brake systems and a major portion of North American LRV's provided in the last 10 years also have spring applied brake systems. Additionally the pressure applied brake system, although allowable under the specification safety criteria (Section 2.1.1.2), may not be able to meet the CPUC GO143 safety requirement as the pressure applied system is allowed to lose up to 35-40% of the friction brakes under a single point failure. Knorr has, and can provide a pressure applied system as detailed currently, however, we strongly recommend the authority allow or even require a spring applied, pressure release friction brake system. Most additional comments under section 12 relate to pressure versus spring applied systems. Additionally by specifying performance and capability required from the friction brakes and then specifying the exact hardware configuration in detail, the authority is creating a dual specification with possible constraints or conflicts on the carbuilder and friction brake system. Unless the authority has operated the weight and types of vehicles specified with the hardware specified for friction brakes on their profiles, the requirement of dual specification is not recommended. A detailed hardware specification is usually only applicable when interchangeability of components with an existing fleet is required, when the hardware has been proven to meet the performance requirements or when no performance requirements are specified.	The current specification is too restrictive and precludes use of alternative proven systems. The pressure applied system may not be appropriate for the LACTC and CPUC performance and safety requirements. Recommend LACTC allow for alternative proven systems including spring applied friction brakes. The additional hardware detailed specification may prove to be the most costly friction brake system and may not meet the system performance requirements.	18. Discussed previously.

CARBUILDER/SUPPLIER : Knorr Brake Corporation

SECTION TITLE : Friction Brake System

SECTION NUMBER : 12

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
19	12-1	12.2	The required per truck control of friction brakes is the most hardware intensive (and costly) system and may not be required especially if dynamic brakes are not required on a per truck basis. Other proven LRV's utilize other than per truck control in a safe and cost effective manner.	Recommend that the requirement for per truck control of friction brakes be modified to be required only if necessary to meet the vehicle performance requirements. This may allow a less costly system to be proposed.	19. Previously discussed.
20	12-2	12.2.C	The requirement for friction brakes to provide full emergency braking in the event of dynamic brake failure, contradicts section 2.2.3.2 which utilizes dynamic plus friction plus track brakes to provide emergency braking. The exceptionally high specified emergency brake rates and heavy AW2-AW3 car weights coupled with vehicle space contraints (on the power trucks) may not allow the friction brakes alone to provide total emergency braking capability. Recommend this section be modified to allow for less than the specified full emergency braking capability from the friction brakes in the event of dynamic brake failure.	The capability may not be installable in the vehicle. Other California transit properties and the CPUC do not require this capability from the friction brakes alone.	20. Requirements have been rewritten for clarity. CPUC GO 143 is in effect on this procurement. It has not for previous buys.
21		12.4d	Parking brake operation required clarification.		21. Clarification has been added, this is an interpretation of CPUC GO 143.

CARBUILDER/SUPPLIER: Knorr Brake Corporation

SECTION TITLE: Friction Brake System

SECTION NUMBER: 12

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
24	12-4	12.4.f	The requirement for a <u>two cylinder</u> compressor is questionable. A <u>two stage</u> compressor (2-4 cylinder) is more appropriate. Only one brake manufacturer produces two cylinder compressors, and both on a long term service evaluation and cost basis other compressors have been proven to be more efficient and less costly (initially and on life cycle costs).	To allow for alternative service proven equipment.	24. Should read 2-stage, 2-cylinder air compressor.
25	12-4	12.6.1	The specified ± 10% tolerance on friction brake performance is more restrictive than the CPUC 3.5 ± 5 mphps rate requirement of approximately ± 15%. The ± 15% range is more appropriate for a friction brake tolerance range considering performance deviations due to equipment and environmental factors and the large disc temperature differentials required. Recommend the tolerance be established at ± 15%.	The currently specified tolerance may not be achievable due to the broad range of vehicle operating conditions. Tighter tolerances may be achievable using special friction materials such as sintered brake pads, however, these will adversely affect disc life and are costly brake pads.	25. Requirements have been revised, see Final RFTP.

CARBUILDER/SUPPLIER: Knott Brake Corporation

SECTION TITLE: Friction Brake System

SECTION NUMBER: 12

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
26	12-8	12.6.11	The currently specified thermal capability of the friction brakes is severe, especially in view of the heavy vehicle weights and extremely low specified dynamic brake capability. Insufficient profile data is provided in the specification (or Appendix A) to calculate the effect on the Long Beach-Los Angeles line, however, the results of the Century Freeway profile indicate extremely high disc temperatures. The specified 600°F maximum disc temperature allows for maintaining relatively consistent brake rates <u>with</u> dynamic brakes operative. On the Century Freeway profile only approximately 6 tonnes (13,000 lbs) of vehicle mass can be braked by any disc of the friction brakes without exceeding 600°F at the brake discs (with 68°F ambient temperatures). With an AW3 car and an assumed 37.5/25/37.5 load distribution, the center truck will be required to brake approximately 33,750 lbs which means with 1 disc per axle the disc temperature will be approximately 750°F for continuous running and each power truck will be required to brake approximately 16,875 lbs resulting in (with 1 disc per axle) disc temperatures below 400°F.The power truck temperatures would be acceptable but the center truck temperature would not allow continuous running with the dynamic brakes operative. Only at vehicle weights below AW1 could the center truck run continuously with 1 disc per axle. The center truck will require 2 discs per axle unless the dynamic brake capability is increased to limit center truck thermal loading to less than 6500 lbs per axle. The single stop capability (12.6.11.b) will result in disc temperatures as high as 750-800°F which also is within allowable dis/pad performance constraints for a single stop. Under dynamic brakes failure (section 12.6.11.c), each power truck axle must brake approximately 25,000 lbs resulting in disc temperatures (with 1 disc per power axle) with no speed restrictions of approximately 1100°F; with a 40 mph speed limit of approximately 825°F; and acceptable disc temperatures for continuous running only at an approximate 32 mph speed restriction. The center truck must brake 16,875 lbs per axle with resulting disc temperatures with 1 disc per axle of 750°F with no speed restrictions and acceptable temperatures of below 600°F at 40 mph and 450°F at 32 mph speed restriction.	Recommend the Century Freeway profile be restricted to a maximum of 35 mph with dynamic brake failure to prevent disc and pad failure and maintain reasonable friction brake performance. Recommend 2 discs per axle be specified on the center truck unless the Dynamic Brake minimum full speed capability is increased to a level which limits center truck braked mass to a maximum of 6500 lbs per axle. Even under these conditions the disc and pad wear may be high due to the high braked mass loads. Recommend <u>after</u> the Long Beach to Los Angeles detailed profile is provided that a separate speed restriction for this line be established and an evaluation of continuous dynamic brake conditions be made.	26. 2 discs per center truck axle are required, see Final RFTP.

CARBUILDER/SUPPLIER: Knorr Brake Corporation

SECTION TITLE: Friction Brake System

SECTION NUMBER: 12

EM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
27	12-9	12.7.2	Recommend the required brake pad life be deleted. The 12.6.11 thermal duty cycle requirements indicate for the Century Freeway line, high continuous disc/pad temperatures with dynamic brake operative 100% of the time and with the 90% requirements, extremely high temperatures. On this basis, similar braked mass vehicles have obtained as low as 3,000 miles of pad life. The Long Beach - Los Angeles profile is unspecified and cannot be commented upon at this time.	The specified levels are not achievable with the high vehicle weights, low dynamic brake capability, high dynamic brake failure rate allowed, and resulting high disc/pad temperatures.	27. Pad life requirements remain; however other requirements, including center truck to be simplified with 2 actuators per axle, have been included to improve pad life.
28	12-10	12.7.2	The requirement for a restriction in the brake cylinder line causes an increase in system response times which may adversely affect performance.	Recommend deletion of the requirement for a restriction in the brake cylinder line to improve response times.	28. This requirement has been deleted.
29	12-10	12.7.3	The requirement for hardware redundant ECU's is the most costly control arrangement and may not be necessary with other than pressure applied brakes controlled on a per truck checked redundant basis	Reduced complexity and cost.	29. This requirement remains.
30	12-11	12.7.4	The requirement for three analog brake control units may not be the most cost effective system configuration. Additionally the requirement for a laminated pipe bracket is not recommended. Laminated "pipe brackets" or manifolds are more prone to internal leakage and should not be required. Alternative methods including cored and drilled panels, have been proven to be more reliable under similar conditions.	Reduced complexity and cost, and elimination of potentially unreliable required laminated brake manifolds.	30. Cast pipe brackets are acceptable.

CARBUILDER/SUPPLIER: Knorr Brake Corporation

SECTION TITLE: Friction Brake System

SECTION NUMBER: 12

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
31	12-13	12.7.6.a	Recommend deletion of the requirement for a WABCO D-4S two cylinder compressor. There is no evidence this specified compressor provides better performance than other manufacturer's compressors. Additionally the specified unit is a force feed lubricated unit which may not be as reliable as splash lubricated compressors. Service and life cycle cost evaluations on other properties have shown other compressors to be at least as reliable as, and more cost effective than the D4S.	Allow for other proven reciprocating compressors and more cost effective units to be supplied.	31. The RFTP permits alternatives.
32	12-14	12.7.b.d	Delete the requirement for finned tubing and recommend the 10 degree F requirement be changed to 15 degrees F. Finned tubing is more prone to blockage and rapid loss of cooling efficiency or physical damage. Fan blown aftercoolers are more efficient. Additionally the 10 degree requirement is based on systems without modern efficient air dyring systems Outlet temperatures up to 50 degrees F above ambient can still provide clean dry air to the vehicle if modern efficient air dryer systems are utilized.	Improved performance of units without potential cooling area blockage and equal performance without excessive aftercooler cost requirements.	32. Requirement remains.
33	12-19	12.7.11	Recommend deletion of the requirement for per truck friction brake service brake cut out accessible from either side of the car. This adds significant mechanical linkage and cost to a simple cut out device at no significant benefit to the property.	Reduce vehicle complexity and cost.	33. Requirement revised.

CARBUILDER/SUPPLIER: Knorr Brake Corporation

SECTION TITLE: In-Service Support

SECTION NUMBER: 15

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
34	15-8	15.2.2.4	Recommend deletion of the requirement for brake cylinder test fittings at inside car electrical locker locations near each truck. The need for these fittings is questionable and introduces additional BC line piping which affects system response times and creates potential areas of leakage.	Reduced complexity, improved response times and elimination of maintenance (and potential safety) related additional equipment.	34. Integrate with air gauge test fittings.
35	15-10	15.4.2	Recommend the contract provisions (CP3) also include the extra carset(s) of training equipment as a bid line item. Listing these only in the technical specification as "in additon to the list of spares in CP3" may not allow them to be included in the bid price.	Clarification of scope of supply.	35. Requirement remains as stated i Final RFTP.

CARBUILDER/SUPPLIER : Knorr Brake Corporation

SECTION TITLE : Material and Workmanship

SECTION NUMBER : 17

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
36	17-36	17.15.2	The requirement for all circuit boards to be interchangeable should be modified to include only those which perform like functions. For example, center or power truck control circuit boards may have different settings due to the weight difference per truck and thus should not be interchangeable.	Clarification and prevention of incorrect interchange of PC cars.	36. Clarified.
37	17-41	17.5.5	The current specified microcomputer standards may not be compatible with currently supplied proven microcomputer designs thus either not allowing these systems to be proposed or requiring redesign and related loss of proven reliability experience. Recommend manufacturers standards of service proven equipment also be allowed.	To allow for proven service reliable microcomputer designs in the event the specified requirements are too restrictive.	37. Provide details of proposal alternative for LACTC review and approval.

SECTION TITLE: Appendix A, Long Beach- LA Line Plan and Profile

SECTION NUMBER: A.1.2

M #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
38	N/A	N/A	The current plan profile data on the Long Beach - Los Angeles Line does not include sufficient data for evaluation or bid of friction brake (or propulsion) performance. The data required is station location (chainage), vertical elevation data at grade changes (chainage at PVI), location of any intermediate stops (major crossings, etc.), and civil or crossing speed restrictions. Preliminary data provides at least an indication of severity of the profile.	The thermal capacity of the friction brakes must be determined to ensure capability to meet the specified performance with the specified hardware configuration. This can not be done without detailed operational profile data. Failure to include this data in pre-bid specification and especially final specifications may cause LACTC severe future operational constraints or costs.	38. Adequate information is in Final RFTP Appendix A.

~~CONTRACTOR~~/SUPPLIER: Krupp Industrie

SECTION TITLE: Auxiliary Electrical Equipment

SECTION NUMBER: Section 9

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	9-1	9.1	May we suggest that LACTC consider a single supplier for the auxiliary power equipment consisting of motor alternator or solid state inverter, low voltage power supply or DC to DC converter, and battery.	For the user this single supplier concept has the advantage of sole system responsibility and ensures equipment compatability. The packaged system concept has proved to be very successful on programs where Krupp has had complete system responsibility and has subcontracted the cooling equipment portion of the system.	1. System responsibility and equipment compatibility are the prime contractor's responsibility. Your comment may best be directed towards them.
2	9-6	9.2	We suggest an addition to Paragraph 3, after sentance number 5: "Flash pins on bosses are not allowed"	The motor commutators should be capable of a short time current flow of 8 times the rated current without flashover.	2. Overcurrent capability is good, but requiring these pins would limit competition. 3. An active changeover scheme is not acceptable due to the number of times it will occur. The added complexity will adversely affect its reliability and maintainability. The switching dead time would be unacceptable for some subsystems.
3	9-6	9.3	We recommend a change to Paragraph 1, sentance number 1. To read: "----- for the low voltage power supply/ battery charger are based on -----"	This recommendation is made for the use of an LVPS plus battery charger unit providing normal LVPS output and a regulated battery charger output. During normal operation the battery charger will feed the batteries and the LVPS will feed the car loads. In the event of a LVPS output interruption an incorporated switch will switch the car loads to the battery. Switchover can be accomplished by either a contactor or a thyristor. To ensure maximum battery capacity at low temperature and prevent gassing at high temperature, the charging voltage shall be temperature controlled.	

SECTION TITLE: _____

SECTION NUMBER: _____

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
4	9-7	9.3.2	Krupp recommends deletion of any reference to a DC to DC converter.	Utilization of a DC to DC converter adds an electronically complex piece of equipment to the car sub-system. The use of an MA powered LVPS/battery charger provides adequate performance for supplying low voltage DC while at the same time providing controlled battery charging for superior battery life and car performance while simlifying electronic maintenance considerably	4. Should be left open for competition purposes. The converter is a less complex solution than a low voltage power supply/switching circuit/changeover scheme.

CARBUILDER/SUPPLIER: M.A.N.

SECTION TITLE: General

SECTION NUMBER: 2.1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	2-5	2.1.4 d)	The requirement calling for the vehicle to run through water 3 inches above rail level over a distance of 400 ft at speeds up to 25 mph is too high. The speed should be reduced to approx. 5 mph.	The work of providing splash guards etc. for all undercar equipment is very extensive. Equipment accessibility for maintenance purposes is also hindered considerably. Naturally, this also involves extra cost and extra weight. Reducing the speed decreases the amount of work this requirement would entail.	1. Requirements revised.
2.	2-6	2.1.5	The limitations indicated in the specification for track and wayside are inexact. They should also give the corresponding lengths for the superelevations.		2. See Final RFTP, Appendix A.
3.	2-7	2.1.6 m)	The minimum running clearance of 8 inches for undercar equipment is not sufficient. The required dimension should be reduced to 4 inches.	Easier and more convenient arrangement of electrical equipment under the carbody.	3. Man to review and submit information in proposal.
4.	2-9	2.1.9	The requirements calling for truck frame-mounted components to withstand impact loads of 20 g is too high. We suggest a reduction to 8 g. Measurements which we have indicate a maximum impact load of 5 g. Likewise the requirement for truck axle-mounted components to withstand impact loads of 50 g should be cut back to 25 g as the figures available to us show that such peak loads never occur.	Less work and cost.	4. a) One shot only, not continuous. b) Same as above.
5.	2-11	2.2 c)	The requirements on propulsion and braking systems for pushing/pulling inoperative vehicles should be lessened. The propulsion and brake systems would have to be oversized.	Less work and cost involved for the propulsion and braking systems.	
6.	3-15	3.10	Plymetal flooring (plywood between top and bottom stainless steel skins) is not common practice in Germany. The same properties can also be provided by Delignit wooden flooring. We suggest that this wooden flooring be accepted as well.	Saves costs.	5. Reduced performance permitted. 6. Do not want a delignit floor because it requires replacement after about eight years and will not meet the one hour burn requirement.

CARBUILDER/SUPPLIER : M.A.N.

SECTION TITLE : General

SECTION NUMBER : 2.1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
7.	2-1	2.1.c	As already mentioned in our comments of September 20, 1985, we ask you to allow the following two versions proposed by us: b) close-coupled 8-wheel car c) 12-wheel car without articulation crossing in addition to the specified 12-wheel articulated car.	Version b) Less maintenance for LACTC due to - absolutely identical trucks - lower wheelset loads and consequently less wheel tire and rail wear. - deletion of the articulation with all wearing parts. Substantially better ride quality due to - separate vibration systems for each carbody half - higher speeds are possible with good passenger comfort. Further reduction in possible risks due to - deletion of all parts (articulation) moving in relation to each other - deletion of any potentially combustible material (concertina bellow) - two separate carbody halves to form individual passenger compartments and thereby effectively contain any smoke emission or fire. Version c) Less maintenance due to - deletion of the articulation with all wearing parts. Conforms with version b) with respect to ride quality and speed as well as reduced risk of accidents.	7. This is policy requirement.

CARBUILDER/SUPPLIER : M.A.N.

SECTION TITLE : General

SECTION NUMBER : 2.1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
8.	3-21	3.14	Besides seats made of stainless steel, plastic contoured seats should also be allowed, naturally in conformance with the fire safety regulations.	Weight and cost savings.	8. No, need strength and flammability requirements.
9.	11-3	11.2	Coil springs should also be allowed as primary suspension of the trucks in additon to the specified Chevron and Clouth springs.	In terms of the overall vehicle design they afford greater possibilities of improving the ride quality by means of frequency tuning. Furthermore, coil springs make it possible to avoid the material settlement encountered with elastomeric springs.	9. Possibly okay, provide details in proposal.
10.	12-1	12.2	In addition to direct-acting air brakes a spring-applied brake should also be permitted.	Simplification of brake control.	10. No, this is policy, requirement remains unchanged.
11.	17-28	17.12.6	Truck frames in Europe are usually no longer subjected to heat treatment after welding, a method which has provided utmost reliability for decades. For this reason, it should be allowed to waive stress-relieving. To substantiate our position we are enclosing for you the paper "Expert Opinion on the necessity of stress-relieving welding bogies of M.A.N.-design" prepared by the Fraunhofer Gesellschaft. Quote Summary and Conclusions The design of modern bogies is a welded structure with the trend of development being towards a typical construction with box-shaped cross sections. Bogies of this type have hitherto been placed into service in the "as welded" condition and large numbers have meanwhile proved their reliability in long years of service operation. The question of whether stress relieving of such bogies is necessary was to be investigated, starting from general criteria with respect to the specific engineering, material and welding conditions applying to M.A.N. design bogies. Facts documented in the literature were included as a basis for a decision with special consideration being given to recent findings. In detail, the task was one of reviewing the various effects of residual welding stresses with respect to interaction with distortions occurring,	Cost reduction.	11. If high copper content corten, then possibly okay. Provide details in proposal.

CARBUILDER/SUPPLIER : Mitsubishi Electric Corporation

SECTION TITLE : PROPULSION SYSTEM & CONTROL

SECTION NUMBER : SECTION 10

	ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	10.1	10-1	General	With regard to the definition of "service-proven system", since the technology in power electronics and the micro electronics field are progressing very rapidly, we consider that more lenient criteria shall be applied. The advanced system using well field-proven equipment and components will be able to offer reduction of maintenance and more energy saving than the conventional system. The service-proven system shall be defined as having performed successfully at least one proto car for a minimum of one year and put into revenue service.		1. It is understood that minor changes within service-proven electronic control packages are sometimes necessary to tailor equipment for new applications. Therefore, a certain leniencies will be provided. However, qualification testing will remain a requirement.
2.	10.2	10-2	System Configuration	The low frequency start of chopper controller is effective for the smooth start of the vehicle. The chopper frequency will not vary continuously but increase as step-up frequency at start of the vehicle e.g., quarter, half and final frequency. These frequencies will be decided not to cause the interference problems.		2. Okay in principle, all control technique will be required to be compatible with wayside and other carbonic equipment.
3.	10.3.1 10.3.2	10-3 10-4	Normal Duty Abnormal Duty	We consider that the temperature rise limit of the traction motor should depend on their insulation class. Therefore under the condition of, not only the abnormal duty but also the worst case continuous duty cycle, the temperature rises should be alllowed for its actual insulation class such as H class.		3. This is not the requirement. The traction motor insulation is to be rated as Class H and the maximum actual temperature rise allowable by Class F.
4.	10.6.4	10-5	Dynamic Brake Capability	We consider that the maximum speed of constant braking effort area to be covered by the rheostatic brake should be determined by the actual brake speed on the actual track. This speed should be decided by the run curve simulation (speed vs. distance curve).		4. Requirement has been revised, see Final RFTP.
5.	10.7.4	10-13	Static Power Devices	Though only the forced air cooling for power semiconductor is mentioned, we consider that the natural cooling should have the advantages from the maintenance point of view.		5. Requirements remain as stated.

CARBUILDER/SUPPLIER : Mitsubishi Electric Corporation

SECTION TITLE : MATERIALS AND WORKMANSHIP

SECTION NUMBER : SECTION 17

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
17. 1.2	17-1	Standards	With regard to the standards for materials for the electrical equipment, please also accept JIS (Japanese Industrial Standard).		17.1 Alternative standards will be permitted as long as they are least as rigorous as the specified one. The burden of proof will be the contractors
17.15.2	17-36	Electrical Design Criteria	We consider that the electrolytic capacitors are not preferable for the power circuit because of the short life compared with the oil immersed nontoxic capacitor. The commutation capacitors should not be allowed as an exception.		17.15 Requirement remains as stated Final RFTP.

CARBUILDER/SUPPLIER: NEW YORK AIR BRAKE COMPANY

SECTION TITLE: SYSTEM REQUIREMENTS

SECTION NUMBER: 2 (Pg. 1 of 1)

#	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	2-11	2.1.11 b)	NYAB's equipment is protected from transient spikes. Since it is not normal practice to have continuous trolley supply line (750 VDC) applied to the battery supply line, what is the possibility of this occurring and also what is the protection in the car wire circuit?	Specification clarification and general comment.	1. Requirement remains unchanged.
2	2-11	2.2 d)	NYAB assumes that the operative car be fully operational including dynamic braking. The inoperative car has no damage to the wheels or truck permitting free rolling wheels.	To prevent exceeding the thermal capacity of the brake disc on the operational car.	2. Correct, also reduced performance permitted.
3	2-28	2.3.1.1 f)	NYAB request that spec be revised for 5 psi/min system leakage.	Industry standard.	3. No leak requirement is for components prior to assembly into system.
4	2-51	2.3.1.4 d)(9)	System leakage requirement refer to comment #3 above.		4. This requirement is not unreasonable.
5	2-53	2.3.2.4	In order to achieve a realistic reliability demonstration program in the shortest possible time period, NYAB request a three month reliability demonstration program operating a 10 car train for 90 days, which represents 40,000 miles which is the average annual expected usage as specified in Section 2.1.3.	General comment - reliability and maintainability data bank can be established quicker.	5. Requirement remains as written in final RFTP.

CARBUILDER/SUPPLIER: NEW YORK AIR BRAKE COMPANY

SECTION TITLE: FRICTION BRAKE SYSTEM

SECTION NUMBER: 12 (Pg. 1 of 1)

#	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	12.8	12.6.11	Care should be taken to allow sufficient room for the friction brake equipment due to the projected size resulting from the high force requirements based on the size of this vehicle.	General comment.	1. Point well taken, carbuilder's responsibility.
2	12.9	12.7.1	NYAB requests specification allowance for a one-piece monoblock constructed. Disc in lieu of the specified two-piece.	Lower initial cost to LACTC.	2. Two pieces discs are required.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPOFATION

SECTION TITLE: General

SECTION NUMBER: 1.1

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	1-1		We propose to add the Interpretation for Definition and Abbreviations used in the RFTP.	For unification of interpretation.	1. Abbreviations are in Volume II o the RFTP. Volume II was mailed to industry on October 16, 1985. Also, see Final RFTP, Volumes I and II.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPORATION

SECTION TITLE: System and Subsystem Requirements

SECTION NUMBER: 2.1.1.1

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	2-2	c)	Please specify the circuits which shall be double wire and double break.	If a scope of double wire is unclear, the wiring cost will become unnecessarily higher.	1. All brake control, all door control, all speed-related detection, and all ATS-related control.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPORATION

SECTION TITLE: Environmental Factors

SECTION NUMBER: 2.1.4

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	2-5	c)	We consider that "Car Wash" conditions is covered with the watertightness tests conditions in section 2.3.1.1 e) (Page. 2-28). Is that correct?		1. Requirements have been clarified.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPORATION

SECTION TITLE: Track and Wayside Limitations

SECTION NUMBER: 2.1.5

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	2-6		Please indicate the car end overhang limitation on the 82 ft radius horizontal curve.	To determine horizontal plan of car end.	1. Details of wayside equipment placement have not been developed. It is our intention to have the contractor propose their service-proven equipment and arrangement and to notify us as to its "overhang" and "mid-cord offset" dimensions. If these dimensions are then found unsatisfactory, discussions may follow.
2.	2-6		Please indicate the maximum track warp from a level plane in 31ft truck centers and in 62 ft truck centers.	It is necessary to design trackability of trucks and articulated section.	2. Details are in Final RFTP, Appendix A.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPORATION

SECTION TITLE: Clearance Requirements

SECTION NUMBER: 2.1.6

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	2-7		We propose to add the drawing of LACTC's clearance diagram in this specification.	Clearance diagram is necessary to meet the requirements of this section.	1. Response same as your Item #1, Section 2.1.5.
2.	2-7		Coupler height is not specified. May we decide this demension keeping the clearance required in Para. 2.1.6 n)?		2. Yes, coupler arrangement must meet clearance requirements of S2.1.6n.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPORATION

SECTION TITLE: Electromagnetic Interference

SECTION NUMBER: 2.2.12

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	2-23	2nd	Please submit the figure showing "The design requirement for broad band emissions".	Fig. 2-1 is showing frequency and accceleration of ride vibration.	1. Requirements have been revised to provide clarification.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPORATION

SECTION TITLE: Ride Quality

SECTION NUMBER: 2.2.14

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	2-26	2nd	Please clarify the test road (track) condition.	Ride quality depends upon not only suspension characteristics of truck but also track or road condition.	1. Details are provided in Final RFTP.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPORATION

SECTION TITLE: Qualification Tests

SECTION NUMBER: 2.3.1.2

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	2-31	f)(5)	Brake System Endurance Test Is this test required even if the brake system is a service proven system?		1. If the carbuilder/supplier can substantiate that the complete and exact hardware and system have been used previously and that like test data can be provided, LACTC will consider waiving the requirement.
2.	2-32	h)	Truck Qualification Tests Stress Coat We propose to add the alternative method such as using many strain gages including Rosset gage to critical location.	Stress coat method will sometimes have no sign when the climate condition is of high temperature and high humidity. Even if the test room temperature and humidity is controlled, it seems still very difficult to obtain sufficient result from our experience.	2. The process requires a submittal of stress analysis, location of the strain gauges determined from the analysis, and stress coating in areas of potential high stress which may not have been identified in the analysis and may require additional strain gauges. If the stress coat indicates high stresses, strain gauges are to be done.
3.	2-32	h)(1)	Static Load Tests Does AW4 mean full load, or any other load condition?		3. Clarification provided in Final RFTP.
4.	2-36	n)	Does ASTM D178077 mean ASTM D178-77?		4. Yes, revised to ASTM D178-81.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPORATION

SECTION TITLE: Structual Design Requirements

SECTION NUMBER: 3.4

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	3-4	a)	full live load Does this mean the passenger load in AW2 condition?	We need the exact explanation for the car strength study.	1. No. This is the 135,000 lb condition. See RFTP Volume I.
2.	3-4	b)	full loaded carbody Does this mean the AW2?	Do.	2. Same response as No. 1.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPORATION

SECTION TITLE: Design Calculations

SECTION NUMBER: 3.5

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	3-6	e)	full vertical loading Does this mean the passenger load in AW2 condition?	We need the exact explanation for the car strength study.	1. No. This is the 135,000 lb condition. See Final RFTP Volume I.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPORATION

SECTION TITLE: Underfloor Equipment Supports

SECTION NUMBER: 3.7.5

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	3-11	1st	We propose to change the 2nd sentence to read "Underfloor.....in tension, unless equipment design is such that bolts in tension is the most practical way to mount the equipment and approved by LACTC prior to production."	It is not a practical way to apply the requirement of this section to all the underfloor equipments.	1. The RFTP allows bolts in tension where an approved safety strap is provided. Request denied. Should the carbuilder identify a particular problem, their proposal should identify the area and explain how it will be mitigated (i.e. safety strap). This requirement relates to major underfloor mounted equipment, i.e. compressors, motors, J-Boxes, brake manifolds, etc., which if it became unsecured would result in an unsafe condition.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPORATION

SECTION TITLE: Covering

SECTION NUMBER: 3.10.2

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	3-16	2nd	... bonded to the sub-floor panels ... We think that the floor ply-metal is correct.		1. RFTP clarified.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPORATION

SECTION TITLE: Car Interior

SECTION NUMBER: 3.11

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	3-17	3rd	APTA Transit Security Guidelines Manual, Section 21 Does this mean "Guidelines for Design of Rapid Transit facilities Part 2 section 2-1"?		1. No, this reference is noted correctly. Copies available direct from APTA.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPORATION

SECTION TITLE: Air Ducting

SECTION NUMBER: 7.2.3

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	7-3	2nd	Please advise us about "R" value. Does this mean "K" value?		1. No, "R" value designation is correct. Definition in ASHRAE Manual.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPORATION

SECTION TITLE: Windshield and Cab Side Window Defroster/Demister

SECTION NUMBER: 7.3.3

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	7-6	1st	We propose to use electrically heated windshield and side window instead of a blower and heater assembly.	Electrically heated system is more simple and effective than blower and heater system for defrosting/demisting.	1. No, a failure in the heating element or windshield breakage requires an expensive replacement of glass and element. Irreparable and expensive. RFTP to remain as is.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPORATION

SECTION TITLE: Main Interior Lighting Fixtures

SECTION NUMBER: 8.2.1

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	8-2	2nd	It is requested that an average rated life of lamps is 10,000 hours.	According to IEC Publication 81, the minimum life is 2,000 hours. So we think the average rated life 20,000 hours is maybe too long.	1. Our lighting source shows rapid start fluorescent T-12 F40W lamps with extended life in excess of 21,000 hours, normal lamps are rated at 18,000 plus. The criteria remains unchanged.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPORATION

SECTION TITLE: Suspension System

SECTION NUMBER: 11.2

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	11-3		We propose to add such sentence as "Proposal using other bearing device for center truck will be considered".	We intend to propose twistable articulation section system in order to produce better trackabilbity of trucks on warped track.	1. Requirements have been revised, see Final RFTP, Volume II.
2.	11-3	2nd	Primary suspension Please add the phrase at the end of the last sentence to read "or other similar spring system approved by LACTC."	There are many kind of suspension system to provide low maintenance and light weight, for example, conical bonded rubber spring. So, we think the primary spring system shall not be limited to 2 types.	2. The conical bonded rubber spring appears to be similar to a "clouth" spring. more details are required concerning the proposed method.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPORATION

SECTION TITLE: Truck Frames

SECTION NUMBER: 11.3.1

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	11-5	2nd	Radiographic inspection Shall the other inspection methods (e.g. Ultra-sonic Inspection) be applied to a place where Radiographic inspection is not possible?	For closed box section frame fabricated by welding, there are many locations which are difficult to apply the films.	1. Where radiographic inspection is not possible, ultrasonic testing will be considered using the appropriate ASTM requirements on a case-by-case basis.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPORATION

SECTION TITLE: Radius Rods

SECTION NUMBER: 11.4.2

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	11-8	3rd	Please change the sentence of line 3 and 4 to :.....shall be positioned as the most suitable height as allowed by clearance.	Height of radius rod will affect truck pitching motion and longitudinal acceleration of car body. Therefore usually the height of radius rod or bolster anchor is placed close to axle center but not only below the center as determined by calculation of longitudinal vibration.	1. It has been LTK's experience that allowing placement of radius rods above axle centers close to the bolsters point of rotation has caused truck/bolster instability. The higher the connection point the greater the weight transfer during application of tractive efforts. If contractor has a service-proven design which meets all other criteria except radius rod placement, they may submit this design for consideration. However, LACTC has the right to disapprove its use.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPORATION

SECTION TITLE: Format and Content

SECTION NUMBER: 15.1.6

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	15-2	1st	The format of Manuals shall not be bound only to ATA 100 format. Other formats or styles shall be considered as permissible. We propose that Authority and contractor should discuss further in this regard after the contract award based on the contractor's experience and existing manuals used in various transit authorities throughout U.S.A..	To reduce unreasonably high cost for the publication of manuals. Also, it is almost impractical to have the manuals of all sub-suppliers in the same format.	1. This is not an unreasonable requirement and has been done in the past i.e. M-2 GE, SLRV, Boeing. Using sections with various vendor formats render the manuals at best difficult to use. The criteria remains unchanged. The reference to ATA 100 is intended as a guide to describe the level of detail and criteria necessary for cross referencing within the supplied manuals.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPORATION

SECTION TITLE: Fastenings

SECTION NUMBER: 17.2.2

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	17-3	1st	We propose to add "specified by LACTC" after "All exposed fastenings".		1. "All exposed" fasteners is to be retained. The general criteria is for stainless steel, tamper-proof fasteners - no exceptions.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPORATION

SECTION TITLE: Installation of Wire in Conduit

SECTION NUMBER: 17.11.6

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	17-22	2nd	Bend radii....no less than 8 times the nominal inside diameter of the conduit. We propose that bend radii of the conduit according to ANSI standards is permitted.	Approx. 5-6 times the inside diam. of the conduit is permitted in ANSI C80.1.	1. The comment pertaining to ANSI standards is correct; however, our requirement is for eight times the nominal inside radius.

CARBUILDER/SUPPLIER: NIPPON SHARYO, LTD./ SUMITOMO CORPORATION

SECTION TITLE: Flammability of Vehicle Materials

SECTION NUMBER: 17.14.3

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	17-34		Seat frame Ds(1.3)≤100 We would like to confirm that Ds(1.5)≤100 is correct.		1. Revised.
2.	17-34		Upholstery Ds(1.5) ≤ 100 We would like to confirm that Ds(4.0) ≤ 100 (uncoated) is correct.		2. Revised.
3.	17-35		Flooring (Structual)≥ 1 Hour We propose 15 minutes instead of 1 hour.	We think 15 minutes is enough for passenger escape.	3. This is an SCRTD requirement and recommended by UMTA, no change.

ADDITIONAL Comments (p5!)

No.	Section (page)	Description	Comments	Remarks
1.	14.1 14.2 (14-1)	ATS System	According to RFTP, the scope of work of ATS system between Contractor and LACTC is as follows. 1) ATS system design and supply of equipment including car-carried and wayside equipment ------ Contractor 2) Installation of car-carried ATS equipment ------ Contractor 3) Installation of all other ATS equipment such as wayside transmitters ------ LACTC We would like to know who should coordinate all the ATS system and control the quality assurance including installation of wayside equipment. Would you please explain the background that the wayside equipment is included in the car contract?	1. LTK advised Sumitomo that the present RFTP intends for the prime contract to be responsible for the supply and integration of the ATS system. However, alternatives will be reviewed and advisement provided.

(P3/3)

No.	Section (page)	Description	Comments	Remarks
2.	-----	Adoption of Products made in Japan	We would like to consider to use equipment such as passenger seats, window made in Japan as well as raw materials. Would you have any comments regarding our idea?	2. At the present time there is only a 20% U.S. content requirement.
3.	2.3.4.1 2.3.4.2 (2-55) (2-56)	Equipment for Mock-up	RFTP requests that actual equipment should be installed on the mock-up. But it seems to be difficult to meet this request in such a short period. (6 months after Award of Contract)	3. Comment is understandable. The RFTP will be modified to allow simulated equipment for underfloor general arrangement. Then at an approved later date actual hardware approval will take place.
			We propose to apply dummy equipment for which cannot be obtained until mock-up review, and will be accomplish finally replacing with actual equipment	4. Requirements revised, see Final RFTP.
4.	7.5 (7-13)	Temperature Control	Allowable variation in interior car temperatures specified in Section 7.5 para. 1-4 appears to be excessive requirement for Light Rail Vehicle for commuter service. Please review again.	

CARBUILDER/SUPPLIER: SIEMENS-ALLIS, Inc.

SECTION TITLE: General

SECTION NUMBER: 1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	1-1	1.1	Although LACTC expresses the desire to prefer "those designs which have a documented operating history satisfactory to LACTC" the detailed requirements of the reviewed document preclude just this. There is no proven design, that fully complies with LACTC's specification. For LACTC's convenience, DUEWAG has prepared two (2) drawings #05167140 and 05167132 that show different vehicle configurations. Both configurations are based on an existing vehicle (Pittsburgh LRV). Acceptance of existing designs, with only the absolutely necessary changes and modifications, would save LACTC considerable amounts of money and time in the areas of design, design review, mock-ups and testing.		1. We understand the comment and agree; however, the requirements of the RFTP identify the needs specific to the LA/LB project ar further allow for healthy competition.

CARBUILDER/SUPPLIER: SIEMENS-ALLIS, Inc.

SECTION TITLE: System Requirements

SECTION NUMBER: 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	2-3	2.1.1.1i)	All requirements...of the AAR C & S section have to be met as of the date of contract award, should be changed to: as of the date of bid opening.	There could be a considerable time lag between bid opening and contract award. Changes to AAR during this time period cannot be considered after bid submittal.	1) Requirement revised.
2	2-5	2.1.3	Paragraph should be changed to read: Subject to...and also to the Contractor's recommended maintenance practices and normal, industry accepted operating procedures, the LRVs.....	It will be impossible for any Contractor to design LRVs for a minimum service life of 30 years if LACTC's standard maintenance practices and operating procedure are not known or established LACTC's standard maintenance practices and operating procedures have to be defined.	2) Requirement revised. 3) All presently available information is found in Section 18.3 of RFTP.
3	2-11	2.1.11c)	Second sentence should be changed to read: Design details will be supplied by LACTC before bid submittal date.	Provisions to install LACTC provided equipment can be exhaustive. Details have to be known to be included in pricing.	4) A safety timer is required to re-apply brakes should they be released for longer than a preset interval.
4	2-15	2.2.4	Last sentence: Please explain the purpose of the equipment/function specified.		5) Requirement remains as specified. 6) Requirement is as stated in Final RFTP.
5	2-18	2.2.9b)	Emergency Command Second Paragraph should be changed to read: In multiple-unit operation, an undesired separation of the trainlined electric functions shall cause an emergency brake application on all cars behind the point of separation.	This is to prevent part of the train to collide with front portion of train.	7) Same as number 6. 8) Same as number 6. 9) We understand the limits of liability, this is what we want.
6	2-20	2.2.10.3	The last sentence should be deleted.	Although it would generally be possible to meet the requirement, the airconditioning system will most likely not be able to produce less than about 72dBA.	
7	2-21	2.2.10.5.1d)	Paragraph should be deleted.	Same reason as item # 6 above.	
8	2-22	2.2.10.5.2d)	Paragraph should be deleted.	Same reason as item # 6 above.	
9	2-18	2.2.9b)	The third paragraph describes in great detail a specific emergency trainline circuit, which obviously does not allow alternatatives that would be closer matches to specific manufacturers systems and hence be safer. LACTC should allow different methods of emergency trainline circuits, provided they meet LACTA's objectives.	By prescribing a specific system to such detail, LACTC in fact assumes the responsibility that the systems underlying principle is safe.	

CARBUILDER/SUPPL... SIEMENS-ALLIS, Inc.

SECTION TITLE: System Rrquirements

SECTION NUMBER: 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
10	2-45	2.3.1.3c)	Heating System Test First paragraph; last sentence: The requirement, that the climate lab shall be capable of reasonably simulating the effect of wind wipe on the car for speeds of 55 mph, should be deleted.	There is no climate lab publicly and reasonably accessible that is capable of simulating the effect required. Since a chill factor applies only to bodies, that have some kind of evaporation, how does LACTC propose to simulate the wind wipe effect? Adding wind tunnel features to a climate lab will cause considerable additional cost. The required simulation will provide LACTC with no valuable information.	10) Comment is incorrect. This has been a typical industry requirement. It does not require a wind tunnel but fans circulating air to identify leaks that will appear in a static test. The comment concerning no valuable information is incorrect. As an alternative calculation can be made to determine the amount of additional transmission losses and the test temperature reduced accordingly.
11	2-51/52	2.3.1.4f	Air Conditioning Run-In Test. This requirement should be replaced by a functional A/C test for each car.	The A/C system has to be tested extensively at the point of manufacture and in an approved climate lab. This test will only add considerable cost and time delays for LACTC without providing further information. The requirement for the specified "hot room" in essence specifies a climate room test for all cars.	11) No, in our experience with M-2, M-3, M-4, etc., it has been done. Allows to identify problems before delivery. A/C is very important in LA.
12	2-52	2.3.1.41)	Although we agree that LACTC should have the right to perform their own performance tests, this one-sided requirement could put the Contractor at a severe disadvantage. Additional tests beyond the control of the Contractor have to be performed either after car acceptance or within a specified time period after the Contractor has declared the car to be tested ready for acceptance.		12) LACTC will have 30 days to accept vehicles as detailed in Volume II. The tests must be done in this period.

CARBUILDER/SUPPLIER: SIEMENS-ALLIS, Inc.

SECTION TITLE: System Requirements

SECTION NUMBER: 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
13	2-7,2-8	2.1.6	In general, we would appreciate if dimensions would be specified as a range. In detail a) Length of Car... Please add: Maximum length c) Width of Car... Please change to: Side Sheet-Floor Level max. 8 ft. 10 in. min. 8 ft. 6 in. f) Distance truck center to center... Please give a max. and a min. dimension Together with the requirements for the fare collection system, that requires the front door directly behind the operator's cab and other requirements like total length, seat spaces etc. the leading axle will be just below the front door. This would require to install the sand box for the leading axle. -underfloor (see our dwg. 12.527) -or on the truck frame (see our dwg. 05 063 132). h) Please add: Max. height p) 6 ft. 9 in. Please change to: Min. height 6 ft. 5 in. q) Please add: Min. Height... r) Please add: Min. Width... s) Please change 6 ft. 8 in. into Min. Height: 6 ft. 4 in.	This would allow all bidders to use their standard components and a proven design vehicle could be provided. Standard DUEWAG car width is 8 ft. 8 3/8 in. 6 ft. 8 in. is extremely high for door openings and would create problems with door drive accomodation.	a) Requirement revised. c) Requirement revised. f) It is our intention to have the contractor propose their service-proven equipment and under floor arrangement and to advise us as to the vehicle's "overhang" and "mid-cord offset." If these dimensions are unsatisfactory, then discussions may follow. h) Requirement remains. p) Requirement revised. q) Requirement revised. r) Requirement revised. s) Requirement revised.

CARBUILDER/SUPPLIER: SIEMENS-ALLIS, Inc.

SECTION TITLE: System Requirements

SECTION NUMBER: 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
14	2-21	2.2.10	Equipment Noise Please delete	Only the overall interior and wayside noise is of importance. Additional requirements make the vehicle only more expensive without providing additional benefits for neither LACTC nor the vehicles.	14. No, once equipment is installed and delivered changes are more expensive and difficult. This protects both LACTC and the carbuilder from possible inadequate supplier. Everyone is in the same situation.
15	2-56	2.3.4.2	Underfloor Mock-up Please delete completely	In our opinion the requirements for 'proven design' should lead only to contracts with qualified manufacturers, which have the experience to build the underfloor equipment without a mock-up. This requirement adds unnecessary costs to the contract.	15. No, the requirement and uses for the mock-up are numerous. They are used as training aids, to approve layouts, etc.
16	2-40	2.3.1.2	Air Leak Smoke Bombe Test Please delete completely	Watertightness Test already specified 2.3.1.2e). Pressurization Test already specified within the Climate Room Test. This test only adds cost without additional benefit to customer.	16. This test is used to determine air leak locations. Siemens and others have had pressurization problems in the past. The test is very inexpensive.
17	2-9	2.1.7d)	Weight definition AW3 is nowhere else used in the RFTP. Instead "full load" or "fully loaded" is used throughout the RFTP.	Clarify specification.	17. "Full load" is 135,000 lb., see Final RFTP.
18	2-19	2-2-9d)	Pulse-width modulated command signals for propulsion and braking should also be allowed.	An example for pulse width modulated command signals is the VOV signal, widely used in Europe. PWM signal processing is proven in a magnitude of applications. PWM-VOV is fail-safe against wire breakage and short circuits.	18. Possibly okay, provide details in proposal.
19	2-17	2.2.8	Mode Change dead times should be specified differently for chopper and cam controller propulsion systems.	A cam controller needs about 550ms to reset from top propulsion step to first braking step.	19. Requirements have been revised.

CARBUILDER/SUPPLIER: SIEMENS-A[illegible]S, Inc.

SECTION TITLE: Car Body

SECTION NUMBER: 3

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	3-24	3.16.4c)	This requirement could be eliminated by requiring automatic reset with door cycling.	Less switches, less operator workload.	1. RFTP remains unchanged.
2	3-25	3.16.6	Trainlined change of destination signs from controlling cab should be specified as to display accuracy among signs.	Remotely changing the sign display does not necessarily mean that all signs have to show same destination. Intended function can probably not be provided with certain type sign.	2. Requirement clear as written.
3	3-1	3.2	Actual: The underfloor sheets shall be constructed of stainless steel. Proposal: Please delete the requirements for underfloor sheets.	Benefit to LACTC: Lower Costs Reason: Please see our comment on para. # 3.12.1	3. No, in line with our 30-year design life, stainless is required. 4. No, this design is unacceptable from a long-term flammability standpoint. Duewag representatives have indicated to LTK that Delignit floor lasts only about eight years.
4	3-18	3.12.1	<u>Thermal Insulation of Floor</u> We like to propose a different design of underframe, floor and insulation as follows: - LAHT longitudinal and transversal girders which form the underframe open at the bottom side of underframe. - Delignit FRCW plywood bolted to the top of the underframe with a sealing material between girders and floor. - Bottom side of Delignit covered with a noise insulation mat (e.g. "Bary-X 2") - Application of undercoating to the bottom of underframe and Delignit (material: Tectyl)	1. Our test results re noise with the proposed design show that the noise requirements per spec. can easily be met. 2. Our tests show quite clear that the dampening factor of a floor with an underframe sheet of metal, as you specified, shows worse results than a Delignit floor without sound dampening. 3. The underframe sheet of metal together with the glassfiber insulation is undesirable also in view of a) Additional weight b) Reduction of clearance for underfloor equipment c) Rotting of underframe as no air circulation can be provided d) Additional cost	

CARBUILDER/SUPPLIER: SIEMENS-ALLIS, Inc.

SECTION TITLE: Operator's Cab

SECTION NUMBER: 5

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	5-1	5.2	Specification should allow for other than full length piano hinged cab doors.	To allow proven design from various manufacturers.	1. Need details of alternative.
2	5-1	5.2	To ease cleaning, having no equipment boxes under the seats is preferable. In turn, this equipment should be concentrated in an electrical equipment box that is an integral part of the operator's cab backwall. This box would still allow 1/2 to 2/3 car width of backwall to be windows.		2. The location of equipment under seat is common. However, Siemens may offer their own design as described. There is no prohibition to this. 3. Revised, see Volume I of RFTP.
3	5-5	5.3.13	If the horn is to be audible under <u>all conditions</u> from a distance of not less than 500 feet, then "all conditions" must be clarified.	There will be conditions where the horn might not be audible, very high ambient noise for example. People inside a car with the radio on might not hear it. Requirement is not clear.	4) No change, this is not unrealistic, the tolerance yields a 3.33% tolerance not 1.67% and has been accomplished previously. A potential velocity error of 2.5% increases the signal block lengths and crossing warning times and is undesirable.
4	5-6	5.3.15.1b)	Speedometer accuracy requirements are not realistic. ± 1mph at 60mph would require a tolerance of 1.67%, whereas 5% would be more realistic for a mechan/electric instrument.		
5	5-6	5.3.15.2c)d)	Doors closed/locked annunciators should be combined into one.	For the operator it is only of interest whether or not <u>all</u> doors are closed/ locked.	5) No change, this will allow for easier determination of door problems from interior.

CARBUILDER/SUPPLIER: SIEMENS- UTS, Inc.

SECTION TITLE: Passenger Doors

SECTION NUMBER: 6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	6-1	6.1.1	Door leaves, constructed of glass fiber reinforced resins should be permitted, provided they meet all other requirements.	No corrosion problems.	1. Provide details in proposal.
2	6-3	6.2.2	Adjustability of +0.5 seconds for a electrically motored door should be deleted.	Adds control for adjustability, increases cost and is not necessary as during summer and winter conditioning door opening and closing times stay constant with our proven design door actuators.	2. No, without adjustment, with time, the door speeds will vary due to dirt, grime, wear, etc. In addition, adjustment needed for proper door leaf to door leaf synchronization.
3	6-5	6.3.1d)h)	Door closing switches should be combined into one switch that closes all doors.	Less confusing for the operator and safer.	3. We do not agree with the comment concerning safety. Switch locations to either side of console which allows the operator to control doors while looking through the side mirror.

CARBUILDER/SUPPLIER: SIEMENS-ALLIS, Inc.

SECTION TITLE: Air Comfort System

SECTION NUMBER: 7

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	7-1	7.2	Fresh Air Entry Will alternate methods of fresh air entry be acceptable apart from that specified of "entry through screened openings in each side of the unit"? We propose an alternate method of fresh air entry where air is taken from the pressurized condensing compartment, prior to being passed over the condenser coils and introduced to the return air plenum, at a positive pressure through an extended surface filter located in the condenser bulkhead section. All necessary precautions are taken to ensure water cannot enter the return air section and noise is not transmitted into the plenum area.		1. Possibly okay, as long as it meets other requirements. Provide details in proposal.
2	7-½	7.2.1	Evaporator Blower Unit We propose the evaporator motor/blower assembly be isolated on suitable rubber anti-vibration mounts in lieu of springs as specified. We would also propose that the supply air duct connection to the unit be made by "self sealing flanges" as incorported on all roof mounted packaged air conditioning units manufactured by SIGMA. This arrangement has been proven successful in many applications and deletes the necessity of mechanically interfacing the unit to the vehicle with flexible connectors each time it has to be removed and replaced.		2. Probably okay. Need details of proposed alternative, provide in proposal.
3	7-4/5	7.3.1	Overhead Heat Will incalloy sheathed elements with sealed ends be acceptable in lieu of the open wound resistance wire type nominated?		3. Probably Okay. Need details of proposed alternative, provide in proposal.
4	7-6/7	7.4	Air Conditioning Will glassed reinforced plastic covers be acceptable as a means of insulating the unit from damage due to contact with an energized trolley wire?		4. Yes.
5	7-7/8	7.4.1	Design Criteria Will R12 refrigerant be considered as an alternate to R22 refrigerant nominated? Supportive documents can be provided to show the merits of R12 systems over R22 systems in this type application.	See Attachment SIGMA The use of Refrigerants R12 & 22 (4 pages)	5. An R22 system is required.

CARBUILDER/SUPPLIER: SIEMENS-ALLIS, Inc.

SECTION TITLE: Air Comfort System

SECTION NUMBER: 7

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
6	7-10	7.4.3F	Compressor/Condensor Portion Will a roof package which does not incorporate a liquid receiver be acceptable? Many roof package systems do not incorporate liquid receivers due to the nature of a packaged unit as opposed to split system. The function of a liquid receiver can be adequately incorporated into the condenser coil design and a suitable purge valve fitted to the top rows of the condenser coil. Isolation valves can be fitted either side of the coils and in the event that system pump down is required this can be achieved using the condensers as vessels.		6) Yes. Requirements have been revised.
7	7-11	7.4.3.h	Would a spring loaded relief valve be acceptable in lieu of the fusible plug specified?		7) No, failure-prone, high-maintenance item.
8	7-12/13	7.5	Temperature Control Will system control other than by thermisters be acceptable? We would propose as an alternate the use of 'Trafag' electro mechanical temperature controls which have been designed specifically for railcar use and used extensively throughout Great Britain, Europe and Australia in railcar air conditioning units.		8) This is a step backwards in terms of reliability.

CARBUILDER/SUPPLIER: SIEMENS - LIS, Inc.

SECTION TITLE: Lighting System

SECTION NUMBER: 8

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	8-4 8-5	8.3.2 8.3.4	The function and location of the "auxiliaries ON/OFF" switch is nowhere explained.	Needs to be specified.	1. Auxiliaries ON/OFF switch has been clarified to read Transfer Switch.
2	8-6	8.4.2	3 Seconds requirement for MA-set inertia under full load might be too tight. Delete requirement.		2. If proposed M.A. cannot meet th: requirement, load shedding is necessary.

CARBUILDER/SUPPLIER: SIEMENS-ALLIS, Inc.

SECTION TITLE: Auxiliary Electrical Equipment

SECTION NUMBER: 9

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	9-1	9.1.1	The pantograph should not be mounted "over an end truck." Should be mounted instead near the articulation on the A-car.	For a bi-directional vehicle the center mounting position provides better estetics. Also, space on the roof towards the ends of the car is usually more scarce.	1. Pantograph requirements have beer revised; however, locations shall be over end truck.
2	9-1	9.1.1	Electric pantograph lowering/raising should be allowed.	No air-lines going to and on the roof. Less leaks, higher reliability.	2. Provide details in proposal, possibly okay.
3	9-4	9.1.4	Other power return circuit arrangements should be allowed.	To enable proposal of existing proven design vehicles.	3. No, requirements remain unchanged.
4	9-5	9.1.5	Delete first paragraph	There will not be space enough available at the axles to install six (6) ground brushes for safety grounding plus six (6) brushes for power return. The maximum that could be accomodated, and is used on proven design cars, is six (6) brushes all together. The other axle ends will be needed for speed sensors for the slip/spin system.	4. Requirement remains unchanged.
5	9-6	9.3	The low voltage alternative is stated incorrectly. Should read: ... that are based on nominal 24VDC; with a charging voltage of 28.5VDC (max) at the terminals of a 20 cell nickel cadmium battery.	18 cells will limit the discharge cut-off voltage at too high a level.	5. Requirements revised, see Final RFTP.
6	9-8	9.3.5	a) Explain the function of the "ground return test switch." b) Differing means of low voltage negative return circuits should be allowed.	The specified systems with individual, isolated return wires for each load circuit is known from four-axle cars, because of limited wire-way space through the articulation. Separate returns do not have any advantage over a "branching system", which, as a matter of fact, makes failure tracing easier, because it will lead not only to the faulty wire but also to the physical location of the fault.	6. a. To disconnect (isolate) the negative side of the battery system for trouble shooting purposes. b. No, requirements remain unchanged.

CARBUILDER/SUPPLIER: SIEMENS-ALLIS, Inc.

SECTION TITLE: Auxiliary Electrical Equipment

SECTION NUMBER: 9

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
			c) The specified battery ground fault system would require a differential relay that could pick-up a fault current of 10 miliamps, while being able to carry normal currents of up to 300 Amps. Such a relay does not exist.	Existing differential relays do have a sensitivity of about 5 Amps, none of which works really reliably. There will always be transient stray currents that will lead to false indications.	c) Requirement deleted.
7	9-10	9.4.3	Delete this requirement.	A circuit breaker as would be required for the stated purpose does not exist. Overtemperature protection could trip battery main contactor.	7. Do not agree, presently supplied on numerous jobs. Requirement remains unchanged.
8	9-10	9.4.4	Delete this requirement.	There is no circuit breaker of adequate capacity (300 Amps peak current; 200 Amps continuous) available. Battery disconnect could be attained with cut-out switch, working on battery main contactor.	8. This is a manual battery disconnect to be located for easy access by operator. Requirement remains unchanged.
9	9-10	9.5.1.1	Delete "return circuit test switches..." requirement.	These switches, which function is not explained, will only add to the complexity of the system without providing any benefits to LACTC. See also comment to para. 9.3.5.	9. This can be as simple as knife switch. (Presently supplied on Chicago South Shore and Kawasaki cars in Philadelphia.) Requirement remains unchanged.
10	9-11	9.5.2	Primary line voltage has to be routed from the roof to the undercar. This will have to go through the passenger or operating cab areas. (within sidewalls)		10. High voltage cabling from pantograph may be run through continuous thick walled conduit.

BUILDER/SUPPLIER: SIEMENS-ALLIS, Inc.

SECTION TITLE: Propulsion System & Control

SECTION NUMBER: 10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	10-3	10.2.1.3	First paragraph, second to last sentence; change to read: At least 20 resistance notches in acceleration and at least 16 resistance notches in dynamic braking shall be provided.	Service proven systems employing these notches are widely used and provide superb comfort. System will be simpler, less expensive, more reliable and easier to maintain.	1. Requirement changed to require chopper control.
2	10-13	10.7.6	Replace requirement for Main Knife Switch with requirement for automatic or semiautomatic propulsion interlock when shop power supplied.	The specified knife switch is inherently dangerous. Per specification, the blade is energized in two out of three positions when the cover of the switch is removed. Such an arrangement is <u>not</u> protected against accidental touching. No contractor can knowingly install and provide a dangerous device. There are better ways to provide the required functions.	2. We disagree-this is standard and accepted practice in the U.S. industry.
3	10-14	10.7.8	Change to read: Each axle of all trucks shall be provided with <u>one</u> ground brush...	Each axle has only two (2) ends; if each end is equipped with one (1) ground brush, where would one install the speed detectors for the slip/spin system?	3. Requirement remains as stated in Final RFTP.

CARBUILDER/SUPPLIER : SIEMENS - [illegible] IS, Inc.

SECTION TITLE : Trucks

SECTION NUMBER : 11

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	11-2	11.1	90 degree of rotation of truck under the car is impossible due to stops that prevent this rotation also under condition of derailment. Therefore the motor air duct must only follow the rotation within the limit set by the stops.		1. Details as to rotation stops' adequacy will be necessary in proposal. 2. Requirement remains.
2	11-5	11.3.1	Inspection of <u>all</u> welds by dye penetration or magnetic particle is not customary within the rolling stock industry. This extent of inspection, which is used in the nuclear industry, would lead to prices like in the nuclear industry. Even UIC Kodex, the specific standard of welding on railway vehicles doesn't recommend such a high inspection rate.	Unreasonable costs for inspection of weldings made by experienced manufacturers.	

CARBUILDER/SUPPLIER : SIEMENS-ALLIS, Inc.

SECTION TITLE : Friction Brake System

SECTION NUMBER : 12

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	12-1	12.2	Pneumatic pressure applied disc brake system is heavier and in our eyes not as safe as a spring applied, pneumatic released discbrake system, because such a system has the parking brake already incorporated.	Less cost, less maintenance, less spare parts, higher reliability, improved safety, because spring applied brakes will always apply if power failure or pneumatic line rupture should occur.	1. We disagree, requirements remain.
2	12-16	12.7.8	Second paragraph; Change to read: Each car shall be provided with eight (8) sandboxes and eight (8) nozzles arranged to deposit sand on each rail just ahead of the leading axles of each power truck in each direction of travel. (The second sentence can then be deleted)	Sand in front of the first truck only is not sufficient. Could impose a safety hazard.	2. Requirement is as stated in Final RFTP.

CARBUILDER/SUPPLIER: SIEMENS-ALLIS, Inc.

SECTION TITLE: Vehicle Communications

SECTION NUMBER: 13

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	13-1	13.1	LACTC should also furnish special tools as they might be required for LACTC supplied electrical connectors and other materials.	Contractor cannot estimate required tools.	1. Requirement added.

CARRIER/SUPPLIER: SIEMENS-ALLIS, Inc.

SECTION TITLE: In-Service Support

SECTION NUMBER: 15

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	15-4/5	15.2.1	The test equipment specified is fit for a development laboratory. Limit requirements to Contractor recommended test equipment. What size equipment is the specified environmental chamber to accomodate? Delete requirement for environmental chamber.	The cost of the specified equipment will be exorbitant. There is no need for such a level of sophistication.	1. Requirement revised, see Final RFTP.

CARBUILDER/SUPPLIER : SIEMENS-ALLIS, Inc.

SECTION TITLE : Management

SECTION NUMBER : 16

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	16-2	16.4	All drawings are the Contractor's proprietory information and are only to be used by LACTC in connection with the LRVs delivered. All drawings will have to carry the Contractor's name block and a copyright note.		1. No rights reserved. Dual title block acceptable for drawings.
2	16-4	16.9	Commercial programs and software procured in a license agreement cannot become the property of LACTC. LACTC will have to obtain their own license to use the programs and software.		2. Not acceptable must provide software which does not have licensing restrictions.

CARBUILDER / SUPPLIER: SIEMENS-ALLIS, Inc.

SECTION TITLE: Material and Workmanship

SECTION NUMBER: 17

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	17-1	17.1.2	The sentence: "All materials shall conform to..... AAR, ANSI, ASTM etc." should be extended by: "....., or other standards, as approved by LACTC."	Would allow manufacturers to provide proven design vehicle.	1. Covered in Volume II - other standards may be permitted but proof of equality is contractors' responsibility.
2	17-13	17.9.2	We recommend to permit also the use of stainless steel tubes on car body and trucks, together with ERMETO®-Type fittings.	Stainless steel is very longliving and the ERMETO®-fittings are much easier to handle than soldering of copper pipes, also in repair process. SST-piping and the ERMETO® fittings are available in U.S..	2. No, requirement remains as stated.
3	17-1	17.1.2	Will metric fastness be allowed?	Most proven designs use metric standards throughout.	3. Metric fasteners are permitted in a restrictive manner, see Final RFTP.
4	17-19	17.11.1	Sixth paragraph: Three-phase AC systems do usually have potentials that differ by more than 50 volts. Are those also to be wired separately?		4. No, this is not the intention of the RFTP requirement.
5	17-21 17-22 17-26	17.11.3 17.11.6 17.11.18	The requirement for the "degree of fill" for wire ducts, conduit and wireways are very restrictive. The design of wire routing and combination should be left completely to the responsibility of the contractor.	The number of wires and cables to be accomodated on a modern six-axle LRV does unfortunately not agree with the traditional "fill" requirements. Contractor will need the flexibility and liberty to arrange their wiring as the vehicle geometry permits, of course within the Standards, Rules or Regulations as they apply.	5. No, this will not be left up to the contractor. These requirements are based on years of experience and are known to provide satisfactory results.
6	17-35	17.15.1	Delete this paragraph.	LACTC is excluding existing designs when maintaining this requirement. The acceptability criteria should only be the revenue service record of the equipment proposed.	6. These reference documents are intended as guidelines, if equipment has been designed to meet other standards which are a least as rigorous and the vendor can prove this, then it will be acceptable.
7	17-37	17.15.2	Last paragraph: delete this requirement.	See our comments to para. 9.3.5 and 9.1.4.	7. No.

CARBUILDER/SUPPLIER: [illegible]

SECTION TITLE: SYSTEMS REQUIREMENTS

SECTION NUMBER: 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	2-11	2.1.11(b)	The requirement to operate all low voltage equipment between 25 and 45 without damage. While standard components will operate over this range, continuous operation above 38 V for contactor coils will result in reduction of insulation life. The LVPS which supplies this voltage will have internal protective circuits to prevent this condition, per 2.3.1.1.(d).	Wide range continuous duty coils do not exist. Thousands of standard contactors have been used on similar transit systems without problems. To design a special contactor would be very costly for the authority and make future spare parts more difficult to obtain.	1. Requirements have been revised.
2	2-22	2.2.10.7	The vibration of any motor should be per the IEEE No. 11 rather than just the traction motors. The vibration on the floor is more a function of the car structure and cannot be measured by the motor suppliers.	To eliminate any future problems between car builder and equipment suppliers.	2. Measurement taken on car body structure, carbuilder ultimately responsible.
3	2-38	2.3.1.2	The electrical test requirement for the compressor motor test requires RPM. If the comressor is hermetically sealed, it is not possible to measure.	It is not possible to measure without making a special compressor.	3. Calculations permitted, address issue in proposal.
4	2-39	2.3.1.2(o)	The last paragraph prior to "Test Requirements" needs word clarification.	To avoid confusion and mis-interpretation.	4. Disagree.
-	2-39	2.3.1.2(o),b	The extreme test temperature bears no relation to any service operation.	Change the 125°/85° to the maximum ambient temperature of 110°, as specified in paragraph 2.1.4. The humidity ratio of 0.19 to be maintained. The 125°/85° would become the unit design rather than the 93°/72° of paragraph 7.4.1. This would cause larger, heavier and more costly equipment for no real benefit.	5. Requirements are as stated in Final RFTP.
6	2-40	2.3.1.2(o)h,2	Trip temperature cannot be measured on the high voltage link.	Delete item 2, trip temperature of ± 10°. Maintain only "No Damage" to unit or components.	6. Requirement revised.
7	2-42	2.3.1.3B,1	Shortridge Flow Hood has consistently demonstrated lower than actual air volumes in equipment of this type.	Device adds sufficient resistance to reduce the air volume in this application. Volume must be confirmed with standard hot wire velocity readings.	7. Disagree, no change.

CARBUILDER/SUPPLIER: STEEL SAFETY CORPORATION

SECTION TITLE: MATERIALS AND WORKMANSHIP

SECTION NUMBER: 17

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	17-15	17.9.6	Add solder specification Class VII.	This 45% silver braze is a standard for refrigeration tubing joints.	1. Requirement remains as stated in Final RFTP.
2	17-15	17.10.1(c)	Since most of the wire allowed in the specification has a temperature rating well above the 90°C column in the National Electric Code, the applicable column should be used.	De-rating the wire to the 90°C level is not necessary since the insulation has already been designed for higher levels. Using the full rating of the wire will reduce the weight and cost of the equipment.	2. No, want extra design margin.
3	17-16	17.10.2(b)	The specification restricts the stranding of wires to K or M which is extemely fine. The industry standard is I. The specification should allow the I stranding and only require K or M where extra flexibility is required for heavy cables.	Special runs of cable do not have to be made for most of the car wiring, thus reducing the cost of the equipment.	3. In general true; however, done to make up for stiffness from insulation.
4	17-16	17.10.3(a)	For a comparison on smoke density it is necessary to specify the method, wire gage, insulation wall thickness and voltage rating of the wire, (for example, a 2000 V wire produces almost twice as much smoke as 600 V rated wire for the same gage).	The optical density numbers are useless until other requirements are indicated and would generate data which could lead to an inferior wire being used.	4. Clarification provided in Final RFTP.
5	17-16	17.10.3(a)	Stability factor is actually part of a moisture absorbtion test. The method usually used for the ICEA S-66-524 (6.6.2) should be specified.	The method should be indicated so the authority can get comparative results.	5. Probably okay, will review.
6	17-23	17.11.7	The specification requires all terminal boards to be per MIL-T-55164A. This specification has a very limited selection, and requires special molding material. This paragraph should allow the use of commercial terminal boards, which have been used for years on transit systems, which have equal or greater electrical ratings but molded of phenolic or glass filled polyester.	It would greatly reduce the cost and improve the delivery for parts especially for spares at a later date. It would also allow the use of larger sizes for better current handling capacity.	6. Possibly okay, make a proposal.
7	17-23	17.11.9	Copper or bronze pads can not be silver soldered to control boxes without severe distortion. Stainless steel grounding pads welded to the enclosures are a much better way to achieve a non-corrosive ground pad on an enclosure.	Better quality enclosures.	7. For enclosure's safety pads, okay.

CARBUILDER/SUPPLIER : STONE SAFETY CORPORATION

SECTION TITLE : COMMENTS

SECTION NUMBER : SEVERAL

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
			We will exercize our option to ask for approval on the following items.		
1	2-11	2.1.11b	This paragraph requires operation of the low voltage system continuously at 45 volts. Since the low voltage supply is highly regulated with automatic shut-down at about the 40 V level to protect systems, our system will function continuously up to 40 V. At levels of 45 volts continuously, reduced life of some components will occur. We also take exception to the necessity of the L.V. control circuit to withstand trolley (600 V). application.		1. Changed to 42 VDC maximum. - Requirement remains for 600 VDC continuous application.
2	7-11	7.4.3.1	High pressure cut out will be 425 psig. Modulation pressure actuation will be 400 psig.		2. Provide detail information in proposal.
3	15-4 & 5	15.2.1	This paragraph addresses a "General purpose functional test system" Hewlett Packard model 3060A. Since this test device is of very limited use in testing our circuit boards, we would not supply such a device. This section also requires an environmental test chamber. Since our system is such a small part of the total car systems we would assume the prime contractor would supply this after reviewing all equipment used on the car, or possibly take exception to this test.		3. Requirement.
4	17-4	17.2.2 3rd para.	Fasteners inside the protected area of the evaporator section will be zinc plated steel.		4. Acceptable.
5	17-23	17.11.7	We intend to use fastons on the DC contactor coils, temperature control mother board, and refrigerant valves. These are standard devices which we purchase.		5. Not generally acceptable, provide details in proposal.
6		17.15.3	We consider our sensor to be a non-customer repairable device and not subject to referenced paragraphs. This is the same device as on previous contracts throughout the country.		6. Provide details in proposals.
7	17-38	17.15.3g	Since transistors with the TO220 case cannot be obtained in hermetically sealed cases we will use standard devices available.		7. Address in proposal.
8	17-38	17.15.3h	This requires all devices under 10 amperes to be JEDEC registered. In many cases the devices reliability is not consistent between manufacturers or the devices are just not available with a JEDEC number. In this case we use devices with non-registered numbers but specify at least two sources.		8. Address in proposal.
9	17-38	17.15.3j	This requires IC's to MIL-STD-883 or 100 hour burn-in Some of the standard IC's may not be available to this spec. The requirement for 100 hour burn-in including on car acceptance time is reasonable and we accept this.		9. Requirement remains.

CARBUILDER/SUPPLIER : STONE SAFETY CORPORATION

SECTION TITLE : COMMENTS

SECTION NUMBER : SEVERAL

EM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
10	17-39	17.15.4d	This requires IC's used in circuit boards costing over $100.00 to have sockets. This has been a constant source of problems in the past due to conformal coating (such as required in section f) getting into the sockets and causing intermittent contact especially after removal and re-inserting. Also to expose the leads of the IC's, defeats the purpose of the conformal coatings. Our experience has been with the few used, it is better to solder them into the board with oversize holes which allows easy removal in the unlikely event they fall. Stone Safety requests that the following comment be considered and included. Allow use of mild steel for the structural frames of subcontract equipment.		10. Deviations from this requirement are possible with LACTC approval. Submit details in proposal.

AS A POSSIBLE SUPPLIER TO SIEMENS-ALLIS AND BOMBARDIER

SECTION TITLE: AIR COMFORT SYSTEM

SECTION NUMBER: 7

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
7.3.1	7-5	5	Suetrak recommends that a sheath-type overhead heating element be specified rather than an "....open coil, resistance wire-type....."	The open coil, resistance wire-type heating element presents both personal safety and fire protection hazards, whereas the sheath-type element does not.	1. Requirement remains as written in Final RFTP. 2. Modular roof mounted equipment is required. 3. Requirement remains for an R-22 system.
7.4	7-6	1	The compressor and electric motor should both be mounted under the car rather than in the roof-mounted units.	This will help to maintain a lower profile for the rail car.	
7.4.1	7-8	4	We would suggest that the system use R-12 refrigerant, rather than R-22 refrigerant which is currently specified.	It has been Suetrak's experience that the use of R-12 refrigerant will better assure long-term reliability of the system.	

CARBUILDER/SUPPLIER: TRANSIT AMERICA INC.

SECTION TITLE: SYSTEMS REQUIREMENTS

SECTION NUMBER: 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	2-4 2-5	2.1.2	The specification requires that collision forces exceeding the static design loads be resisted without damage to structural joints. A limit must be placed on the maximum load in order to comply with this requirement.	Specification clarification.	1. Loads to be withstood are specified, but when these are exceeded, resulting failures must occur in a coordinated manner; failure of joints is not permitted, members must yield first.
2.	2-9	2.1.8	Elsewhere in the specification (Pages 2-32 and 2-33), reference is made to an AW4 load. AW4 load needs to be defined.	Specification clarification.	2. Definition provided in Final RFTP.
3.	2-11	2.2 c)	Reference is made to a "fully loaded" car. Is this AW1, AW2, or AW3?	Specification clarification.	3. Same as #2.
4.	2-13	2.2.3.1	See comment Number 3.		4. Same as #2.
	2-14 2-17	2.2.3.1 f) 2.2.8	Regarding service brakes, the specification states that the maximum allowable dead time between brake command and initial response shall be 0.2 seconds. Does this requirement apply to the pneumatic system or to the dynamic braking system (or to both)? Unless contactorless systems, such as 4QGTO are used, current technology will not comply with this requirement. (Present mode dead times are around 800ms.)	Specification clarification.	5. Requirements have been revised, see Final RFTP. — 6. (f)-Requirement is for individual devices, make a proposal on exceptions. (g)-Our requirement is reasonable.
6.	2-28 2-51	2.3.1.1 f) 2.3.1.4 d)(9)	The specification states that no leakage shall be allowed in the pneumatic system. Current industry standard allows a leakage rate of 5 psi/min.	Specification clarification.	
7.	2-33	2.3.1.2 h)(2)	For the truck fatigue test, the specification states that load phasing should be such as to produce maximum stresses. In order to avoid the possibility of producing an unnecessarily heavy truck, the load phasing should accurately simulate actual service conditions.	Optimize truck weight.	7. Actual service conditions can produce worst case. No change.

CARBUILDER/SUPPLIER : TRANSIT AMERICA INC.

SECTION TITLE : SYSTEMS REQUIREMENTS

SECTION NUMBER : 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
8.	2-43	2.3.1.3 a)(11)	This paragraph makes reference to a Section 3.4(j), which does not exist. Should the referenced section be 3.4 a)?	Specification clarification.	8. Yes.
9.	2-53	2.3.2.1	The specification requires the propulsion system MTBF to be 1400 hours. Current state-of-the-art is nearer to 600 hours.	To conform to current technology.	9. These requirements are necessary to achieve car availability of 95 percent.
10.	2-54	2.3.3.2	The maximum time to change-out a motor truck is not specified.	Specification clarification.	10. Four hours, see Final RFTP.
11.	2-56	2.3.4.2	The specification requires that a full scale mock-up of the car underfloor arrangement be constructed in order to determine optimal equipment and piping layout. Transit America customarily makes use of 1/8 scale mock-ups and has found these to eminently suit the intended purpose.	Increased flexibility.	11. A full scale mock-up is required.
12.	2-24	2.2.13.1	The specification states that all filters must be capable of being changed out within a maximum of 3 minutes. While for the majority of filters on a car, this may be true, for some filters, such as in the traction motor blowers and the evaporator blowers, times closer to 15 minutes are more realistic.	To make specification more practicable.	12. Identify and justify exceptions in proposal.
13.	2-53	2.3.2.1	The specification requires the friction braking system MTBF to be 4000 hours. Current state-of-the-art is closer to 1500 hours.	To conform to current technology.	13. Same as #9.
14.	2-54	2.3.3.2	The specification states that the maximum time to change out a traction motor and the largest windshield pane should be 4 person hours and 2 person hours, respectively. Experience shows that it takes about 6 man hours to change out a traction motor, and 3 man hours to change out a windshield.	To make specification more practicable.	14. RFTP changed to: - Eight hours for Traction Motor change out. The windshield will remain at two hours.

CARBUILDER/SUPPLIER : TRANSIT AMERI

SECTION TITLE: CAR BODY

SECTION NUMBER: 3

M #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	3-3	3.3	The second paragraph on this page states that the use of polyurethane is prohibited. Because Section 17.13.1 specifies the use of polyurethane paint, it is assumed that Section 3.3 refers to urethane foam insulation (also see Section 3.12.3).	Specification clarification.	1. Revised. See RFTP Volume I.
2.	3-4	3.4 a)	The specification requires that a completely equipped carbody with a "full live load" shall have no stress which exceeds 50% of yield. Under what loading conditions does this apply: AW1, AW2 or AW3?	Specification clarification.	2. Full load=135,000 lbs. See RFTP Volume I.
3.	3-4	3.4 b)	Under the specified end compression load, structural members inboard of the coupler anchors may not exceed 90% of the material's yield stress. Section 2.3.1.3 a)(8) states that under the same loading conditions, stresses may not exceed 100% of yield. If the former requirement is mandatory, it should be referenced under Section 2.3.1.3 a)(8).	Specification clarification.	3. This has been clarified.
4.	3-10	3.7.2	Is the "body sill" referred to in this paragraph the more commonly used "center sill"?	Specification clarification.	4. Generic name for longitudinal member.
5.	3-11	3.7.6	The second paragraph of this section states that corner post loads shall be reacted by "supporting members at the top of the windows". Because this loading necessarily must be transferred down the length of the car, above the doorways, it should be reacted by the roof rail, not the upper window frame.	Specification clarification.	5. Agree, could be referred to as roof rail.
6.	3-19	3.13.2	The use of a three-piece windshield is specified. The specification should be reworded to allow the use of a one-piece unit.	Product improvement.	6. RFTP has been revised to clarify requirements.

CARBUILDER/SUPPLIER : TRANSIT AMERICA INC.

SECTION TITLE : CAR BODY

SECTION NUMBER : 3

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
7.	3-20	3.13.2	In the second paragraph on this page, please clarify the meaning of "the horizontal view shall be a minimum of 90° above the line of sight."	Specification clarification.	7. Clarified, see Final RFTP Volume I.
8.	3-21	3.14	The specification states that the minimum seat depth shall be 20 inches. Seat depth is normally defined as the distance from the front edge of the seat to the intersection of the forward surface of the seat back with the seat cushion. Transit America's experience indicates that this value should be around 17".	To allow for a more comfortable seat.	8. Provide details in proposal.

CARBUILDER/SUPPLIER : TRANSIT AMERICA INC.

SECTION TITLE: COUPLERS AND DRAFT GEAR

SECTION NUMBER: 4

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	4-2	4.2.3	The specification states that the coupler and drawbar must each be capable of withstanding a buff or draft load of 100,000 LBF with no permanent deformation. Is the buff load applied by another coupler or by a solid object of irregular shape?	Specification clarification.	1. Another coupler.

CARBUILDER/SUPPLIER: TRANSIT [illegible] INC.

SECTION TITLE: OPERATOR'S CAB

SECTION NUMBER: 5

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	5-1	5.1	The mock-up referred to is specified in Section 2.3.4.1, not 2.3.2.1.	Correct a typographical error.	1. Corrected, see Volume I.
2.	5-7	5.3.16	The size and color of the exterior bypass indicator lamp needs to be specified.	Specification clarification.	2. See Volume I.

CARBUILDER/SUPPLIER: TRANSIT AMERICA INC.

SECTION TITLE: PASSENGER DOORS

SECTION NUMBER: 6

M #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	6-1	6.1.1	The specification states that doors may not be constructed using a cardboard sandwich. This is current industry standard and Transit America has supplied cars utilizing this form of construction for many years and has received no adverse comments.	To allow industry standard construction.	1. Do not want cardboard sandwich no change.
2.	6-3	6.2.2	The specification states that door opening and closing times shall be 1.5 ±.1 seconds and 2.0 ±.1 seconds, respectively. Transit America's experience with such short operating times has indicated that the doors do not operate smoothly and tend to "bump" at extreme stroke positions; this imparts increased loads on the linkages and often requires more frequent adjustment intervals. Therefore, it is recommended that the opening and closing times be increased to 3 seconds.	Improved reliability.	2. Required tolerances have been revised. See Volume I.

CARBUILDER/SUPPLIER: TRANSIT AMERICA

SECTION TITLE: AIR COMFORT SYSTEM

SECTION NUMBER: 7

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	7-1	7.2	The specification requires that fresh air be drawn through screened openings in each side of the unitized HVAC system. Transit America requests that the specification be reworded to allow air to be drawn from the pressurized condensing compartment prior to being passed over the condensing coils.	To allow alternative methods of HVAC system construction.	1. No, requirements as stated remain.
2.	7-3	7.2.3	The specification states that "the main air distribution ducts shall be constructed of stainless steel or aluminum arranged in a loop .....". Please clarify the meaning of "arranged in a loop".	Specification clarification.	2. Clarification provided, see Fina RFTP.
3.	7-5	7.3.1	It is required that overhead heater elements be of the open coil, resistance wire type. Permission is sought to allow the use of incalloy sheathed elements with sealed ends.	Allow alternative construction.	3. Provide in proposal information substantiating reliability and service proven criteria. 4. Requirement remains as stated.
4.	7-8	7.4.1	The specification requires the use of R-22 refrigerant. Transit America requests that the use of R-12 refrigerant also be allowed for the following reasons: 1. Ability to operate at much higher condensing temperatures. 2. Significantly lower operating pressures, hence reducing the possibility of system leakage and increasing overall reliability. 3. Favorable oil miscibility. 4. Less toxic than R-22. 5. Non-flammable and non-explosive. 6. Highly stable.	Allow alternative material.	5. Pressure relief valves are problematic. No change.
5.	7-11	7.4.3 h)	The specification states that the compressor-condenser section of the HVAC system shall be protected against explosion with a fusible plug. It is requested that consideration also be given to the use of a pressure relief valve for the same purpose.	A pressure relief valve would reseal itself when pressures reached a safe level, thus conserving refrigerant charge.	

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BUILDER/SUPPLIER: TRANSIT AMERICA INC.

SECTION TITLE: AIR COMFORT SYSTEM

SECTION NUMBER: 7

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
6.	7-12	7.5	The specification states: AMBIENT: Ta — INTERIOR: Ti Below 40°F (full heating required) — $68°F \leq Ti \leq 72°F$ Section 7.3 states that "if the exterior ambient temperature falls below 40°F, the heating system shall maintain a temperature in the car of not less than 28°F above the outside ambient temperature". Therefore, Section 7.5 needs to be modified as follows: AMBIENT: Ta — INTERIOR: Ti Below 40°F (full heating required) — $Ti \geq Ta + 28°F$	Specification clarification.	6. Requirement rewritten.

CARBUILDER/SUPPLIER : TRANSIT AMERICA INC.

SECTION TITLE : LIGHTING SYSTEM

SECTION NUMBER : 8

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	8-2	8.2.1	The specification states that "lamps shall have an average rated life in excess of 20,000 hours". Note that in order to achieve such a life, current technology requires a minimum of 3 hours of use per start.	Specification clarification.	1. This is acceptable.
2.	8-2	8.2.2	This portion of the specification requires that lamp ballasts be CBM/UL certified and operate under the temperature conditions specified in Section 2 (20°F to 110°F). In order to meet these requirements, low temperature ballasts will need to be employed (will start down to 0°F); however, the CBM certifies neither lamp nor ballast performance at low temperatures.	Specification clarification.	2. Lack of certification for operation below 20°F is acceptable.

CARBUILDER/SUPPLIER : TRANSIT AMERICA

SECTION TITLE : AUXILIARY ELECTRICAL EQUIPMENT

SECTION NUMBER : 9

M #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	9-5	9.1.5	The specification states that "a separate ground cable shall be run from each truck ground pad to the nearest carbody ground pad, there shall be two sets of pads for each truck, so that each carbody section is connected to that truck." The wording seems to imply that each truck must be grounded to both carbody sections, which is felt sure is not the intention of the specification.	Specification clarification.	1. Clarified, see Final RFTP.
2.	9-5	9.2	Transit America requests that consideration also be given to the use of a static inverter, which has the following advantages: 1. Reduced maintenance costs. 2. More efficient than motor alternators. 3. Lighter weight.	Allow alternative equipment.	2. No, a MA is required.
3.	9-8	9.3.6	The specification states that the maximum permitted voltage drop in the low voltage power supply is 4 volts. A 4V drop between any 2 cars will prevent any significant power transfer with 37V battery circuits. Hence, it is recommended that the maximum allowable voltage drop be limited to 2V.	Higher systems reliability.	3. The required maximum 4V drop is defined under unusual condition for the purpose of sizing the l voltage supply trainlines.

REBUILDER/SUPPLIER : TRANSIT AMERICA INC.

SECTION TITLE : PROPULSION SYSTEM CONTROL

SECTION NUMBER : 10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	10-2	10.2	The specification requires that traction motor field shunting be achieved by contactor control of the inductive field shunts. It is requested that consideration be given to the use of contactorless automatic field weakening, which requires no additional contactors or thyristors, with the result of increased reliability and, hence, lower maintenance costs.	Higher reliability and reduced maintenance.	1. Provide detailed information in proposal.
2.	10-3 10-11	10.2.2 10.7.2	The specification requires that the traction motor drive be resiliently mounted. There exist alternative parallel drive systems in which the gear unit is rigidly mounted to the axle and then to the truck frame through two resilient mounts. These have proven transit experience in the US, and it is requested that the specification be reworded to allow their use.	Allow alternative construction.	2. Same as #2.
3.	10-9	10.7.1	The specification requires that traction motors be "DC series wound, with interpoles and fully laminated magnetic circuit". It is requested that the use of solid rolled plate fabricated frames also be allowed, these having been used in transit applications for many years, and being rugged and reliable and service proven.	Allow alternative construction.	3. Frames need not be laminated. See Final RFTP.
4.	10-15	10.8	Regarding propulsion system packaging, the specification states that "all control and power cable terminations shall be made internal to the enclosures ....." Does this apply to industry standard multi-pin quick disconnects at the enclosure?	Specification clarification.	4. Yes.

CARBUILDER/SUPPLIER : TRANSIT AMERICA INC.

SECTION TITLE : TRUCK ASSEMBLIES

SECTION NUMBER : 11

M #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
5.	11-10	11.7	The specification states that the tolerance on the wheel seat diameter shall be -0.000" +0.001". This is an unnecessarily strict requirement, and Transit America recommends that tolerances be in accordance with AAR practices.	Increased flexibility.	5. Requirements remain unchanged.
6.	11-3	11.2	The specification states that the trucks' primary suspension shall be Chevron or Clouth (rolling ring?) elastomeric springs. Transit America requests that the specification be reworded to also allow the use of a suspension system utilizing steel leaf guiders with elastomeric bushings. With this type of suspension, the axle bearing adapter is connected to the truck frame via either one or two steel leaf springs; metal to metal contact is eliminated by the use of an elastomeric bushing at the leaf guider/ bearing adapter interface. The leaf spring permits controlled vertical movements of the wheel sets, and the stiffness of the elastomeric bushings is carefully selected to allow the wheel sets to yaw in order to negotiate curves with a minimum of flange contact. This system has been used on M-D type passenger railroad trucks for many years, with great success.	To allow alternative suspension systems.	6. Possibly acceptable, provide detail information in proposal.

CARBODY SUPPLIER: TRANSIT AMERICA INC.

SECTION TITLE: FRICTION BRAKE SYSTEM

SECTION NUMBER: 12

#	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	12-7	12.6.9 b)	A fourth item needs to be added to the list of conditions initiating an emergency brake application, viz, depressing the deadman pedal beyond the normal hold-down position; this will then bring the paragraph in agreement with Section 9.5.5.1.	Specification correction.	1. Requirements clarified.

CARBUILDER/SUPPLIER : TRANSIT AMERICA INC.

SECTION TITLE: VEHICLE COMMUNICATIONS

SECTION NUMBER: 13

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	13-9	13.8.1 b)	This paragraph refers to Section 2.12.4 for maintainability requirements. Specification section reference should be 2.2.13.	Specification correction.	1. Corrected.

CARBUILDER/SUPPLIER : [redacted]AMERICA INC.

SECTION TITLE : AUTOMATIC [redacted]N STOP

SECTION NUMBER : 14

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	14-1	14.3.1	The first paragraph of this section refers to a maximum design speed of 75 mph; Section 2.1 a) of the specification states that the maximum design speed shall be 65 mph.	Specification conflict.	1. This is not a conflict: One is design speed for the ATS equipment, and one for the vehicle in general.

CARBUILDER/SUPPLIER : TRANSIT AMERICA INC.

SECTION TITLE : MATERIALS AND WORKMANSHIP

SECTION NUMBER : 17

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	17-21	17.11.3	The fifth paragraph of this section states that wire cleats shall be no more than 1.5' apart. Transit America's standard spacing is 2.5', which has been demonstrated to be satisfactory over several decades.	Increased manufacturing flexibility.	1. Provide details in proposal for LACTC approval.
2.	17-26	17.11.18	Clarification is requested on the difference between the referenced "wireways" and the "wire ducts" mentioned in Section 17.11.3.	Specification clarification.	2. Ducts are enclosed, raceways ar open on one surface.
3.	17-34	17.14.3	The flammability performance criteria quoted are not in accordance with the latest ASTM specifications.	Specification correction.	3. Revised and corrected.
4.	17-4	17.2.3	The specification states that "all fasteners that are not stainless steel or aluminum shall be plated with cadmium of zinc." It is requested that phosphatizing treatments also be allowed on higher grade fasteners, which do not promote hydrogen embrittlement.	Allow alternative manufacture.	4. Reference to aluminum has been deleted. Alternative plating details sha be submitted in proposal.
5.	17-33	17.13.7	The specification requires that all underfloor equipment be painted. Permission is sought to allow the use of epoxy powder coating, which is now commercially available and offers the following advantages: * durable * corrosion and scratch resistant * offers dielectric protection * arc resistant	Allow alternative manufacturing methods.	5. Provide details in proposal. 6. Statement understood.
6.	17-36	17.15.2	Regarding electrical design criteria, the specification states that "transformers and inductors shall be de-rated 10% for current". It should be noted that transformer and inductor selection is also based on duty cycle.	Specification clarification.	

CARBUILDER/SUPPLIER: TRANSIT AMERICA INC.

SECTION TITLE: MATERIALS AND WORKMANSHIP

SECTION NUMBER: 17

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
7.	17-36	17.15.2	The specification states that "hermetically sealed, dry tantalum capacitors, in metal cases, shall be used in place of aluminum electrolytics ....". It should be noted that the latest aluminum electrolytic capacitors have lower leakage and higher quality under temperature ranges and characteristics comparable to tantalum capacitors.	Allow alternative hardware.	7. Are they service proven? Make proposal.

CARBUILDER/SUPPLIER : TRANSIT CONTROL SYSTEMS

SECTION TITLE : AIR COMFORT SYSTEM

SECTION NUMBER : 7

#	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	7-11	7.4.3.h	Protection against explosion shall be provided by a pressure relief valve, instead of fusible plug.	The primary advantage of the pressure relief valve (PRV) over the fusible plug is the PRV can reseal itself when pressures reach a safe level (thus saving the cost of replacing the fusible plug and refrigerant charge).-	1. It is our experience that the advantage does not out weigh the disadvantage of reduced reliability.
2	7-2	7.2.2	Filters shall be accessed from inside the car through the Recirculated Air Opening.	To access the filter from the outside means watertight panels must be removed and replaced over and over again. This would be very difficult to maintain the water-tight integrity of the access panels and would be much more time consuming and difficult.	2. Access from inside or outside is permitted, contractors choice.

CARBUILDER/SUPPLIER: TRANSIT CONTROL SYSTEMS

SECTION TITLE: AUXILIARY ELECTRICAL EQUIPMENT

SECTION NUMBER: 9

#	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	9-17	9.5.5.1.a and d	During normal operation, a momentary, inadvertent release of the Deadman Pedal would impose an irretrievable full service braking penalty. Provision should be made for rapid recovery of the Deadman function without penalty. Such as: "Unless a full service brake command is in effect and the train is stopped, releasing the Deadman Pedal with the cab in Controlling status shall sound an audible alert for three seconds. After which, an irretrievable full service brake command shall be in effect. The Deadman Pedal may be depressed during the audible alert interval without penalty".	Prevent inadvertent application of full service brakes during normal operation.	1. Requirements are as noted i Final RFTP.

CARBUILDER/SUPPLIER : TRANSIT CONTROL SYSTEMS

SECTION TITLE: PROPULSION SYSTEM AND CONTROL

SECTION NUMBER: 10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	10-8	10.16.14	This paragraph requires the Motion/No-Motion logic to be a part of the propulsion system electronics. The requirements for the speedometer and overspeed protection are not fully defined. Suggest the following: SPEED DETECTION SYSTEM The speed detection system shall provide fail safe detection of motion and no motion, vehicle speed and overspeed. The system shall be fed from battery power through a circuit breaker and operate from a dedicated power supply. A speed detection system shall be provided for each vehicle cab. a. MOTION-NO MOTION CIRCUITS The motion and no motion circuits are considered to encompass the speed sensors, the electronic circuitry and output relays used to indicate the appropriate signals. The entire functions associated with motion and no motion detection shall be fail safe so that no circuitry or component faults can cause a hazardous condition. The motion relay shall be energized when vehicle speed is below $3\ ^{+0}_{-1.5}$ mph. Motion and no motion shall be detected by two independant circuits utilizing signals from speed sensors on two of the vehicles axles.	Provides comprehensive definition of the speed sensing electronics and permits LACTC to make an independant evaluation of the proposed system.	1. Final RFTP language believed adequate.

CARBUILDER/SUPPLIER: TRANSIT CONTROL SYSTEMS

SECTION TITLE: PROPULSION AND SPEED CONTROL

SECTION NUMBER: 10

#	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1 cont.	10-8	10.16.14	a. MOTION-NO MOTION CIRCUITS (Continued...) The two speed detection systems shall be interlocked by car wiring to assure detection of vehicle motion. When one system senses motion and the other system senses no motion, the motion signal shall be predominant. This condition shall be annunciated by a "MOTION/ NO MOTION" annunciator. The annunciator shall not reset when car power is removed. The annunciator shall be resettable by maintenance personnel only. The motion and no motion relays shall have non-weldable contacts on vital signal type relays. A sealed bypass switch shall be provided in the electronic locker to bypass the function when necessary. When no motion is bypassed, the cab "BYPASS ACTIVATED" indicator shall be illuminated. b. SPEEDOMETER CIRCUITS The speedometer circuits shall be independant of the motion-no motion circuits except for the common tachometer input. Vehicle speed shall be displayed by a two (2) digit, seven segment indicator. The speedometer shall have a wheel wear adjustment in 0.5 inch increments from 26 to 28 inches. The speedometer shall be accurate to within 1 mph with proper wheel wear setting. c. OVERSPEED CIRCUITS The overspeed cut-off shall be 57 mph. When overspeed is detected, audible and visible warnings shall be annunciated in the operator's cab. After a time delay (adjustable 1 to 10 seconds) initially set at 5 seconds,		

CARBUILDER/SUPPLIER: TRANSIT CONTROL SYSTEMS

SECTION TITLE: PROPULSION SYSTEM AND SPEED CONTROL

SECTION NUMBER: 10

M #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONS
1 Cont.	10-8	10.16.14	c. OVERSPEED CIRCUITS (Continued ...) irretrievable full service brakes shall be applied. If the overspeed condition is corrected prior to the time out, the audible and visual warnings shall cease and no braking penalty shall be imposed. The overspeed circuits in the speed detection system shall be interlocked so that an overspeed detected in either unit shall be annunciated. The overspeed circuits shall utilize the same wheel wear adjustment provided for the speedometer. Overspeed braking penalty shall be imposed by de-energizing a relay with non-weldable contacts on a vital signal type relay.		

CARBUILDER/SUPPLIER: TRANSIT CONTROL SYSTEMS

SECTION TITLE: VEHICLE COMMUNICATIONS

SECTION NUMBER: 13

#	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	13-2	13.2.3	The last paragraph of 13.2.3 implies a separate cab paging speaker for the passenger intercom function. Suggest the following paragraphs be added; "With PASS IC mode selected, communications between the train operator and all energized passenger intercom stations shall be via the handset". "The train operator may select the RADIO mode, without resetting any energized passenger intercom stations, to communicate with Central Control. Under these conditions, passenger intercom audio will be transferred to the intercom paging speaker. Train operator and Central Control conversation shall not be heard at any energized passenger intercom station." "Each Passenger Intercom Station shall incorporate compression circuitry with a minimum range of 30 dB to provide maximum transmission intelligibility from three feet from the microphone, on axis."	This change permits the train operator to discuss an unusual or emergency situation with Central Control. The addition of compression circuitry permits intelligibility of conversation with a passenger in a wheel chair.	1. What is required in Final RFTP is per LACTC policy.
2	13-3	13.2.4	Suggest the Digital Data system incorporate six mechanical alarms.	Provides future capability for automatic transmission of mechanical alarm conditions.	2. Digital Data system is under a different procurement. Will pass on your comments.

CARBUILDER/SUPPLIER: TRANSIT CONTROL SYSTEMS

SECTION TITLE: VEHICLE COMMUNICATIONS

SECTION NUMBER: 13

#	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
3	13-3	13.3	This paragraph requires a power supply to "power LACTC furnished equipment and no other loads". The handset, amplifiers and mode selection circuits are primarily a part of the Public Address and Intercom sub-systems. Strict compliance with this paragraph would require isolation between the CCH elements and the P.A., I.C. Control and Logic circuits. Recommend this paragraph be changed to read: "power LACTC furnished Radio, Digital Data System and AVL only".	Permits a separate power source for the P.A. and I.C. sub-systems.	3. If comment is understood, then we believe this was our intention. 4. Will review.
4	13-6	13.5.2.b	Requires "an enclosure of .5 cubic foot volume or larger". This size enclosure is unnecessarily larger than required to meet all the directivity, fidelity and radiation requirements listed elsewhere in the specification. Recommmend: "The speaker, in its enclosure, shall be subjected to a qualification test to assure compliance with this Specification".	Permits greater flexibility in selecting speaker locations to provide sound coverage.	5. Agree with comment.
5	13-6	13.5.2.f	Since two paging speakers are required in each cab, this paragraph should refer to "paging speakers".	Clarification of specification.	6. Will consider, provide details ir proposal
6	13-7	13.5.3.b	Suggest this paragraph be modified to permit separate power amplifiers for the internal and external speakers.	Added flexibility and reliability.	

CARBUILDER/SUPPLIER: TRANSIT CONTROL SYSTEMS

SECTION TITLE: VEHICLE COMMUNICATIONS

SECTION NUMBER: 13

M #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
7	13-7	13.5.3.e	This paragraph should refer to the "Radio Paging Speaker".	Clarification of specification.	7. Agree.
8	13-10	13.8.3	Suggest the following paragraph be added; "Public Address and Intercom control and signaling shall be by a voltage superimposed on the audio trainlines. Signaling and control functions shall not cause audible clicks or objectionable noise in the Public Address or Intercom Function ." "All trainline shields shall be grounded at a single point in the car with controlling cab."	Trainline economy and shield integrity.	8. Present language believed adequate.

CARBUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: SYSTEMS REQUIREMENTS

SECTION NUMBER: 2

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
1.	2-2	2.1.1.1	The requirements of this section are excessive as the driver shall still be considered as an active element of the control system.	These requirements will result in an unreliable, however safe, car.	1. Withdrawn by UTDC.
2.	2-3	2.1.1.2 (b)	Delete this section.	Same as 2.1.1.1 above.	2. Withdrawn by UTDC.
3.	2-6	2.1.4 (d)	Change "3" to "1.5".	The specified level is not practical.	3. Requirements revised.
4.		2.1.4 (h)	Delete the section and replace by "The car shall not produce EMI in excess of that shown by curve No. 1 of Figure 2-10 of MIL STD-461B for broadband interference.	The section as written could not be enforced.	4. Requirements revised.
					5. Requirement revised.
5.	2-7	2.1.6 (a)	Reduce overall length of car over anticlimbers from 87 ft. 0 in. to 86 ft. 8 in.	Reduced length will allow introduction of existing car design with subsequent cost reduction to LACTC.	6. Same as above.
6.	2-8	2.1.6 (b)	Reduce overall length of car over coupler faces from 90 ft. 0 in. to 88 ft. 6 in.	Existing design utilizes a tapered end car end, reducing the coupler to anti-climber overhang to a minimum.	7. Requirement revised.
7.	2-8	2.1.6 (f)	Change truck center to center dimension to give a range of location from 31 ft. 0 in. to 28 ft. 4 in.	Since we have not yet received a clearance envelope diagram, we recommend that this dimension not be fixed at this time to allow use of existing design cars with subsequent cost reduction.	8. No change, governed by GO143 and present Design and Performance Criteria.
8.	2-8	2.1.6 (h)	Increase height of power collector from 12 ft. 3 in. to 12 ft. 7 in.	)	9. Same as above.
9.	2-8	2.1.6 (j)	Increase height of top of roof equipment from rail to 12 ft. 5 in. from 12 ft. 0 in.	)Height increases are required to utilize)existing car designs with subsequent cost)reduction to LACTC.	10. Same as above.
10.	2-8	2.1.6 (k)	Increase height of top of roof equipment (dynamic) from 12 ft. 1 1/2 in. to 12 ft. 8 1/2 in.	)	11. Same as above.
11.	2-8	2.1.6 (l)	Increase height of car floor from 39 in. ± 3/8 in. to 40 in. ± 3/8 in.	)	

BUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: SYSTEMS REQUIREMENTS

SECTION NUMBER: 2

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
12.	2-8	2.1.6 (n)	Decrease undercar equipment running clearance from 8 in. to 6 in.	It is impractical to maintain this dimension with the specified floor height and with proven undercar propulsion equipment.	12. Provide proposed alternative for review.
13.	2-8	2.1.6 (p)	Reduce the height from floor to ceiling in the articulation joint from 6 ft. 9 in. to 6 ft. 8 1/2 in.	Reduction in height is required to ensure adequate clearance between the center truck and articulation frame in all degrees of car/truck movement.	13-15. Requirements revised.
14.	2-8	2.1.6 (q)	Reduce the height from the floor to the headlining of the car from 6 ft. 11 in. to 6 ft. 9 3/4 in.	Existing designs use a flat ceiling with no drop for the air conditioning unit or ducting giving improved asthetic appeal and cost reduction.	
15.	2-8	2.1.6 (s)	Reduce height of door opening from 6 ft. 8 in. to 6 ft. 7 in.	Reduced height will allow use of existing designs with subsequent cost reduction to LACTC	
16.	2-9	2.1.7	Reduce seated passenger load from 76 pass. to 75 pass.	For ease of maintenance the ECU & radio equipment is installed in full height locker inside the car reducing seating capacity by 1 seat.	16. No, want 76.
17.	2-10	2.1.11 (a)	In the second line of the second paragraph, delete "propulsion system".	If LACTC requires rheostatic braking at less than 525 volts, the propulsion system cannot shut down at that voltage.	17. Make a proposal.
18.	2-10	2.1.11(b) (i)	Delete the words "charging" and "at the battery terminals" in the first two lines.	The battery cannot be fully recharged in a reasonable time at this voltage.	18. Okay as is.
19.		(ii)	Delete the words "including continuous...supply level" in the third and fourth lines of the second paragraph.	Such a requirement is not practical.	19. Requirement remains. 20. No, G0143 requirement.
20.	2-11	2.2 (b)	Change the words "full load" to "AW2" in the third line.	This is necessary to be unambiguous and consistent with the definitions of section 2.1.8.	21. Withdrawn by UTDC
21.	2-13	2.2.2	Delete the last sentence of the first paragraph.	The provision for overspeed protection is already adequately described in the second paragraph.	22. Requirements revised.
22.	2-13	2.2.3.1(a)	Change "0.1" to "0.2" in the last line.	If a step change of 0.2 is acceptable in acceleration, then the same level should be acceptable in braking. Smaller step changes will require more complex, heavier equipment.	

CARBUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: SYSTEMS REQUIREMENTS

SECTION NUMBER: 2

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
23.	2-14	2.2.3.2	Replace the words "full load" with "AW2" in line 7.	This is necessary to be unambiguous and consistent with the definitions of section 2.1.8.	23, No, G0143 requirement.
24.	2-15	2.2.4.3	Delete the words "from the affected truck" in line 5.	The requirement for per truck slide control will result in a less reliable, more complicated vehicle.	24. Need creeping capability for severe slippery grades with single car operation.
25.	2-17	2.2.7	Change the words "full load" to "AW2" in the third line.	Same as 2.2.3.2. above.	25. No, G0143 requires this.
26.	2-17	2.2.8	Change "200" to "500" in the second line.	The requirement for such short mode change dead times will result in added complications in the control circuits which will produce lower reliability and higher maintenance.	26. Mode charge dead time has been revised.
27.	2-23	2.2.12	Change "2-1" to "2-2" and add a copy of Fig. 2-10 from MIL std-461B as page 2-58, Figure 2-2.	The curve of interference is otherwise missing from the specification.	27. Clarification provided in Final RFTP.
28.	2-4	2.1.2	Change 3.0 mph to 2.5 mph.	The energy absorption capability of any coupler is dependent on the allowable deflection of the absorption element (i.e. 2 1/2") and the required release load (i.e. 75,000 lbs.).	28. Agree with your reasoning, but want the standard 3 mph.
29.	2-4	2.1.2	Change "solid object" to "another car".	To make this requirement consistent with that of section 4.2.4.	29. Clarification provided in Final RFTP.
30.	2-20	2.2.10.1(e)	Change the wording to "All measurements...4ft. above the A or B car floors, but not in the articulation area, in a fully...measurements"	It is not economically feasible to insulate the articulation joint area to the same extent as the car body structures, especially if the weight circuits and flammability/smoke emission criteria are to be met.	30. This is what we want, make a proposal.
31.	2-20	2.2.10.3	CCRI interprets this requirement to apply to a stationary vehicle.		31. Clarification provided in Final RFTP.
32.	2-20	2.2.10.4	Change the sentence to "For this test, the car shall be operated on open tie and ballast track with newly ground continuously welded rail, FRA Class 6 standard, at a location approved by LACTC".	It is not economically feasible to meet the specified noise levels on jointed rail track of poor quality.	32. Clarification provided in Final RFTP.

CARBUILDER/SHIPPER: TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: SYSTEMS REQUIREMENTS

SECTION NUMBER: 2

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
33.	2-21	2.2.10.5	Delete this section in its entirety.	Equipment noise prior to its installation on the vehicle is a redundant specification. The cost of conducting these tests and/or meeting the stated criteria are of no benefit to LACTC as long as the requirements of paragraphs 2.2.10.3 and 2.2.10.4 are met.	33. There is a very definite benefit, because once the equipment is on the car, its too late. Willing to pay for, everyone bids on the same basis.
34.	2-22	2.2.10.6	Delete this paragraph.	Noise analyses are approximate at best and in no way guarantee that the criteria of paragraphs 2.2.10.3 and 2.2.10.4 will be met. Experience has shown, over numerous previous vehicle designs, that sound attention techniques are best developed experimentally on mock-ups and on the pilot cars.	34. We appreciate they are approximate, we are looking for early detection of gross problems, we are not asking for guarantees--Once the equipment is on the car, it's too late.
35.	2-22	2.2.10.11 (d)	The requirements of this paragraph are unnecessarily onerous and should be deleted.	Compliance with this requirement will necessitate intricate shimming of each primary suspension which will be costly and add to LACTC maintenance burden. Furthermore, since the load distribution within the cars will never be uniform, adherence to this requirement is futile.	35. We believe that they are necessary for proper protection against derailment and wear--shimming won't be required if manufacturing tolerances are held tight.
36.	2-24	2.2.13.3(c)	This requirement is too vague and should be applied to specific subsystems or components.	As currently written, this requirement implies that any and all failures must be indicated which is clearly impractical and quite undesirable not to mention uneconomical.	36. It does not require annunciation of all failures. It is a checklist for good engineering practice.
37.	2-30	2.3.1.2.(d) (8)	Delete this requirement.	There is no merit to making this measurement - see comment against paragraph 2.2.10.5.	37. Same answer as Item 33.

CARBUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: SYSTEMS REQUIREMENTS

SECTION NUMBER: 2

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
38.	2-54	2.3.3.2	It is not clear whether the requirement to change out a traction motor with 4 person hours is for a monomotor or bimotor option. This requirement should be restated as 4 person hours per motor for the bimotor option and 6 hours per motor for the monomotor option. Delete "(on car)".	It is unreasonable to expect a monomotor to be changed out within the same time period as a single bimotor since the former requires prior removal of two gearboxes and disassembly of four mounting bolts. Owing to the very limited undercar space, removal of the traction motor without first detrucking is neither feasible nor advisable.	38. Motor removal requirement is with prior truck removal and for bimotor or monomotor.
39.	2-55	2.3.4.1	Delete the requirement for the front end mock-up to be available "not later than six months after Award of Contract".	Since this mock-up is to contain actual components including control console, destination signs and a complete door system, the lead time to select, procure and install these components will be at least 15 months. The intent of this clause is in no way compromised by deleting this requirement since LACTC will still have an opportunity to inspect and approve the mock up prior to design finalization and its release to production.	39. Will allow the use of simulations of individual components, with change out when production pieces are available.
40.	2-14	2.2.3.1 (f)	Delete this section.	Dead times should all be described in one section, in this case, section 2.2.8.	40. Section removed.

CARBUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: LIGHTING SYSTEM

SECTION NUMBER: 8

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
41.	8-1	8.1.1	Change "20" to "10" in the second and third paragraphs.	The level given is excessive, especially when passengers move from a bright interior to a dark outdoor ambient.	41. Will have illuminated station platforms, plus 20-foot candles will appear dim compared to interior and ambient level.
42.	8-2	8.2.1	Delete the words "with standard bi-pins" in the 8th line of the second paragraph.	This will allow the use of more reliable instant start lamps.	42. If proposed bulbs meet all other criteria, including U.S. supply, then provide details in proposal for our review.

CARBUILDER/SHIPPER: [illegible]AN TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: FRICTION BRAKE SYSTEM

SECTION NUMBER: 12

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
43.	12-13	12.7.6	Delete "WABCO D-4S"	The compliance of the air supply units need not be based on similarity with another unit.	43. Requirement remains unchanged.
44.	12-14	12.7.6 (d)	Change to "The air supply unit shall be designed to provide discharge compressed air within 10°F of ambient air temperature".	The aftercooler need not be the only or primary source of moisture removal and other more efficient and reliable methods incorporating oil/water separations as well as dessicant dryers can achieve the required moisture removal even when temperatures are as high as 25°F above ambient at the aftercooler discharge.	44. Provide details in your proposal for LACTC review.

CARBUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: COUPLERS AND DRAFT GEAR

SECTION NUMBER: 4

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
45.	4-2	4.2.5	Change to "The couplers and drawbar shall each be able to withstand a buff or draft load of 100,000 lb. with no permanent deformation exclusive of the automatic release/energy absorption feature".	The automatic release/energy absorption feature is required to collapse and linearly absorb and dissipate energy at 75,000 lbs.	45. See Volume I.
46.	4-2	4.2.4	Change 3.0 mph to 2.5 mph.	The energy absorption capability of any coupler is dependent on the allowable deflection of the absorption element (i.e. 2 1/2") and the required release load (i.e. 75,000 lbs.).	46. See Volume I.

CARBUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: AUTOMATIC TRAIN STOP

SECTION NUMBER: 14

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
47.	14-1	14.1	The system described is extremely outdated technology. The system description should be restricted to a performance description only, and Contractors should be allowed to offer smaller, lighter and less expensive systems in lieu of that described.	The benefit to LACTC would be a less expensive, lighter system on the cars.	47. This is what is required.

CARBUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: VEHICLE COMMUNICATIONS

SECTION NUMBER: 13

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
48.	13-3	13.2.4	The last paragraph does not give sufficient data for the Contractor to satisfactorily estimate the work involved in establishing the interface between the LACTC supplied equipment and the Contractor supplied equipment.		48. Information will be provided when available. 49. Requirements remain as written in Final RFTP.
49.	13-5	13.5.2	Delete "shall be Atlas...and" in the first line.	The two requirements for speakers are conflicting and the Contractor should be allowed to obtain competitive prices on speakers based on performance requirements only.	50. Make a proposal.
50.	13-9	13.8.1	Reword the specification to "communications apparatus shall be installed in a locker inside the car body and for..."	Latitude in location of equipment in a locker will improve access for maintenance and reduce possibility of dirt ingress.	51. No, we want extra assurance against noise.
51.	13-10	13.8.2 (b)	Delete this section.	The requirement for separate conduits for communications only adds unnecessary weight to the car.	52. Contractor will be required to adjust for proper SWR, include cost in your bid.
52.	13-10	13.8.2 (c)	Delete the second sentence.	The Contractor cannot be responsible for the performance of LACTC supplied equipment.	53. Make a proposal.
53.	13-11	13.12	Delete the second sentence.	AAR-standard housing or mounting will not be available for all Contractor supplied components.	

CARBUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: TRUCK ASSEMBLIES

SECTION NUMBER: 11

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
54.	11-4	11.2.2	In the 5th paragraph, delete "and shall be readily accessible".	Contradiction with the requirement of the levelling valve being located as close as possible to the centreline of the car.	54. Accessible from under car okay.
55.	11-6	11.3.2	Delete section 11.3.2.	In conventional street car truck designs, the truck bolster is connected to the carbody via a slew ring which inherently has the strength and the required factor of safety of supporting a truck assembly when the carbody is lifted.	55. Withdrawn by UTDC.
56.	11-8	11.6.1	Change to "The treads shall not show total indicator readings greater than .015 inch."	.015 inch is the standard concentrity tolerance of SAB-V wheels.	56. SAB-V wheel requirements have been deleted.
57.	11-9	11.6.2	Change paragraph 2 to "Runout shall be measured on the wheel rims and shall not exceed .003 inch TIR excluding wheel rim tolerance.	The measurement of runout at the centre and ends of an axle is impractical when all components are pressed on.	57. Specification says "As near as possible" for measurement.
58.					58. No, wheel rim (tread) TIR is .012" as above.

CARBUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: PASSEGBER DOORS

SECTION NUMBER: 6

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
59.	6-4	6.2.4 (b)	Delete section (b).	The detection of the obstruction detection system failure requires an additional detection system resulting in a decrease of the overall system reliability. In addition, the requirement is unnecessary since the door closing forces are limited to a maximum value and sensitive edges have sufficient flexibility to permit the withdrawal of the captured object. Therefore, sensitive edge failure will not result in any hazard to passengers and when a failure occurs, the door can be locked out of service until repairs are made.	59. - We are not requiring a detection of a failure, rather assurance the doors will not fully close, lock and satisfy door/ propulsion interlock feature. - Extremity defined in Volume I.
60.	6-10	6.4.7	Reword the specification to "A red door-out-of-service indicator light shall be located adjacent to the door in a location agreeable to LACTC."	Latitude in panel location will result in improved visibility to all passengers and increase space in door header area.	60. Provide a proposal, but want light located generally above door.
61.	6-11	6.4.8 (d)	Reword the specification to "The out-of-service switch shall be located adjacent to the door..."	Relocation of switch results in improved space in door header area.	61. Make a proposal.

CARBUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: AUXILIARY ELECTRICAL EQUIPMENT

SECTION NUMBER: 9

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
62.	9-4	9.1.3	Delete the last paragraph of this section referring to high speed circuit breakers.	High speed circuit breakers are expensive in first cost and to maintain and add excessive weight to the vehicle.	62. True they are more costly than slow ineffective breakers, but want protection.
63.	9-5	9.1.5	Change the second word from "axle" to "truck".	The requirement for safety ground brushes on each axle is excessive and will result in increased vehicle capital and maintenance costs. Inside frame truck designs require end of axle ground brushes, which can accept only one brush. Therefore, brushes will be required on both ends of all axles.	63. Requirement remains unchanged.
64.	9-6	9.3	The low voltage power system should allow the use of a dedicated AC powered battery charger and a separate DC power supply. The battery should be normally isolated from the low voltage system and should be connected only on failure of the DC power supply.	This system results in lower vehicle weight and ensures that the battery is maintained at the highest possible state of charge at all times.	64. We question the claim of a weight savings and ability to quickly switch from M.A. to batteries without interruption. Requirement remains unchanged. 65. Requirement revised.
65.	9-8	9.3.3	Change "3" to "5".	The requirement for low ripple will require the use of larage, heavy filter components if a simple DC power supply is used. Such a system is the lowest maintenance alternative of several.	66. Actually an aid for maintenance. Requirement remains unchanged.
66.	9-8	9.3.5	Delete the second and third paragraphs.	The requirement for low voltage ground detectors is excessive and results in higher capital and maintenance costs.	67. Voltage can be adjusted to maximize charging.
67.	9-9	9.4	The requirements of the last sentence cannot be met with a constant voltage charging system		68. Must be as close as possible for adequate electrical protection, make a proposal.
68.	9-10	9.4.3	The requirement for the battery circuit breaker inside the battery box is not practical.	Mounting the breaker closer to but not in the battery box results in a more convenient arrangement for LACTC service personnel.	69. Second paragraph adequately describes requirements.
69.	9-17	9.5.5.1	This section should require that all electrical components shall be mounted above the floor.	The benefit to LACTC will be greater reliability and lower maintenance costs.	70. Description adequate as is--no change.
70.	9-20	9.5.5.3	The description of the reverser switch is inconsistant as it does not allow for trainline		

CARBUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: CAR BODY

SECTION NUMBER: 3

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
71.	3-2	3.3 (6)	In sentence 2, delete "or exceed".	1) The Contractor's only obligation is to meet RFTP requirements. 2) To avoid disagreement in interpretation of the RFTP.	71. Contractor is permitted to exceed specification requirements.
72.	3-3	3.2 (2)	Add a sentence: "Polyurethane based painting systems on the vehicle exterior are acceptable."	These painting systems, or modifications thereof, e.g. acrylic-polyurethane, are the most durable types.	72. Polyurethane based paint systems are acceptable.
73.	3-3	3.2 (3)	Delete entire paragraph.	It is ambiguous. Does it include welded sections?	
74.	3-3	3.2 (4)	Delete	Covered elsewhere.	73. Interchangeability is of prime importance.
75.	3-3	3.2 (7)	Delete or provide for air-tight seal-welded enclosures.	If no water or air can enter, no corrosion can take place.	
76.	3-3	3.3 (8)	Change to: "...be .25 inch in 3 feet over the flat portions of the sides of the carbody sections".	1) The required .06" flatness level is not attainable on a fusion and resistance welded structure, even after flame straightening with magnetic clamps. 2) The deleted sentence portion refers to sections that are not flat. If a surface is not flat, then it must be curved and clearly one does not gauge a curved surface with a straight-edge.	74. Remains unchanged. 75. Written as based on experience--no change. 76. Disagree, 1/4 inch is excessive. Agree about curved sections.
77.	3-4	3.4	Change to: "Under the following specified loadcases, the specified or proposed and approved, allowable stresses shall not be exceeded".	1) It removes the reference to trucks, which have entirely different loading and allowable stress criteria. 2) To covers the entire carbody structure, not just "major structural components".	77. Record: "Under the following loadings, the specified stresses shall not be exceeded:"
78.	3-4	3.4 (a)	Change "variation" to "stress amplitude". Change "load variation" to "load fluctuation".	Fatigure failures in welded structures generally occur first at welds, therefore, a code of allowabe stresses for welds must be provided. This is more common terminology.	78. Okay as is.
79.			Add: "Allowable stresses at and near welds shall conform to the limitations of AWS D1.1 84 Section 9, "Design of New Bridges".	"...full live load..." is not descriptive.	79. "Full live load" Policy, See S2.1.7 (e).
80.			Change the first sentence to "At a weight corresponding to AW3, carbody structure stresses shall not exceed 50%..."		80. Same as number 79.

CARBUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: CAR BODY

SECTION NUMBER: 3

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
81.	3-2	3.3	Reword the specification to "The articulation shall be designed to reduce the possibility of accumulation..."	The portal area is designed with adequate clearances to ensure no passenger entrapment through all degrees of car movement and as such is not sealed to prevent trash accumulation behind the panels.	81. No, do not want any dirt accumulated, causing excessive wear and noise.
82.	3-9	3.7.1	Delete the word "removeable" from the anticlimber.	)For strength requirements, the anticlimber)is an integral part of the end underframe)and is formed from a 1 in. deep rolled	82. Requirements have been revised.
83.	3-9	3.7.1	Reduce the anticlimber rib depth from 2 3/4 in. to 1 in.	)channel section with matching)top and bottom flanges.	83. Requirement remains.
84.	3-13	3.8.3	Increase height of side skirts to a 10 1/2 in. constant dimension from 8 in. and 10 in. as specified.	Raising the skirt heights will ensure asthetic continuity of body lines and adequate clearance during all degrees of car body movement.	84. Provide details in proposal.
85.	3-15	3.10	Change flooring to 1/2 in. thick plywood from 3/4 in. thick and 0.025 in. thick aluminum from 0.016 thick stainless steel.	A cost reduction will accrue to LACTC in the use of an existing 1/2 in. aluminum plymetal floor with a corrugated steel sub floor to meet end load requirements.	85. Construction method alternative has been provided. One hour burn requirement remains.
86.	3-17	3.11.2	Add an optional floor to ceiling one piece panel incorporating the window surround. Material to be 1/8 in. thick fiberglass reinforced polyester or approved equal as specified.	Use of one piece panels will reduce the number of joints in the car body to improve appearance and facilitate cleaning.	86. Provide details in proposal.
87.	3-19	3.13	Reword the specification to "All windows shall be of the aluminum framed type securely mounted to the car body structure" in place of the rubber glazing specified.	))))Use of aluminum framed windows deletes the)interior window mask and a possible dirt	87. Provide details in proposal.
88.	3-19	3.13.1	Reword the specification to "One side window on each side in each body section shall be openable, outward by passengers in an emergency. The windows shall be hinged and captive and shall not fall out on the street after being pushed out. Side windows shall meet the requirements of FMVSS 217."	)trap. Hinged windows are captive and will)not fall out if inadvertantly opened.)FMVSS defines the push out and retention)forces required for side windows.)))))))	88. Push out requirement deleted.

CARBUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: CAR BODY

SECTION NUMBER: 3

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
89.	3-19	3.13.2	Reword the specification to "A three piece windshield shall be provided where possible. Carbuilders supplying tapered front cars shall supply a windshield approx. 1/2 the width of the car."	Single windshield on tapered front cars will allow use of existing design with cost reduction to LACTC.	89. Requirement revised, see Final RFTP, Volume I.
90.	3-19	3.13.2	Reword the specification to "The windshield shall meet the impact requirements of a 4 lb. object at 50 mph and shall be retained in the frame. The glass shall be designed to minimize flying glass shards in the event of breakage."	Test results are available for a 4 lb. object at 50 mph resulting in reduced weight and cost to LACTC.	90. Requirement revised, see Final RFTP, Volume I.
91.	3-20	3.13.3	Reword the specification to "The cab side window shall meet the impact requirement of a 4 lb. object at 50 mph and shall be retained in the frame. The glass shall be designed to minimize flying glass shards in the event of breakage."	Change in specification will result in weight and cost saving to LACTC.	91. Same as #90.
92.	3-20	3.14	Reduce seating capacity from 76 to 75 passengers.	The seating capacity is reduced in order to install the ECU and radio equipment in a protected easily accessible locker inside the car body.	92. No. Also not necessary for radio to be in locker. 93. Revised to be same as maintenance key.
93.	3-21	3.14.1	Change the specification to: "Underseat boxes shall be equipped with a lock operated by the maintenance or crew keys as required."	Standardization of locks results in cost savings to LACTC.	94. Okay, see Final RFTP Volume I.
94.	3-23	3.16.2	Add to the specification "Stanchions shall be clad with stainless steel or shall be seamless stainless steel tube with equivalent diameter and surface finish."	Improved appearance and product life.	

CARBUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: OPERATOR'S CAB

SECTION NUMBER: 5

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
95.	5-4	5.3.11	Add to the specification "wiper drive units shall be operated electrically or continuously variable speed air operated with electric intermittent wipe function."	Introduction of air operation gives greater freedom in component selection and reduces costs.	95. No, commission wants electric.

CARBUILDER/SHIPYARD: URBAN TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: PROPULSION SYSTEM CONTROL

SECTION NUMBER: 10

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
96.	10-1	10.2	(a) Add the words "or rate feedback" after "load weighed" in the fifth line of the first paragraph.	The exclusion of rate feedback systems would otherwise preclude several viable traction suppliers.	96. No--doesn't work for everyone.
97.			(b) Delete the words "Cam type" in the third line of the second paragraph.	Reason as in (a) above.	97. Requirements revised.
98.			(c) Add the words "in chopper systems" at the end of the last sentance of the second paragraph.	Line filtering would only add excessive car weight to a switched resistor system.	98. Requirements revised. 99. Requirement revised. 100. Same as #97.
99.	10-2	10.2	Delete the last paragraph of this section.	The exclusion of separately excited traction motors precludes the provision of the most energy efficient regenerative braking systems	101. Same as #96. 102. Same as #98.
100.	10-3	10.2.1.3	Same as 10.2 (b) above.		103. This is what is required, no change.
101.	10-3	10.2.2	Same as 10.2, page 10-2 above.		
102.	10-4	10.4.1	Delete this section. Same as 10.2 (c) above.		104. Same as #24, no change.
103.	10-5	10.6.3	Delete "for each truck" in the second line.	The requirement for brake control units for each truck is excessive and will result in increased capital and maintenance costs.	105. Same as #62.
104.	10-7	10.6.9	Delete the words "on a per truck basis or" in the last sentance of the first paragraph.	The requirement for per truck wheel slide control results in lower reliability and higher capital and maintenance costs.	106. Revised. 107. Disagree, requirement remains.
105.	10-7	10.6.11	In the fifth line, delete "at least a combination of" and "and an...circuit breaker".	Same as section 9.1.3 above.	108. Requirement remains as stated in Final RFTP.
106.	10-9	10.7.1	In line 7 change "exited" to "excited".	Correct spelling error.	
107.	10-13	10.7.6	Delete the word "non-metallic" in line 11.	A grounded metallic box is safer for maintenance personnel in case of a fault.	
108.	10-14	10.7.7	Change "250" to "1000" in the first line on the page.	The lower current limit requires a larger, heavier limiting resistor.	

-201 BUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION LTD.

SECTION TITLE: SYSTEM REQUIREMENTS

SECTION NUMBER: 2

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
109.	2-6	2.1.4 h)	Second sentence would appear to be either in conflict with 2.2.12 or reference to wayside equipment type. Manufacturer and characteristics in this regard is required.	Classification of possible ambiguity.	109. Section removed. 110. Clarification provided in Final RFTP.
110.	2-13	2.2.3.1 b)	By specifying an average brake rate of v/t from onset of braking, the steady state brake rate required for low brake entry speeds becomes unrealistic because of the percentage of the total time that jerk time represents. Recommend that v and t be taken after jerk period.	Removes the need to change steady state as a function of entry speed which is believed not to be the intent of the specification	111. Specification is clear; says "carried" by trucks.
111.	2-23	2.2.11 a)b)	When quoting weights carried by trucks or balance between trucks it is recommended that it be clearly defined as to whether this is at the body to car interface or at the wheel/rail interface.	Clarification of possible area for conflict	112. Clarification provided, figure deleted in Final RFTP.
112.	2-23	2.2.12	Referenced Figure 2-1 appears to be incorrect reference.		113. This is what is required.
113.	2-51	2.3.1.4 f)	The requirement to test each car in a hot room is both unnecessary and expensive. The purpose of type testing is to verify the capability of the design and to establish equipment test parameters to be used for unit only acceptance testing.	Significantly reduce cost and delivery times.	114. May be simulated via truck shimming, rail relocation, etc.
114.	2-49	2.3.1.3	How are fully worn wheels "simulated"? Will this require a special wheel-set? (with small wheels)		115. Mockups are allowed until production pieces are available, then production pieces must be mounted.
115.	2-56	2.3.4.2	Use of actual equipment could delay construction of mock-up. Would actual (or, better, simulated) cases only be acceptable?		

-994- CARBODY SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION LTD.

SECTION TITLE: CAR BODY

SECTION NUMBER: 3

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
116.	3-3	3.3	Clause 17.17.3 (p. 17-46) require use of asbestos panels.		116. Final RFTP clarifies issue.
117.	3-16	3.10.1	Clarification required; is 100 lb./ft^2 the live passenger load or the sum of dead and live loads?		117. Live loads only.

5-804 CARBUILDER/SHIPPER: URBAN TRANSPO[illegible] EVELOPMENT CORPORATION LTD.

SECTION TITLE: AIR COMFORT SYST[illegible]

SECTION NUMBER: 7

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
118.	7-1	7.2	Fresh Air is filtered prior to mixing with recirculated air then both are filtered.	To filter the mixed air only would reduce first cost and filter maintenance time would be reduced.	118. Clarification provided, see Final RFTP.
119.	7-2	7.2.2	Cardboard frame filters pose a possible fire hazard.	Clarification is required	119. These are standard commercial items, fuel contribution is negligible.
120.			Suggest the use of replaceable filter media in a metal frame 3rd para, 3rd sentence: The 100 fpm air velocity criteria can only be achieved if the measuring point is six inches below the face of the diffuser.		
121.	7-4	7.3	The implication is that overhead will provide uniform heat throughout the car. With outdoor ambients below car temperature the overhead heat will not result in floor level conditions to meet the requirements of para. 7.5 subsections 2 and 3.		120. Section 7.2.4 states exactly this page 7-4 1st paragraph, line 2. 121. It is believed that adequate air circulation will minimize stratification.
122.	7-4	7.3.1	This implies only overhead units for heating whereas floor heat is implied in 7.5 item 4.	Clarification	
123.	7-4	7.3.1	2nd para. The use of re-heat for humidity control (see also 7.5, page 7-12) is energy consuming and should be avoided where possible.		
124.			Using humidity sensors to activate the refrigerant cycle would be a benefit to the operating authority.		122. Final RFTP written for clarification. 123. Withdrawn by UTDC.
125.			3rd para. '(C)' is superfluous and can be deleted.		124. Make a proposal.
126.	7-6	7.4	1st para. The use of hermetically sealed units does not meet the requirements of section 1.1, page		125. Requirement remains. 126. Comment understood, no change.

-004 CARBUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION LTD.

SECTION TITLE: AIR COMFORT SYSTEM

SECTION NUMBER: 7

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
127. 128.	7-10	7.4.3 b)	Hermetic compressors have not yet been proven on North American cars. We recommend that the Operating Authority consider only semi-hermetics. The carrier 06D semi-hermetic specified will provide two stages of unloading down to 33% of full load. The 60% figure should be replaced by 33%.		127. Service proven is not limited to N.A. These units have been proven in Japan. 128. Clarification provided, see Final RFTP.

CARBUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION LTD.

SECTION TITLE: AUXILIARY ELECTRICAL EQUIPMENT

SECTION NUMBER: 9

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
129.	9-3	9.1.2.2	"more than 1 " as "no more than"?		129. "No more than," see Final RFTP.
130.	9-6	9.2 9.5.2	Is the use of AC or DC for heating at the supplier's discretion?		130. No, motors must be D.C., heating elements may be A.C. or D.C. controls low voltage D.C.

-804-

CARBUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: PROPULSION SYSTEM CONTROL

SECTION NUMBER: 10

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
131.	10-5	10.6.4	Why not let the dynamic brake produce torque in excess of empty car requirement if able and if propulsion supplier chooses.		131. Section has been rewritten to maximize dynamic braking and available adhesion. See Final RFTP.

-804 CARBUILDER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION LTD.

SECTION TITLE: IN-SERVICE SUPPORT

SECTION NUMBER: 15

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
132.	15-1	15.1.1	What is meant by "electrically" reproducible?		132. RFTP clarified.
133.	15-4	15.2.1	How can bench test equipment provide varying environmental conditions? Clarification required.		133. Requirements revised, see Final RFTP.

3-804 CARBUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION LTD.

SECTION TITLE: MATERIALS AND WORKMANSHIP

SECTION NUMBER: 17

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
134.	17-9	17.5.3	Requires clarification, if the levels have been met, where are the defective areas?		134. Clarified.
135.	17-13	17.9.2	Why the reference to iron pipe; does this imply that an alternative to copper is permissible?		135. Clarified, see Final RFTP.

CAREUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: SYSTEM REQUIREMENTS

SECTION NUMBER: 2

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
136.	2-9	2.1.7	The maximum specified AWO operating weight is not attainable.	The 90,000 lb. ceiling will be exceeded because the onerous carbody structural strengths and crash worthiness requirements will profoundly increase the weight of any otherwise compliant proven vehicle by an estimated 2000 lb. It is recommended that either the structure design specifications be relaxed, or the maximum vehicle weight be increased.	136. UTDC withdrew comment, said they would try to achieve 90,000 lbs requirement.
137.	2-9	2.1.9	The shock time history must be specified.	It is required in order to calculate the response of the equipment to the impact.	137. LACTC will accept definition of "shock" from a recognized published source.
138.	2-4	2.1.2	The requirements for deformation to occur without fracture, tearing or separation of connections is not a finite and deterministic design criteria, and can therefore not be demonstrably achieved, hence the requirement is redundant and should be deleted.	The requirement is entirely subjective, and is therefore open to interpretation during the design process. It cannot be objectively assessed by analysis and substantiation by destructive testing is out of the question because no agreeable national or industry standards for test procedures exist.	138. This is a design criteria and not to be proven by test, rather through calculation and analysis.

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SECTION TITLE: SYSTEM REQUIREMENTS

SECTION NUMBER: 2

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
139.	2-19	2.2.10.1 (b)	May a Type 1 SLM also be used.	This is of benefit to LACTC and to the carbuilder because the defined response tolerances are less than those for a Type 2 SLM.	139. Type 1 SLM is also acceptable.
140.	2-20	2.2.10.3	Change "at the above location" to "at the location of paragraph 2.2.10.1".	Resolve specification ambiguity.	140. Revised in Final RFTP.
141.	2-20	2.2.10.3	Remove the SPL limit for operation of any one system.	A vehicle will only operate in revenue service with all systems in operation, therefore, so long as the interior SPL does not exceed 72 dbA with all systems in operation the SPL generated by any one system is not relevant to passenger comfort.	141. Disagree, this is what is required.
142.	2-21	2.2.10.5	Delete entire paragraph.	The noise levels will in any event be measured after the equipment is installed on the car, in its proper operating environment. The Authority retains the right to reject the car if the specified sound pressure levels are exceeded at that time.	142. No, requirement remains.
143. 144. 145.	2-32	2.3.1.2 (h)(i)	The arbitrary "minimum" test load requirements specified by LACTC should be deleted.	1) The RFTP firstly requires that the truck be of proven design. By arbitrarily imposing on the Contractor a new set of test requirements that are not even mentioned in Section 11, the truck becomes essentially unproven vis-a-vis these RFTP test points. 2) The prescribed static test conditions bear no relation to the conditions of service under which the truck became service proven nor to the conditions of intended service. 3) In the case of the lateral over-turning test, the vertical loads on the truck side frames that are next to the wheels that are in contact with the rail are twice those of the vertical test load. Therefore, one test point is either excessively severe, or the other is too conservative. It is noted that no such load cases apply to the axle specification.	143-145. Requirements remain as stated in Final RFTP. The requirements of Sections 2 and 11 combine to produce the desired truck.

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SECTION TITLE: SYSTEM REQUIREMENTS

SECTION NUMBER: 2

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
146.	2-27	2.3.1	Reword as "The test verification requirements of 2.3 a) above consist of "Proof-of-design" tests (type tests, qualification tests) to be performed to demonstrate that the specified performance characteristics are achieved. The proof-of-design tests shall be conducted on articles selected from the first 10% of the production run. Routine acceptance tests to be conducted on all articles of an assembly or a system."	1) To clearly separate qualification tests from routine tests. 2) To specify the number of kinds of qualification tests. 3) To allow some amount of flexibility of the choice of the article for qualification tets. 4) To delete the provision to perform type tests on prototypes. Prototypes are usually not representative of the production articles.	146. In the draft RFTP paragraph 2.3.1.2 and 3, describe qualification tests. Paragraph 2.3.1.1 + 4 describes the acceptance tests.
147.	2-27	2.3.1.2 (h)	Add a requirement for a static test of the articulation bolster and joint assembly of the trailer truck. Specify that the joint shall be tested under all conditions of vertical load and compression load, with simulated carbody articulation underframe weldments used as the means to apply the loads. Specify that the compression end load shall be applied in an alignment corresponding to the level tangent track and to the 100 foot minimum horizontal curve on level track.	The second-to-last paragraph mentions only "truck under the articulation". However, the common definition of an articulated LRV truck includes: - truck frame - articulation bolster - load carrying portions of the joint attached to the articulation bolster. Therefore, the intent of RFTP paragraphs 2.3 and 2.3.1 is not reflected by the omission of a requirement for a test of the articulation joint.	147. Semantics: Whatever is the "truck" at the articulation, as opposed to the "car body" must be tested.

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SECTION NUMBER: 2

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
148.	2-33	2.3.1.2 (h)(2)	Requirements for a truck fatigue test should be deleted, provided that: 1) a service-proven truck is offered, or: 2) the proposed truck has been submitted to a comparible fatigue test, and 3) the truck is to be built by the same builder.	Provisions for a waiver of the fatigue test should be made. A fatigue test is no substitute for actual revenue service demonstrated proven service because of the arbitrary and artificial nature of a fatigue test procedure.	148. Waiver provisions may be included in General Provisions as described but add; 4) loads and service identical.
149.	2-34	2.3.1.2 (h)(3)	The dual qualification criteria of static stress measurements plus the fatigue test constitute a redundancy. If indeed a fatigue test is required, then the additional qualification of fatigue life by reference to fatigue allowable stresses should be deleted.	As it stands, a truck design could pass any number of fatigue tests and yet be rejected on the grounds that the fatigue stress allowables were exceeded. This is contrary to sound engineering judgement.	149. Agree, the third paragraph of the referenced section in the draft RFTP should be reworded and moved to the design section (11).
150.	2-34	2.3.1.2 (h)(2)	Delete the last sentence. Change the first sentence to "...exceed previously approved fatigue allowables".	Resolve ambiguity on meaning of last sentence.	150. Not clear which paragraph is being discussed.
151.	2-34	2.3.1.2 (h)(2)	Replace third sentence with "If any cracks are found that were not present at the start of the test, they shall be evaluated relative to AAR M203 pass fail criteria for cast steel trucks. For welded trucks, or welds in cast-welded trucks, the test shall be extended for an additional 1 million cycles to establish whether crack propagation has been arrested but in no cases will cracks larger than .5 inch be accepted. A discontinuity must be at least .25 inch long to be recognized as a crack."	The proposed pass-fail criteria take cognizance of the behaviour of castings subjected to repetitive loads (as acknowledged by the A.A.R.) and of the beneficial release of locked-in stresses in weldments. Structures subject to repetitive loads may develop cracks that in no way affect their integrity, e.g. aircraft with known cracks are permitted to fly.	151. Requirement remains as stated in Final RFTP.

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SECTION TITLE: SYSTEM REQUIREMENTS

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ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
152.	2-34	2.3.1.2 (h)(3)	Extend the period of waiver application to no fixed cut-off date.	1) The vehicle design mass may not yet have been frozen after 90 days. 2) The intrinsic design and performance properties of the proposed springs will not have changed.	152. This 90 day requirement pertains to existing data. If it indeed exist, it should be no problem submitting within 90 days.
153.	2-41	2.3.1.3	General comment: This entire section should be re-written as follows: Delete paragraphs 8) and 11). List the 4 major loadcases separately from the requirements for the conditions of the tests. Specify that the strain measurements shall commence at the shell plus testing equipment weight.	The pass-fail criteria of any qualification test are the design criteria. Hence they do not have to re-appear in the test specification sections. Additionally, there are numerous contradictions between the test section 2.3.1.3 and the design specification 3.4. The loadcases are the most important facts of a structural test specification, yet they do not stand out clearly. As written now, measurements of stress start at AW0 (see para 2.3.1.3 (3)), and therefore only the stress difference between AW0 and 100% load (?) is measured. Furthermore, no requirement to interpolate back to zero shell weight is stated.	153. Requirements of paragraph 8 and 11 remain. Known contradictions have been corrected.
154.	2-41	2.3.1.3 (2)	Rewrite as follows: "The structural test may be performed on each separate car half or on the two halves joined together at the actual or simulated articulation joint. If the car is tested in two halves, the car-to-joint connection shall be precisely duplicated in order that the load transfer from carbody to joint is properly represented. If both halves are tested together, an actual or simulated joint shall be used to join the cars. The method of interfacing at the car half rear ends is subject to approval by the Authority."	To clear up ambiguity.	154. Section has been rewritten for clarification.

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SECTION NUMBER: 2

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
155.	2-41	2.3.1.3 (3)	Rewrite as follows: "Frictionless means shall be employed to support the car. The support interface to the carbody bolster shall be with the design slew ring bearing and a simulated bolster, having combined stiffness properties of the production bolster, or by a production truck. Load cells shall be installed under all vertical supports in order to provide a means of measuring the applied vertical loads independently of the methods used to apply the load."	1) If no production truck is available, the use of a simulated interface should be permitted. 2) Unlike the measurement of the compression load, the method of measurement of the vertical load was not included in the RFTP.	155. Alternatives permitted, see Final RFTP.
156.	2-41	2.3.1.3 (6)	Rewrite as outlind in summary format below: <u>Loadcases</u> 1) Coupler Compression Test Vertical Load Longitudinal Load Shell 0 AWO 0 AWO 100,000 lbs (insteps) AWO 0 Shell 0 AW4 (repeat) 2) <u>Anticlimber Compression Test</u> (same format) 3) <u>Vertical Load Test</u> Shell AW0 AW1 AW2 AW3 AW0		156. Section remains unchanged.

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SECTION NUMBER: 2

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
157.	2-42	2.3.1.3 (8)	Delete the paragraph.	1) It conflicts with the design specificaitons of 3.4 b). 2) If one achieves stresses of 100% of yield strength (as permitted), then residual strains by definition will be of the order of 2000 micro-strains. Therefore, the paragraph is inherently self-contradictory. 3) All references throughout the RFTP to "accuracy of the instrumentation" should be replaced with one single reference to an NBS/ASTM traceable calibration for test equipment. According to the RFTP, use of extremely insensitive or uncalibrated test equipment is not prohibited.	157. Section 3.4 b) should govern.
158.	2-43	2.3.1.3 (10)	Delete the paragraph.	1) Our comment gainst 2.3.1.3 (6) if accepted, covers the perceived intent of this paragraph. 2) The paragraph does not require testing to maximum compression end load under a maximum vertical load of AW3. This appears to conflict with 3.4 b), paragraph 1, where the design condition is twice AWO compression load under a fully-loaded (AW3?) carbody. 3) Whereas the first sentence states "...at 100% vertical load as specified..." it is in fact not specified anywhere.	158. Section 3.4 b) should govern.
159.	2-43	2.3.1.3 (12)	Replace second sentence with "The connections at the articulation joint shall be in the normal design configuration".	The current sentence implies that the roof linkage does not exist in transmitting the torsional twist from one carbody half to the other. Without the link the stub arms will be over-stressed.	159. Roof linkage is required to be part of structure to resist lateral torsional loads (Section 3.9.6).
160.	2-44	2.3.1.3 (13)	Change line 6 to "...to the original symmetrically-supported shell condition."	The current wording implies that the AWO load is the reference no load condition. In fact, the structure will still be stressed in proportion to the ready-to-run AWO weight condition.	160. Do not see reason to change wording "Symmetrical jacking condition" equates to symmetrically--supported."

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SECTION TITLE: CAR BODY

SECTION NUMBER: 3

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
161.		3.1 to 3.10	It is recommended that this entire section be reconsidered, re-edited and re-written.	1) No existing LRV has a carbody structural design of the type that is specified, therefore, irregardless of the Contractor who is ultimately awarded the contract for the supply of vehicles to LACTC, the carbody will have to be redesigned. 2) The design features that are specified go far beyond what is needed to provide a basic infinite vehicle life. Therefore, no tangible benefits accrue to LACTC over the operating life of the vehicle. On the other hand, the vehicle weight will increase, and non-recurring design and tooling costs will be passed on to LACTC, as well as additional direct construction labour costs. Today, thousands of LRV's operate successfully with design and manufacturing techniques that existed prior to the apparent advancement of the state of the art that this section introduces. 3) Paragraphs that are intended to prescribe the structural design requirements also include testing requirements, to the destriment of the lucidity of the test. In some instances, this results in outright omissions of vital information (see 3.4 (c). No allowable stresses are stated. These must be deducted from Part 2, 2.3.1.3 (8). 4) The RFTP text is redundant because: a) a service proven (i.e. existing) car structure as specified, but: b) detailed design details are then specified, e.g. centersills/no centersills, loadpaths through draftsills, bolsters, sidesills, etc., which may or may not be existing conditions on a propcsed vehicle which otherwise meets the performance requirements of the RFTP.	161. Minor changes made for Final RFTP, basic requirements remain unchanged.
162.	3-2	3.3	Delete the requirement for the articulation section to be air-conditioned to the same standard as the main car-half sections.	There are no air supply ducts in the articulation section.	162. Requirements remain unchanged.

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ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
163.	3-4	3.4 (b)	Rewrite entirely, changing the wording from a test specification to a design specification: "Under an end compression load of twice AW0, applied to the face of the anticlimber, with the car vertical load equal to, and distributed as, AW3, the following stresses shall not be exceeded. From coupler anchor mounting face of the "A" half to that of the "B" half: 90% of the published or .2% offset defined yield strength. Outboard of the coupler anchor mounting face, below top of floor: 110% of the allowable stresses between the coupler anchor mounting faces. Elastic buckling is permitted provided that such buckling does not appreciable alter the distribution of loads carried by the main underframe members."	Make the requirements less ambiguous.	163. Requirement generally remains as stated. See Final RFTP Volume I.
164.	3-4	3.4 (c)	Rewrite as a design specification: "Under an end compression load of 75,000 lbs, applied through the centreline of draft onto the face of the coupler anchor mounting face, with a vertical load equal to AWO, the carbody stresses shall not exceed 75% of the published or .2% offset defined yield stress."	This loadcase covers instances of excessive coupling forces. The coupler compressive load is limited to 75,000 lbs by the shear pins so it is acceptable to consider this the applied load. Then a factor of safety is applied through the allowable stresses to rule out damage to the carbody. Cars are only coupled when they are at AW0, therefore, the vertical load for this loadcase should be revised to reflect this.	164. Requirement remains as written.

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ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
165.	3-4	3.4 (f)	Change to "...minimum vertical the shear strength of the connection of the anticlimber to the end sill shall be 40,000 pounds".	RFTP 3.7.1 defines the requirement of the removable anticlimber. The anticlimber provides the capability of one car end to interlock with the end of another car such that vertical separation is avoided. The strength in the vertical direction is provided by the end sill beam, and therefore only the strength of attachment of the anticlimber needs to be defined. The anticlimber itsself has very little strength because there is no need to duplicate the strength (and the weight) of the end sill.	165. Requirement has been revised, see Final RFTP.
166.	3-5	3.4 (g)	Rewrite as follows: "The articulation end underframe weldment shall be capable of transferring the twice-AWO end compressive load specified in 3.4 b) into the trailing truck joint. The corresponding vertical load, at the point of attachment to the joint, shall correspond to AW3. The stresses under this loading condition shall not exceed 90% of yield." NOTE: It is not clear if this paragraph refers to the carbody or the articulated joint. RFTP 3.6.2 which does deal specifically with the articulation joint, requires that the joint compressive strength matches that of the "adjacent carbody sections". But according to RFTP 3.4 (g), the carbody-side strength needs to be no more than 100,000 lbs. Therefore, it may be deduced from the literal interpretation of the RFTP that the joint compressive strength is 100,000 lbs. An unequivocal modification of this RFTP paragraph is essential.	This paragraph specifies a 100,000 lbs compressive load, which is in direct contradiction to RFTP 3.4. b). The RFTP value of 25,000 lbs is arbitrary. Here the RFTP allows 100% of yield, but in 3.4 b) limits it to 90% of yield.	166. Any known contradictions have been corrected. Some requirements are for design, others are for testing.

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ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
167.	3-6	3.5 (a)	Rewrite as follows: "Calculations for joints shall define the method of joining.	Complete joint definitions may be found on the structure drawings.	167. Okay, but drawings depicting joining method must be part of submittal.
168.	3-6	3.5 (e)	Please clarify: is this the free-free first mode or the mode with the carbody resting on flat air springs.	Specification requirement ambiguity.	168. Comment and concern not understood.
169.	3-7	3.5 (h)	Please define "critical".	This paragraph could possibly include all the structural joints on the car.	169. True, if all are critical and major.
170.	3-7	3.6	The articulation section is traditionally supplied by the truck supplier. Therefore, it is requrested that the contenct of 3.6 be tranferred to Section 11, "Trucks".		170. Requirement remains unchanged.
171.	3-7	3.6.2	Last paragraph, add: "...vertical planes as required to negotiate the defined track work alignment."	This addition is required to limit the amount of rotational capability that the contractor must include in the joint design.	171. Rotational capabilities requirements are understood to meet alignment as defined in Section 2 and Appendix A.
172.	3-8	3.6.2	Rewrite sentence 3 as follows: "The means of retaining the two carbody halves to the joints shall resist physical separation in the longitudinal, vertical and lateral directions, to the following extent: Longitudinally in compression: 200,000 lb. to ultimate strength Vertically upwards in tension: 40,000 lb. per car half		172. Requirements remain as written in Final RFTP. 173. This is an arbitrary combination of each possible ultimate strengths, both collision loads, and each possible failure condition.
173.	3-9	3.7.1	Paragraph 4, last sentence, clarify: "...when they are (single/both (?)) loaded to their ultimate (shear/ bending(?)) strength, without (yield/ultimate (?)) failure of the end sill.	The yield strength of the end sill under the twice AW0 compressive load is 200,000 lbs. This paragraph now requires a fialure strenght of twice, either: (a) The ultimate bending strength specified in 3.4 e), (2 x 22,500 lb) or; (b) the ultimate shear strength specified in 3.4 d) (2 x 135,000 lbs.). The sentence is totally ambiguous, but the implication of this lack of precise definition on the vehicle weight is profound.	

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ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
174.	3-9	3.7.1	Paragraph 6, Delete last sentence.	This is already covered in 3 other places in the RFTP.	174. Agreed.
175.	3-9	3.7.1	Reword as follows: "End underframe ...in accordance with design, inspection and welding practices as specified in AWS D1.1-84, for new welded steel bridges (section 11). The types and arrangements of the welds shall be justified by the stress analysis.	When the design is justifed by the stress analysis on the basis of Code D1.1 the required static and fatigue strength of the weldments is assured. This methodology will inherently result in the provision for full penetration groove and butt welds where these are necessary. The current RFTP wording "... where primary loads are carried across the joint in tension or compression ..." is not acceptable because its application in the drawing review and approved process is inherently arbitrary, and subject to personal interpretation of what constitutes a "primary load". The prohibition of single sided fillet welds anywhere in the underframe contributes nothing to the underframe structural integrity, other than the need to use twice as much welding (double fillets) or full penetration welds (additional shrinkage, distortion and higher shrinkage stresses). According to this paragraph, not even miscellaneous brackets or clips may be attached by single-sided fillets. AWS D1.1 puts limitations, restrictions and prohibitions on use of certain welds for certain applications. Adherence to this Code will ensure that the carbody structure, when designed and welded to AWS D1.1, will have a minimal 30 year life, and behave in a predictable manner in collisions.	175. The AWS 1.1-84 can be added, but the requirements for full penetration groove welds and the proscription of one sided fillet welds must remain. This is meant to apply to structure carrying primary loads, not to brackets and clips.
176.	3-10	3.7.3	Delete the specification for a subfloor to be attached to the bottom of the floor crossings.	It is noted that the RFTP places no restrictions on the types of welds that would be used on the much more severely vibration-and-impact-loaded truck frames and bolsters. The space between the floor crossings is fully taken up by undercar equipment, conduit and piping. The requirement is a physical impossibility unless the top of the floor is raised by 3 inches.	176. Floor requirements have been revised.

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SECTION NUMBER: 3

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
177.	3-12	3.8.1	Rewrite last sentence: "... and by a maximum of two maintenance personnel, each weighing 280 lbs., anywhere on accessable portions of the roof."	Current wording allows essentially a uniformly distributed load of 40 lb. per square foot across the entire roof. A design to this roof load requirement is unnecessarily heavy.	177. Agreed. This is the intent of the specification wording.
178.	3-13	3.9.2	Change "...permit equipment cooling" to: "...not be detrimental to equipment cooling."	Clarify the purpose of shrouds.	178. Agreed. Shrouds are aesthetic.
179.	3-14	3.9.3	Aluminum extrusions should be permitted.	a) Aluminum extrusions provide more options for the Contractor to present to LACTC in terms of advertising card retention. b) Extrusions weigh less than LAHT. c) Extrusions are not affected by U.V., ozone, unlike elastomeric materials. d) Extrusions do not need to be qualified for flammability properties.	179. Aluminum extrusions would pose electrolyte problems.
180.	3-14	3.9.5	Paragraph 1, sentence 3: delete "... and articulation sections ..."	The articulation section is part of the trailer truck, which is not accessable for hoisting. The articulation section and trailer truck will suspend from one or both carbody halves when these are jacked or hoisted.	180. Should be able to jack or lift articulation and its trucks for maintenance and re-railing.
			Paragraph 2, sentence 1, delete.	Refer to comment above.	See above.
181.	3-14	3.9.5	Paragraph 5, sentence 3, rewrite as follows "The ulimate horizontal strength, through the plane of the connection, shall be no less than 75,000 lbs."	A load applied "anywhere on the truck:" may result in a horizontal shear force plus a moment at the interconnection plane to the car, whereas the requirement is for a horizontal shear load only. (A moment is not in a horizontal plane.)	181. No. Specification should actually say--"..applied in any direction at any point on the track" and to "secure the entire tracks to the carbody" under these conditions.
182.	3-18	3.12.1	Paragraph 3 This requirement cannot be addressed until the difficulty imposed by RFTP 3.7.3 is first resolved.	The contrator should be obliged to provide sufficient sound transmission loss (S.T.L.) in the floor to assure compliance with RFTP 2.2.10. No further detailed specifications are necessary.	182. Section 3.12.1 relates to thermal insulation (Section 3.12.2 says what UTDC requires). See comment on 3.7.3.

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SECTION TITLE: PASSENGER DOORS

SECTION NUMBER: 6

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
183.	6-7	6.3.6	In the first line, change "doorway" to "car". In the sixth line, change "at each door" to "for each car". In the eighth line, change "at each door" to "for each car". In the tenth line, change "at each door" to "for each car".	The requirement for individual relays for each door will result in higher costs and lower reliability.	183. Each side may be adequate, make a proposal.
184.	6-11	6.4.8 (c)	Delete the words "each panel shall be closed and locked" in the first two lines.	It is not practical to close and lock the doors with such a mechanism. The doors will have to be manually closed prior to actuating the out-of-service switch.	184. UTDC withdrew comment.

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SECTION TITLE: AIR COMFORT SYSTEM

SECTION NUMBER: 7

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
185.	7-1	7.2	First sentence delete the word "normally".	The evaporator blower fan is in fact the only source of ventilation air. The current wording implies that there is possibly another source of air circulation.	185. UTDC withdrew.
186.	7-1	7.2	Paragraphs 2 and 3 infer that the fresh air should be filtered twice. It is recommended that the last sentence in paragraph 2 be deleted.	It is a conventional and workable practice that filtering take place after the return air and the fresh air have been mixed. This practice reduces the AC unit maintenance time.	186. See response to comment number 118.
187.	7-1	7.2	Paragraph 4 The requirement for availability of full ventilation should be amplified by adding the following sentence: "In the full ventilation mode, fresh air may be inducted without any filtration."	1) Space constraints do not allow a separate filter for 100% fresh air. 2) The air ducting bypasses the normal calibrated fresh air opening and the evaporator coil/mixed air filter, in order to minimize air flow pressure restrictions.	187. Filtration is required.
188.	7-2	7.2.2	Delete the requirement for access to the air filter from the outside of the car.	In order to be able to pass the water tightness specification of Section 2.3.1.2 e) it is preferred to minimize the number of external access hatches.	188. Requirement revised, see Final RFTP.
189.	7-3	7.2.3	First paragraph, reword as follows: "The main air distribution duct shall be constructed of stainless steel aluminum sides and top; the duct bottom shall be formed by double wall insulated, removable interior ceiling panels. Slot-type diffusers shall discharge the conditioned air from the supply duct into the passenger compartment."	This represents current design practices. This practice provides the greatest amount of maintainability to the HVAC system. It weighs less than the specified design, which includes a metal duct bottom.	189. Requirement revised, see Final RFTP.
190.	7-4	7.3.1	The specified requirement for two stages of overhead heat per modular AC unit should be changed to a requirement for only one stage.	1) For a low design temperature differential of 28F degrees, two stages of overhead heat constitute excessive complexity. 2) The unnecessary design sophistication inherent in two stages overhead heat is counter to the express requirements for maintainability (see 2.2.13.4).	190. Withdrawn by UTDC.

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SECTION TITLE: AIR COMFORT SYSTEM

SECTION NUMBER: 7

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
191.	7-5	7.7.1 b)	Change "rapture" to "rupture".	Spelling error.	191. Revised.
192.	7-5	7.3.2	After the first sentence, add either a) or b): "...40°F with the side windows and the cab door closed and the overhead air supply shut off." b) "...having a minimum capacity of X KW."	The Contractor cannot foresee the driver's operating practices. Therefore, it is preferrable that LACTC either specify these practices, or specify the minimum heating capacity.	192. Revised.
193.	7-8	7.4.1 j)	Change to read: "Interior relative humidity condition at the specified unit rating condition."	Suppliers of air conditioning equipment will not guarantee any RH condition other than at the equipment rating point, unless equipment with separate dry bulb and wet bulb temperature controls are specified to be included.	193. Withdrawn by UTDC.
194.	7-8	7.4.1	Last paragraph: delete the second sentence.	See comments against 7.4.1 j).	194. Requirement clarified, see Final RFTP.
195.	7-13	7.5.4	Delete the reference to possible requirements for multiple stages of floor heat.	It is not anticipated that the temperature variations of items points 1 through to 4 are unattainable. However, for the very small heating temperature differential $T_i - T_a$, the additional complexity and weight of multiple stages of floor heat are not warranted.	195. Requirement revised.

CARBUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: TRUCK ASSEMBLIES

SECTION NUMBER: 11

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
196.	11-2	11.1	Change paragraph 11 to "...and shall accomodate all relative motions between truck and carbody without damage."	No explicit requirements for 90° truck rotation in either direction have been specified.	196. If truck is capable of 90° rotation, then duct work must too sustain this rotation and without damage.

CARBUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: MATERIALS AND WORKMANSHIP

SECTION NUMBER: 17

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
197.	17-44	17.17.2	Delete the words "of the highest quality procurable and shall be" in the fourth paragraph.	The vehicle costs would otherwise be increased excessively.	197. Revised.
198.	17-44	17.17.3 (a)	Delete the first sentence of the second paragraph.	The vehicle costs would otherwise be increased excessively.	198. Revised.
199.	17-45	17.17.3 (b)(c)	Delete references to specific manufacturers.	This will allow for more competitive hardware procurement and a lower vehicle cost.	199. Withdrawn by UTDC.
200.	17-46	17.17.3 (d)	Delete the third section.	This specification is not applicable to rail vehicles.	200. Approved equals are permitted.
201.	17-46	17.17.4	Delete the second paragraph.	The use of circuit breakers will not necessarily give better fault protection and the cost of the vehicle will be increased and the reliability decreased.	201. Disagree, but make a proposal.
202.	17-35	17.14.3	Change: Flooring (Structural) ASTM E-119 1 hour to: 30 minutes	1) After 30 minutes, the yield strength of the steel under elevated temperatures will continue to decline until the structure will no longer be able to support its own and the equipment deadweight. 2) 1 hour is much longer than the required time to evaluate the vehicles. 3) See also the comment below: unless the loading is defined, the time to collapse cannot be estimated.	202. SCRTD requirement.
203.			Define: Load on floor during the test.	The load on the floor will affect the elapsed time to structural collapse.	203. Full loading evenly distributed.

CARBUILDER/SHIPPER: URBAN TRANSPORTATION DEVELOPMENT CORPORATION

SECTION TITLE: MATERIALS AND WORKMANSHIP

SECTION NUMBER: 17

ITEM	PAGE	PARA	COMMENT	REASON AND BENEFIT TO LACTC	LACTC RESPONSE
204.	17-15	17.10.1 (c)	Change "90°C" to 110°C".	The use of cross-linked polyolefin insulated wire is of little benefit unless full use of its 125°C rating is made.	204. Disagree, want extra margin.
205.	17-18	17.10.4 (d)	Change ".045" to ".020", ".060" to ".030" and ".080" to ".045".	The jacket thicknesses shown will not allow cables to be used with MIL standard connector back shells.	205. Make a proposal.
206.	17-19	17.11.1	Delete the first two sentences of the 6th paragraph.	Separation of 36VDC and 120/208 VAC system as requested will result in excessive car weight due to the need for extra conduits and junction boxes.	206. Disagree.
207.	17-22	17.11.3	Add the words "except at cleats" at the end of the first sentence.	The use of cleats over two inches deep would result in excessive thickness of neoprene which is a smoke hazard in case of fire.	207. Withdrawn by UTDC.
208.	17-24	17.11.10	Delete the first sentence of the third paragraph and replace with "Conduit shall be electro zinc plated electrical metallic tubing in standard lengths."	The requirement for heavy wall rigid conduit only adds excessive weight to the vehicle.	208. Heavy walled rigid conduit required.
209.	17-26	17.11.18	Delete the words "with a permanent...formation".	The use of vinyl coatings is a fire hazard.	209. Revised.
210.	17-26	17.11.19	Delete the words "a single piece of rigid steel" and replace with "a sealed steel wiring duct or".	If a cam controller is used, the resistors will likely be located on the roof and individual conduits for each conductor would impose an excessive weight penalty on the vehicle.	210. Requirement is for chopper control.
211.	17-35	17.15.1	Delete the entire section.	Use of aircraft design criteria will result in excessive costs for electrical equipment.	211. Disagree.
212.	17-36	17.15.2	Delete the fourth paragraph.	Such derating will result in excessive weight for the resistors.	212. Agree, but will result in longer lasting components.
213.	17-37	17.15.2	In the last paragraph, change "knife switch" to "link".	The requirement for a knife switch would result in unreliable circuit grounding.	213. Agree, make a proposal.
214.	17-38	17.15.3 (e)	Delete this section.	This restriction precludes the use of diodes on relay coils and would require ventilated areas for relays, etc. This would greatly increase the weight of the car.	214. Make a proposal.

CARBUILDER/SUPPLIER: Vapor Corporation/Chicago, Ill.

SECTION TITLE: Passenger Doors

SECTION NUMBER: 6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	6-1	6.1	Add the following sentence at the end of the paragraph: "For the outward folding doors, when in closed position, adequate support for bottom leading corners should be provided.	To reassure that doors are tight when in closed position.	1. Agree, see Final RFTP.
2	6-2	6.2.1.1	In place of concentrated load of 200 lbf, a load of 100 lbf over a 2 inch diameter area should be specified.	These criteria are used for bi-folding doors on buses. Doors will be lighter, larger windows can be used.	2. Criteria added, see Final RFTP.
3	6-3	6.2.1.1	Plastic tubing (SAE J844) with compression type brass fittings should be specified for door operator modulator unit.	Plastic tubing is used on SEPTA LRV. It is approved for Boston and Santa Clara applications. Will facilitate piping and is vibration proof.	3. Provide details in proposal. Possibly acceptable.
4	6-3	6.2.2	In place of 30 lbf specify 50 lbf and in place of 2 inches of the fully closed position, 3 inches should be specified. In place of 1.5 ± 01 seconds specify 1.5 ± 02 sec, and in place of 2.0 ± 01, 2.0 ± 02 sec should be specified.	The recommended force data are taken from actual mock-up for outward folding doors. Lower force will make door operation less reliable. To reassure smooth operation and extended life, depending on door weight, operating time tolerance should be increased.	4. Requirements remain.
5	6-4	6.2.3	Change "remain open until an adjustable (0 to 5 seconds) time delay circuit times out" to "immediately reclose". Delete next sentence. In the last sentence change "time delay" to "recycle".	To improve reliability and maintainability.	5. Requirement remains.

CARBUILDER/SUPPLIER: Vapor Corporation/Chicago, Ill.

SECTION TITLE: Passenger Doors

SECTION NUMBER: 6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
5 (Cont.)	6-4	6.2.3	In place of paragraphs a) and b) substitute the followin: "It shall detect a specimen 2 inch wide by 1 inch high - it should not detect a 1 inch wide by 2 inch high specimen.	It will be time consuming and unnecessary to maintain tight adjustments in reference with recommended changes per para. 6.2.4	5. (Cont'd.) Requirement remains.
6	6-4&5	6.2.4	In paragraph a) change "to assist in the detection" to read "to permit the removal". Change paragraph b) to read as follows: "A gap between the door panel leading metal edges should be approx. 6 inches, when in closed position."	To clarify. It would be difficult to comply with original requirement, and satisfy paragraph 6.2.4.a.	6. Requirement remains.
7	6-6	6.3.2	In paragraph c) delete the last three sentences starting with "After time delay..." In paragraph d) change the first sentence to read: "Momentary actuation of the close/lock switch shall close opened doors, disarm all pushbuttons and sound door warning signal per paragraph. 6.4.9."	For simplification - to improve reliability and maintainability.	7. Requirement remains.
8	6-6	6.3.3	Beginning of the paragraph should read: "Each door opening. . ."	To clarify.	8. RFTP revised.
9	6-7	6.3.4	Change sentence: "Simultaneous console command shall override any command from a crew key switch at any time" to read: "Door opened by the crew switch may be closed from operator console switches."	To clarify.	9. Adequate as written.

CARBUILDER/SUPPLIER: Vapor Corporation/Chicago, Ill.

SECTION TITLE: Passenger Doors

SECTION NUMBER: 6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
10	6-7	6.3.5	Replace "lever" with "device".	To broaden design possibilities.	10. Provide details in proposal, may be acceptable.
11	6-8	6.3.6	In paragraph g) in place of "both open trainlines" substitute "open trainline".	To clarify.	11. Want redundancy, no change.
12	6-9	6.4.4	Second sentence, delete: "edge of the". Last sentence, in place of "each panel is locked" substitute "door mechanism is locked."	It would not be practical to sense leading door edge. To clarify in reference to paragraph 6.2.2.	12. This is what is required.
13	6-10	6.4.6	First sentence - replace "switch" with "device".	This arrangement includes mechanical linkage, a valve, etc.	13. Provide details in proposal, may be acceptable.
14	6-10 & 11	6.4.8	In the title and first sentence - replace "switch" with "device". Change entire paragraph c) to read as follows: 1. Each panel shall be mechanically locked in the door closed position. 2. Electric controls to the door operator should be cut out. 3. By-pass door station interlocks. 4. Disable all adjacent passenger push-button switches. 5. Activate "Door-Out-of-Service" light.	It is a complicated arrangement, and should not be called "switch". For clarification. We recommend not to cut air supply; so doors are retained tightly preloaded.	14. Same as #13.

CARBUILDER/SUPPLIER: Vapor Corporation/Chicago, Ill.

SECTION TITLE: Passenger Doors

SECTION NUMBER: 6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
14 (Cont.)	6-10&11	6.4.8	Change paragraph d) to read: "A separate, manually operated air-cock (3 way) shall be provided to vent the air from the door operator when required."	A separate air cock should be used to cut the air supply when required.	15. Sounding of tone prior to door closure movement is required.
			Replace paragraph e) with original para. d), except in place of "switch" put "device".	For clarification.	
15	6-11	6.4.9	In the first sentence change "one second prior to the door closing" to read: "for approximately one second during door closing". Delete the sentence "The time delay function shall be adjustable from 0 to 2 seconds."	Simplification. To improve reliability and maintainability.	16. Added complexity is not desired. Requirement remains unchanged.
16	10-8	10.6.14	Add sentence: "As an alternate, a No-Motion circuit for Door Control can be provided by a separate independent system."	To separate function not associated with propulsion.	

CARBUILDER/SUPPLIER : WABCO

SECTION TITLE : General Requirements

SECTION NUMBER : 1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	1-1	1.1	This section states that waivers of design approvals may be requested. - When should such requests for waivers be submitted? - When would the LACTC consider such requests and grant waivers, during evaluation of the technical proposals or after contract award?	Clarification.	1) With proposal submittal.
2	1-1	1.1	Would the LACTC also consider requests for waivers of specific qualification tests if the contractor can demonstrate compliance with the specified requirements through prior testing and/or history of use on existing vehicles? (See WABCO's comments on Section 2.3.1.2.F).	Clarification and potential cost savings if waivers are granted.	2) Make request and provide supporting information in proposal.

CARBUILDER/SUPPLIER : WABCO

SECTION TITLE : System Requirements

SECTION NUMBER : 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	2-1	2.1.a	The maximum operation speed is specified as 55 MPH, but overspeed protection (Section 2.2.2) and disc thermal capacity (Section 12.6.11.b) are based on 57 MPH. For clarification purposes, which speed value should be used when the term "maximum speed" is referenced in a specific section of the technical provisions?	Clarification.	1) Use 57 mph to account for 55 mph value plus toleran
2	2-3	2.1.1.2.b)	It is suggested the word "service" be deleted since this requirement applies to both emergency and service friction braking.	Clarification.	2) Revised. 3) Reduced performance is acceptable.
3	2-11	2.2.c)	If an operative car tows an inoperative car, the specified braking rates will be reduced and will not comply with the CPUC requirements. Also please advise maximum operating speed under these conditions.	Clarification.	4) The RFTP intends to be compliant with and clarif CPUC requirements.
	2-13	2.2.3.1	Are the CPUC requirements more severe or significantly different than those specified? If so, will the CPUC requirements be specifically stated in the technical requirements or a copy of the CPUC requirements be provided?	Clarification.	5) 3.0 to 4.0 mphps is the requirement, and therefo rates cannot be below 3. mphps.
5	2-13	2.2.3.1	The normal braking rate of 3.5 MPHPS is considered high for service brake and will result in undersized wheel slips during all friction braking. It is suggested the nominal full service brake rate be reduced to 3.0 MPHPS.	Reduced wheel slips.	6) Calculation method has b clarified. See Final RF
6	2-13	2.2.3.1	The method of calculating the brake rates specified in the first paragraph is not specified. Are these rates net V/T?	Clarification.	7) Requirements have been revised.
7	2-13	2.2.3.1a)	The specified tolerance of $\pm$5% cannot be met if a significant portion of the service brake effort is being provided by the friction brake; i.e., friction brake under all brake conditions on the center truck. It is suggested the tolerance be increased to $\pm$10% when full dynamic brake capability is available. Under all friction braking, in the event of dynamic brake failure, the tolerance should be specified as $\pm$30%.	Clarification and add specification requirement for all friction braking.	

CARBUILDER/SUPPLIER : [redacted]

SECTION TITLE : System Requirements

SECTION NUMBER : 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
8	2-13	2.2.3.1.b)	The last two sentences of this paragraph indicate the dynamic brake has the capability of providing the specified brake rates. Sections 2.2.5 (blending) and 10.6.4 (Dynamic Brake Capability), however, specify dynamic brake effort on the motor truck in proportion to the weight supported by the motor truck with friction brake effort on the center truck in proportion to the weight supported on the center truck. It is suggested the last 2 sentences be revised to agree with the other sections.	Clarification.	8) Requirements have been revis see Final RFTP.
9	2-14	2.2.3.1.c)	The specification requires a failure indication for "detectable failures". It is suggested "detectable failures" within the friction brake equipment be defined in Section 12. Obviously some failures are not detectable; i.e., failures within one disc brake unit.	Clarification.	9) Clarification provided. 10) Requirement revised. 11) Clarification provided.
10	2-14	2.2.3.1.f)	While a 200 MS response time may be possible from change in command signal to initial response, it may not be possible to achieve 10% of the requested command level. For example, ramping out of power to full service brake. Please comment.		12) Requirement remains unchang
11	2-14	2.2.3.2	This section specifies that dynamic and friction brake shall be used during emergency brake applications, assumingly under blended conditions. Sections 12.4.6.b), 12.6.9.b) and 12.7.4.d) appear to specify maximum friction brake during emergency brake applications, controlled by the variable load valve. Full friction brake plus dynamic will exceed adhesion demand and will result in a net reduction of brake performance. Please clarify these requirements.	Clarification.	13) Provide details in proposal
12	2-15	2.2.4	It is suggested the terms, ".....any rate less than desired." be revised to read, ".....a rate which corresponds to a minimum of 75% of the available adhesion."	Clarification and agreement with Section 2.2.4.4.	
13	2-15	2.2.4.3	It is suggested that the first sentence be revised to read, "...dynamic braking shall be reduced or removed..." It is suggested the method of correction of wheel slide be determined jointly by the supplier of the wheel slip control equipment, propulsion supplier and friction brake supplier, providing the specified wheel slip efficiencies are met. See WABCO's comments on Section 10.	More competitive bidding while maintaining performance requirements.	

BUILDER/SUPPLIER: WABCO

SECTION TITLE: System Requirements

SECTION NUMBER: 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
14	2-16	2.2.4.4	It is suggested the lower limit of adhesion be reduced to .05 as a criteria for wheel slip performance.	Improved wheel slide protection and increased performance.	14) Requirement revised.
15	2-16	2.2.4.5	It is requested the first sentence be deleted in order to permit wheel slip control based on other criteria than percent of limited slip of traction motors.	Permit use of service proven wheel slip equipment manufactured by the friction brake supplier.	15) Requirement revised.
16	2-17	2.2.7	It is suggested the load weight failure criteria for braking be based on AW0. This would agree with Article 12.7.3.	The current requirement of "... braking effort less than commanded" will result in undesired wheel slips at AW0/AW1 car weights.	16) Requirement revised.
17	2-17	2.2.8	Power to brake mode change will require more than 200 MS dead time.	Clarification.	17) Requirement revised.
18	2-18	2.2.9.b)	Section 4.5.1 specifies a trainline "emergency brake pipe"; however, no reference is made to this function. Please clarify if a pneumatic emergency trainline is required.	Clarification.	18) Emergency brake pipe has been eliminated.
					19) Requirement remains unchanged.
19	2-21	2.2.10.5.1.c)	The specified limit of 80 dBA @16 feet is extremely liberal. Section 12.7.6(a) specifies a WABCO D-4-S air compressor unit which can meet 65 dBA @16 feet at rated voltage and speed. It is suggested the noise requirement for auxiliary equipment be reviewed by LACTC. If an AC compressor unit is specified , a 68 dBA noise level can be met.	Reduced noise with service proven equipment.	20) Okay.
20	2-21	2.2.10.5.2.b)	Wheel slip dump valves and drain valves, which operate occasionally should be specifically exempt from this provision, but be included under 2.2.10.5.2.c).	Clarification.	21) Probably okay, make a proposal.
21	2-23	2.2.3	The 3rd papagraph requires adjusting points of components be self-locking. Waiver of this requirement; subject to LACTC approval, for service proven design is requested.	Service proven designs using standard hardware.	22) Same as number 21.
22	2-24	2.2.13.1	It is requested filters requiring infrequent replacement be exempt from the 3-minute replacement time specified, subject to LACTC approval.	Some filters or strainers require infrequent replacement or only replacement at major overhaul intervals.	

CARBUILDER/SUPPLIER : WABCO

SECTION TITLE : System Requirements

SECTION NUMBER : 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
23	2-28	2.3.1.1.F)	The subject leakage test should be part of the supplier's commercial test at his manufacturing facility. Pneumatic leakage at specified minimal rates may be permissible, dependent on the valve design and functions. It is suggested that any leakage be subject to LACTC approval.	Clarification and use of service proven equipment.	23) Provide information as part o proposal.
24	2-31	2.3.1.2.F)	The specification states that qualification tests be made on one of the first 3 sets of production equipment. If the components are standard and/or are made to production drawings, why must the pieces be from "the first production pieces"?	Timing to perform tests.	24) Provide information as part o proposal.
25	2-31	2.3.1.2.F)	Would the LACTC consider requests for waiver of qualification tests if the contractor can demonstrate compliance with the specified requirements through prior testing and/or service history of use on existing vehicles? Specifically, these requests for waiver would apply to endurance and environmental tests for equipment already tested to the specified requirements.	Potential cost savings and lower bid price.	25) Parts and required test must be identical. 26) Requirements revised.
26	2-31	2.3.1.2.F) (3)	It is believed the specified capacity test is to confirm the disc thermal capacity specified in Section 12.6.11. The following changes are suggested: - 2nd sentence: Change "system" to "disc" - 5th sentence: Change "brake unit" to "disc"	Clarification.	
27	2-55	2.3.4.1	Does the front end mock-up include underfloor equipment?	Clarification.	27) No, there is a separate underfloor mock-up.
28	2-56	2.3.4.2	The requirement that "actual equipment" be used for the mock-up may adversely affect the overall car delivery schedule.	Clarification.	28) Simulated equipment okay unti production equipment is available, it must be fitted to the mockup.

CARBUILDER/SUPPLIER : ABCO

SECTION TITLE : Coupler and Draft Gear

SECTION NUMBER : 4

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	4-5	4.5.1	The specification states that the coupler must have provision for a trainlined "Emergency Brake Pipe"; however, the function of this trainline is not specified in either Section 2, System Requirements, nor in Section 12, Friction Brake Subsystem. Please clarify.	Clarification.	1) Brake pipe has been eliminated, see Volume I.

CARBUILDER/SUPPLIER : WABCO

SECTION TITLE : Operator's Cab

SECTION NUMBER: 5

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	5-5	5.3.14	The last sentence of this paragraph prohibits silk screen painted identification of gages. It is requested the duplex air gage specified in Section 12.7.10.b) be exempt from this requirement since the gage face is covered with a shatterproof lens.	Standard Gage Design.	1) Okay for gages with lenses.

CARBUILDER/SUPPLIER : WABCO

SECTION TITLE : Auxiliary Electrical Equipment

SECTION NUMBER : 9

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	9-5	9.2	It is requested the LACTC consider the use of 208 VAC 3 phase power for the friction brake air compressor specified in Sections 12.4.f) and 12.7.6.	Weight savings and lower initial capital cost of the compressor unit. Lower maintenance cost of an AC motor.	1) No, want ability to run vehicle if MA fails.

BUILDER/SUPPLIER : wABCO

SECTION TITLE: Propulsion System & Control

SECTION NUMBER: 10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	10-1	10.1	This paragraph as well as Section 10.6.9 specify the wheel slip detection system be an integral part of the propulsion equipment. It is requested the specification be revised to permit wheel slip control equipment supplied by either the propulsion supplier or friction brake supplier.	Permit the use of service proven wheel slip equipment manufactured by a friction brake supplier.	1) Prefer it to be part of propulsion equipment. Describe alternative in proposal.
2	10-6	10.6.9	In addition to permitting wheel slip control furnished by the friction brake supplier, it requested the method of wheel slip control be left to the wheel slip control supplier, providing the specified performance requirements can be met.	Permit the use of service proven wheel slip equipment manufactured by a friction brake supplier.	2) Most friction brake w/s control is on/off type and not adequately efficient.
3	10-7	10.6.10	Is over speed protection considered part of the propulsion logic or part of the wheel slip logic? Can this function be part of the car carried ATS system specified in Section 14?	Clarification.	3) No, overspeed feature in required ATS.
	10-8	10.6.14	Is the no-motion logic considered to be part of the wheel slip control logic?	Clarification.	4) Part of Propulsion logic.
5	10-8	10.6.14	Can the vital output relays be physically separate from the unit which detects no motion?	Clarification.	5) Make a proposal, inter car wiring not permitted.
6	10-14	10.7.9	Since the center truck does not have a propulsion gear unit, a separate axle mounted gear or phonic wheel will be required. If the speed sensing on the motor trucks is taken from the high speed pinion, it may not be possible to provide the same pulse frequency on the center truck. It is requested that a different pulse frequency be permitted on the center truck, subject to LACTC approval.	Clarification.	6) No, not permitted.
7	10-14	10.7.9	It is requested the requirement for stainless steel connector shells be deleted. Section 17.11.2 does specify Mil grade connectors.	Cost.	7) Requirement remains.

CARBUILDER/SUPPLIER : WABCO

SECTION TITLE: Truck Assemblies

SECTION NUMBER: 11

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	11-1	11.1	Please confirm that service proven components, though not previously supplied on a specific service proven truck, meet the service proven requirements of this section.	Clarification.	1) This statement is correct.
2	11-3	11.2.1	The load weight transducer should not be mounted on the truck.	High vibration on truck mounted equipment will cause premature failure of the transducer.	2) Agree.
3	11-3	11.2.1	The load weigh transducer used for the friction brake equipment should be supplied by the friction brake supplier.	Integrity of the friction brake equipment.	3) Agree.
4	11-4	11.2.1	Does the $\pm$5% tolerance apply to the tolerance of transducer output, variation of transducer output at a specific pressure, or air spring pressure variations?	Clarification.	4) Requirement deleted, see Final RFTP.
					5) Requirement remains unchanged.
	11-4	11.2.2	It is suggested the specification be revised to specify 5 leveling valves per vehicle; two on the motor trucks, one on the center truck.	The 5 valve arrangement provides maximum overall leveling control while minimizing instability.	

CARBUILDER/SUPPLIER: WABCO

SECTION TITLE: Friction Brake System

SECTION NUMBER: 12

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	12-1	12.1	It is requested that wheel slip control logic may be furnished as part of the friction brake equipment or as part of the propulsion equipment.	See WABCO's comments on Sections 10.1 and 10.6.9.	1) Possibly okay, provide details in proposal.
2	12-1	12.1	Please confirm the brake equipment may be based on a composite of several service proven designs, specifically arranged to meet the LACTC technical requirements, including product improvements related to increased reliability, mantainability and weight savings.	Clarification.	2) Okay, provide details.
3	12-1	12.2.b)	See WABCO's comments of Section 2.2.3.2 relative to friction and dynamic brake during emergency brake applications.	Clarification.	3) Clarification provided, requirements result from GO 143 requirements.
4	12-2	12.2.b)	It is requested that detectable failures be specified--see WABCO comment on Section 2.2.3.1.e).	Clarification.	4) Refer to Final RFTP Section 2.1.1b.
5	12-2	12.3.a) & (b)	It is suggested that Article a) be deleted entirely and Article b) be revised to read: "The friction brake system....." also refer to WABCO's comment on Section 2.1.1.2.b).	Clarification.	5) Revised, see Final RFTP.
6	12-2	12.4.a)	Again it is requested the specification be revised to permit wheel slip control logic as part of either the propulsion or friction subsystem.	Permit service proven equipment supplied by the friction brake supplier.	6) See prior responses.
7	12-3	12.4.b)	This paragraph specifies full friction brake controlled by the variable load valve during emergency braking. Blending is specified in other sections. See WABD comments on Section 2.2.3.2.	Clarification.	7) Revised in Final RFTP, refers to emergency friction braking.
8	12-3	12.4.d)	It is suggested the word "toggle" be replaced with "release lever".	Clarification.	8) Spec. includes "or equivalent."
9	12-3	12.4.d) & (e)	If parking brake portions are required on motor truck only, the disc brake unit complete will not be interchangeable on a unit basis between power and center trucks. In addition, depending on car weight distribution among trucks, a smaller diameter actuator may be used on the center truck.	Clarification.	9) Agree, requirements revised. 10) No, see previous comment.
10	12-4	12.4.F) & 12.5	It is requested the LACTC consider the use of an AC driven compressor unit.	Weight saving and lower initial cost-reduced maintenance requirements for AC motor.	11) Requirements revised.
11	12-4	12.6.1.a)	The specified $\pm$10% tolerance on brake rates cannot be under all friction braking. See WABCO's comments on Section 2.2.3.1.a).	Clarification.	

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CARBUILDER/SUPPLIER : WABCO

SECTION TITLE : Friction Brake System

SECTION NUMBER : 12

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
12	12-5	12.6.1.c)	The reference to Section 10.5.9 should be revised to read 10.6.9.	Clarification.	12) Agree, Final RFTP revised.
13	12-5	12.6.3.d)	The reference to Section 10.5.3 should be revised to read 10.6.3.	Clarification.	13) Agree, Final RFTP revised.
14	12-5	12.6.3.e)	The reference to Section 10.5.9 should be revised to read 10.6.9.	Clarification.	14) Agree, Final RFTP revised.
15	12-5	12.6.3.e)	See WABCO's comments on Section 10.6.9 relative to permitting wheel slip control provided by the friction brake supplier.	Permit service proven wheel slip equipment manufactured by the friction brake supplier.	15) Make a proposal.
16	12-6	12.6.3.f)	The reference to Section 10.5.9 should be revised to read 10.6.9.	Clarification.	16) Agree, Final RFTP revised.
17	12-6	12.6.3.f)	It is requested that wheel slip magnet valve specified in this section be part of the electronic pressure servo system specified in Section 12.7.4 if the wheel slip control is provided by the friction brake supplier. If wheel slip control is provided by the propulsion supplier, a separate wheel slip magnet valve should be provided at each truck.	Potential of reducing component count without reduced performance if wheel slip control is furnished by the friction brake supplier. Conversely, if wheel slip control is furnished by the propulsion supplier, a separate wheel slip magnet valve should be provided due to safety considerations.	17) Possibly acceptable, make a proposal.
18	12-8	12.6.9.b)	This section indicates that emergency brake will be all friction and not blended as stated in other sections. See WABCO comments on Section 2.2.3.2. Please clarify.	Clarification.	18) Clarification provided.
19	12-8	12.6.10	Depending on final vehicle weight distribution, smaller actuators may be more suitable on the center truck.	Clarification.	19) Requirements revised. 20) Requirements revised.
20	12-8	12.6.11.a)	The specified temperature limit of 600°F cannot be met under all friction braking at higher car weights. It is WABD's intention to perform a dynamometer test prior to the release of a technical proposal to determine what maximum temperatures could be expected on the LACTC profile.	Clarification.	21) "a's" limit does not apply in "b."
21	12-8	12.6.11.b)	If initial disc temperature is 600°F at the beginning of the stop from 57 MPH, then the disc temperature during the stop will exceed the 600°F temperature limit specified in Section 12.6.11.a).	Clarification.	

CARBUILDER/SUPPLIER : WABCO

SECTION TITLE : Friction Brake System

SECTION NUMBER : 12

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
22	12-8	12.6.11.c)	Under all friction braking on the motor trucks, the temperature limit of 600°F may be exceeded even with the 40 MPH speed restriction. Note, if the center truck is always providing all friction brake in direct proportion to the weight on the center truck, the 600°F limit will be exceeded since the 40 MPH speed restriction only applies to conditions where dynamic brake is inoperative.	Clarificiation.	22) Requirement revised.
23	12-9	12.7.2	It is suggested the requirements for the caliper also specify steel pins and bushings with lubrication fittings at pivotal points.	Insure free floating design characteristics without binding.	23) Requirement may conflict with service proven equipment. 24) Requirements revised, see Final RFTP.
24	12-9	12.7.2	The specified shoe life of 15,000 miles for the center truck is not achievable since center truck braking is all friction braking irrespective of the level of dynamic braking. Estimated shoe life is 900 to 1000 miles for the center truck. The 25,000 mile criteria for motor trucks should be reduced to 20,000 miles.	Clarification.	25) Requirements are as stated in Final RFTP. 26) Possibly okay, provide details in proposal.
25	12-10	12.7.3	Unless the wheel slip control is provided by the friction brake supplier, a separate wheel slip magnet valve should be provided outside of the electronic pressure servo system specified in Section 12.7.4 (See WABCO's comments on Section 12.6.3.f).	Clarification.	27) Same as number 26. 28) Same as number 26.
26	12-11	12.7.4.b)	For electronic pressure control as described in the third paragraph, the use of a relay valve and pilot pressure are not required if high capacity magnet valve are used. It is requested the specification be revised to permit high capacity magnet valves without an additional relay valve.	Decreased components without decrease in performance.	
27	12-11	12.7.4.b)	If a relay valve is not used, the feedback pressure transducer will monitor the pressure in the brake cylinder line.	Clarification.	
28	12-12	12.7.4.d)	It is requested the word "pilot" be deleted, since pilot pressure is not required with high capacity magnet valves and variable load valves.	Clarification - See WABD comments on Sections 12.7.4.6) and 12.7.4.e).	

C.. BUILDER/SUPPLIER : WABCO

SECTION TITLE: Friction Brake System

SECTION NUMBER: 12

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
29	12-12	12.7.4.e)	Relay valve should be optional depending upon type and capacity of servo-valve, magnet valve and variable load valve.	Decreased component without decreased performance.	29) Possibly okay, provide details in proposal.
30	12-12	12.7.4.g)	It is requested the specification be revised to specify an accuracy of ±2% for transducers over the specified operating conditions. The ten year life requirement cannot be met. It is requested the specification be revised to specify a transducer life of 3 million cycles, which must be verified by qualification testing.	Based on tests at WABCO, the recommended accuracies and life are achievable using current technology.	30) Requirement revised, see Final RFTP.
31	12-13	12.7.6.a)	It is requested the LACTC consider using an AC motor for the air compressor unit.	Lower weight and initial cost. Lower maintenance cost of AC motors.	31) No, requirement remains.
32	12-13	12.7.6.a)	It is suggested the noise level be specified as 65 dBA at 16 feet when the unit is operating at rated speed and voltage. A 68 dBA noise limit should be specified for units with AC motors.	Noise reduction.	32) Requirement revised.
33	12-14	12.7.6.f)	It is requested that thin-walled reservoirs fabricated from high tensile steel be permitted. Nominal wall thickness would be .104 inch.	Weight savings.	33) Possibly okay, provide information in proposal.
34	12-14	12.7.6.f)	Although a "five times" safety factor is used in the ASME design criteria, the pressure test for ASME certification is based on 1.5 times the working pressure.	Clarification.	34) Possibly okay, provide information in proposal.
35	12-17	12.7.9.a)	In lieu of the specified brake cylinder pressure switches, it is requested the friction brake supplier be permitted to use the brake cylinder pressure transducer and friction brake control logic to develop the annunciation output signals defined in Section 12.7.10.	Lower component count, without degraded performance.	35) No, want an independent check circuit.
36	12-17	12.7.9.a)	If a pressure switch, as currently specified, is used for this function, a relay would be required to provide sufficient contacts to generate the annunciation output signals specified in Section 12.7.10.	Clarification.	36) Yes, a relay will be required.
37	12-19	12.7.11	It is suggested the Specification be revised to specify the brake cut-out switch is part of the release mechanism which extends to either side of the vehicle.	Clarification.	37) Either way may be permitted.

CARBUILDER/SUPPLIER : WABCO

SECTION TITLE : In-Service Support

SECTION NUMBER : 15

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	15-1	15.1.1	Please clarify the terms, "electrically reproducible copies". Does this refer to a specific process?	Clarification.	1) RFTP has been clarified. 2) Schedule provided in Final RFTP. 3) Requirement revised. 4) Not allowed, use test relays or some other means.
2	15-4	15.2	WABCO reserves comment on the delivery schedule for test equipment until such time as a delivery schedule is provided.	Clarification.	
3	15-4	15.2.1	Will the LACTC have an environmental chamber to perform "tests of an environmental nature" as specified?	Clarification.	
4	15-6	15.2.2.2	Due to safety implications, it may be necessary to disconnect cables or "jumpers" within the friction brake control logic to perform on car testing. Such requirements should be subject to waiver, based on LACTC approval.	Clarification.	

CARBUILDER/SUPPLIER : WABCO

SECTION TITLE : Management

SECTION NUMBER : 16

EM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	16-2	16.7	If a major subcontractor has an existing program for serialization and configuration control, is the contractor's serial number also required?	Clarification.	1) Possibly okay, provide details in proposal.

CARBUILDER/SUPPLIER : WABCO

SECTION TITLE : Materials and Workmanship

SECTION NUMBER : 17

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	17-3	17.2.2	It is assumed the fastener requirements in the first paragraph applies to the car body, and underfloor equipment may be furnished with standard plated hardware per Section 17.2.3. Please confirm.	Clarification.	1) This is correct.
2	17-4	17.2.2	Please confirm that Grade 2 bolts may be used on underfloor mounted equipment assemblies, and the Grade 5 bolt requirement applies to hardware used to mount the equipment to the vehicle.	Clarification.	2) Requirements clarified in Final RFTP, Section 17.
3	17-31	17.13.1	It is recommended that underfloor equipment be painted glossy black per Federal Spec. TT-E-527. Light colored underframe equipment will be soiled easily.		3) Agree.
4	17-35	17.15.1	It is suggested that MIL-217 Specification be used as a design criteria for electronic design and analysis.	Alternate design criteria.	4) This will be considered, make a proposal.
5	17-38	17.15.3.g)	Although most silicon semiconductors are available for the specified temperature range; most CMOS devices are rated at -40^{o} to $+85^{o}$C. While less than specified, they still exceed the operating temperature range. CMOS logic devices are recommended for transit microprocessor applications due to low power consumption, noise rejection and temperature stability. It is therefore requested that lower temperature range be permitted, subject to LACTC approval, for CMOS logic devices.	Standard component availability using CMOS logic.	5) Same as above. 6) They will be subject to LACTC approval. The intention is to socket only expensive or failure prone components.
6	17-39	17.15.4.d)	While it is agreed that major components, eproms, CPU, RAM, etc., be socketed, simple 14 or 16 pin dual in line chips, such as "and", "or" gates are normally not socketed. Is this acceptable, subject to LACTC approval?	Clarification.	7) May be considered, provide details in proposal.
7	17-39	17.15.4.d)	It is requested the specification permit "pin only" sockets which do not have body material. The electrical and mechanical properties of the pin sockets would generally conform to the specified MIL Specifications.	Existing CPU board design and clearance requirements on the CPU board.	

CARBUILDER/SUPPLIER : WABCO

SECTION TITLE : Materials and Workmanship

SECTION NUMBER : 17

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
8	17-41	17.5.5.a)	It is requested that Eproms be used in place of Proms. The cost associated with modifying software is reduced significantly. In addition, it is requested the specification permit storage of constants in Eproms not RAM in order to simplify configuration control and maintenance of the software. Battery back-up at the board level would not be required to protect software integrity.	Cost savings relative to modification and maintenance of software. The need for battery back up at the board level would not be required thus reducing component count and increasing reliability.	8) Alternatives will be permitted, provide details in proposals.
9	17-46	17.17.4	Overcurrent protection for the microprocessor should be via fuses, not circuit breakers. Circuit breakers do not afford adequate protection for this type of application.	Clarification.	9) Make a proposal.

CARBUILDER/SUPPLIER : WESTCODE

SECTION TITLE: _____

SECTION NUMBER: _____

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.		2.2.7	In the event of a failure of the load compensation system, the friction brake system could be arranged to provide braking effort that is either not less than that normally provided for AWO or not greater than that normally provided for full load. This arrangement protects against a system malfunction which would allow air at main reservoir pressure to be supplied directly to the brake cylinders. This feature would be incorporated into the Analog Brake Control Units.		1. Requirements have been revised, see Final RFTP Section 2.2.7.
2.		11.2.2	A suspension system which utilizes two (2) leveling valves per truck to control the secondary air spring suspension would provide more accurate control and quicker in response to load changes.		2. Two leveling values per truck are required.
3.		12.6.9	This function as described does not require the emergency brake pipe detailed in Paragraph 4.5.1, General Requirements. Elimination of the trainline emergency brake pipe will simplify the overall vehicle requirements and, by using an energize-to-release arrangement for controlling the emergency friction brake, the vehicle safety will not be reduced.		3. The requirement for an emergency brake pipe has been eliminated.
4.		12.7.4	An electropneumatic converter can be incorporated into this unit which will control the piloted brake cylinder pressure in response to the electric control current from the friction brake ECU. This electropneumatic converter pressure which is inversely proportional to the electric control current. This arrangement is more reliable and less complicated than a servo system with application and release magnet valve.		4. Possibly acceptable, provide details in your proposal for LACTC review.

CARBUILDER/SUP[illegible] WESTINGHOUSE TRANSPORTATION DIVISION

SECTION TITLE: Systems Requirements

SECTION NUMBER: 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPO
1. 2.1.1.2b	2-3	-	Suggest that this paragraph be expanded to clarify those circuit elements which are not independent such as the compressor and associated piping, the human interface components (foot pedal, linkage, rheostat, etc.) and the trainlined input command signals.	This will avoid any misinterpretation and allow potential suppliers to accurately describe and price their offering.	1. Intention is to have independent as having been requested by trainlines or starting at trainlines.
2. 2.1.4c	2-5	-	Does the absence of a precipitation rate after "car wash" imply that one inch/hour should be used as an equivalent rate or is this simply indicating that the vehicles will be subject to whatever precipitation rate is generally anticipated from a "car wash."	Clarification requested to establish firm design criteria and allow a comparative evaluation of proposal prices.	2. Clarification has been provided. 3. Requirement has been revised.
3. 2.1.4d	2-6	-	Requiring operation with water three inches above the rail at 25 MPH appears to be an excessive specification which will cause undercar equipment cases to be designed heavier and more costly than necessary for the remain-ing service conditions. It would appear less expensive from both an initial capital cost and life cycle cost basis to eliminate the possibility of high water levels through civil design. If this is not possible, a more restrictive speed under these conditions should be imposed. We suggest 5 MPH.	Realistic design criteria will result in lower procurement and operating costs.	4. Definition provided, see Final RFTP.
4.2.2b	2-11	-,	Please define "full load car" in terms of AWO through AW3.	Clarification requested to accurately define design criteria and permit a comparative evaluation of proposal prices.	5. I. See 2.2b response II. The train requirement places design constraints on car body and coupler.
5. 2.2c	2-11	1,2	I. Please define "fully loaded" in terms of AWO thru AW3. II. Please clarify the phrase: "The above requirement shall also apply to train operation . . .". What is being requested which is not covered in the previous paragraph? Is this paragraph attempting to specify the trainline signal generator load or capacity?	Clarification requested to establish firm design criteria and permit a comparative evaluation of proposal prices.	

CARBUILDER/SUPPLIER: WESTINGHOUSE TRANSPORTATION DIVISION

SECTION TITLE: Systems Requirements

SECTION NUMBER: 2

	ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPO
6.	2.2d	2-12	-	Please define at what point the 750 VDC voltage will be measured to test the equipment for specified performance.	Clarification requested to establish unambiguous and uniform design criteria and to facilitate comparative proposal evaluation.	6. 750 VDC at the pantograph, the 750 volt is to be between trolley wire and rail.
7.	2.2.2	2-12	1,2	The requirement that propulsion and drive unit be designed to operate continuously at the "balancing speed" appears excessive. No maximum "balancing speed" is specified and given the performance specified in 2.2.1a), b) and c), the "balancing speed" will most probably be much higher than 55 or even 65 MPH. Since a 57 MPH overspeed cutoff is required, a continuous operation speed of 57 or, at worst, 60 MPH would appear reasonable.	Clarify intent and reduce system cost.	7. It is not unrealistic require continuous operation at design balance speed in order obtain an acceptable margin for normal operation. 8. A technique similar to what Welco uses on WMAT is acceptable. 9. See response to Item
8.	2.2.2	2-12	1,2	What type of "power removal" feature is being requested in the first paragraph? Must this be different from the overspeed cut-off since the minimum value for maximum safe speed is 8 MPH above the overspeed point?	Clarify intent and minimize system cost.	10. Nothing LACTC can do, they are a governing bo and can alter their interpretations. The figures within the RF are LACTC's interpretation of GO143, w the CA PUC has not objected to, to date.
9.	2.2.3.1 & 2.2.3.1a & 2.2.3.1c	2-13,14	-	Please define "full load" in terms of AW0 thru AW3.	Clarification requested to establish firm design criteria and permit a comparative evaluation of proposal prices.	11. Speed taper in the 57 mph range not require
10.	2.2.3.1	2-13	-	Please specify how the CPUC has interpreted General Order 143 for this contract.	As written, this paragraph would require each potential bidder to appeal to the CPUC for an interpretation of CPUC G.O. 143. This is an unnecessary expense and could result in non-uniform determinations.	
11.	2.2.3.1 & 2.2.3.1a & 2.2.3.1c	2-13	-	These paragraphs do not acknowledge the effect of entry speed on rail adhesion. A brake request at the full braking rate without brake rate taper will invariably initiate a slide at the 57 MPH entry speed. Adding a reasonable brake taper will minimize reliance on the skill of the train operator to prevent slide at high entry speeds.	Reduce system costs and improve brake system reliability.	

CARBUILDER/SUPPLIER: GHOUSE TRANSPORTATION DIVISION

SECTION TITLE: Systems Requirements

SECTION NUMBER: 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPC
12.	2.2.4.2	2-15	-	There appears to be a typographical error in this paragraph. The word "slide" should be "spin".	Correct typo.	12. Corrected.
13.	2.2.12	2-23	2	The referenced figure (2-1) does not contain any EMI/RFI limit data. Please supply the referenced data.	Corrects specification for uniform requirements.	13. Requirements revised for clarification.

CARBUILDER/SUPPLIER: WESTINGHOUSE TRANSPORTATION DIVISION

SECTION TITLE: Car Body

SECTION NUMBER: 3

	ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPO
14.	3.1	3-1	1	The car body proposed is of a service proven design. 44 units of similar design have been in service for two years. An additional 130 LRV's similar to the specified vehicle are in construction. We recommend that the requirement for cars in revenue service "for no less than three years" be adjusted to allow for situations such as this where the car fleet has substantial revenue service history.	Two years of revenue service provides service proof of design with a significant level of confidence. The additional months necessary to achieve three full years would not appreciably affect the proof in service achieved after two years. Benefit to LACTC: increased competition for this procurement and the advantage of viewing additional candidate cars' capabilities and features.	14. No.
15.	3.2	3-1	1	The vehicle proposed can be produced with LAHT steel, however consideration should be given to a full stainless steel structure.	This is a well-proven construction and has substantial advantages for long life, strength and low maintenance, at a low cost premium.	15. No stainless for an LRV, which will have frequent exposure to highway traffic (SS very difficult to repair/patch the major problem would be complex end framing).
16.	3.3	3-2	1	The car body proposed has a space frame construction.	This permits side panels to be rivetted and consequently to be simply replaced after street collisions.	16. Not acceptable.
17.	3.7.5	3-11	1	Please include the criteria which LACTC would use to approve or disapprove proposed applications per the requirements of this paragraph.	Provide uniform evaluation criteria and pricing of proposals.	17. The RFTP allows bolts in tension where an approve safety strap is provided This requirement pertain to underfloor equipment, i.e. motors, compressor equipment, boxes, etc., which if it became unsecured would result i an unsafe condition.
18.	3.9.1	3-13	1,2	Consideration should be given to the use of a complete fibreglass roof covering. The proposed vehicle is from a family of vehicles which have used a fibreglass roof covering in revenue service for seven years with notable success.	Fibreglass roof covering provides an electrically insulated roof surface characterized by low maintenance and a pleasing appearance.	18. No, concern over flammability and structural integrity.
19.	3.16.3	3-23	1	Please define a ready removal hold-open device and advise what LACTC will consider as suitable.	Clarification of intent.	19. Clarified in RFTP Volume I.

BUILDER/SUPPLIER : WESTINGHOUSE TRANSPORTATION DIVISION

SECTION TITLE : Operator's Cab

SECTION NUMBER : 5

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPO
5.2	5-1	2	Consideration should be given to the use of melamine faced plywood (structural grade) without the aluminum skin.	Plymetal (aluminum skin) is not necessary with high quality plywood.	20. No, flammability requirements cannot be met.

CARBUILDER/SUPPLIER : WESTINGHOUSE TRANSPORTATION DIVISION

SECTION TITLE : Passenger Doors

SECTION NUMBER : 6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPO
6.1	6-1	2	Consideration should be given to the use of outside sliding doors.	Outside sliding doors have less interference with platforms, and have a high level of reliability relative to other door systems.	21. No - presents sealing problems - ugly - determined design philosophy is to use swing plug or outward folding.

CARBUILDER/SUPPLIER: ...HOUSE TRANSPORTATION DIVISION

SECTION TITLE: Auxiliary Electrical Equipment

SECTION NUMBER: 9

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RES
22.	9.2	9-5	1	Would LACTC consider accepting a suitable static inverter in lieu of the motor alternator?	A static inverter can provide cost, weight, volume and maintenance advantages compared to a motor alternator.	22. No, requirement remains as written.
23.	9.3.5	9-8	-	Ground fault detection on the low voltage battery system appears to be an unnecessary feature. Please explain the safety function provided by this circuitry.	Elimination of this requirement will provide cost and reliability advantages to LACTC.	23. Requirement deleted.

CARSUILDER, SUPPLIER : WESTINGHOUSE TRANSPORTATION DIVISION

SECTION TITLE: Propulsion System & Control

SECTION NUMBER: 10

	ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESP(
24.	10.2	10-2	4	Would resistive field shunts be an acceptable alternative when furnished as part of a chopper control scheme?	This would be a lower cost and lighter weight alternative to inductive shunts which are not needed to suppress the surges associated with switched resistor controls.	24. Requirement revised, see Final RFTP.
25.	10.2.1.3	10-3	1	To provide the jerk limits specified and the dynamic brake fade out speed specified, it appears that the number of resistance notches specified is excessive. Would a lower number be acceptable?	Allow standard design practice, lower cost and improve reliability.	25. Chopper control only permitted, see Final RFTP.
26.	10.2.1.3	10-3	2	A control scheme which requires cam run-back under maximum loading for the resistor notches will require heavy tip maintenance regardless of the type of arc chutes and blow-out coils utilized. We recommend a cam repositioning scheme be specified which does not allow arcing of the cam switches.	Improve system cost effectiveness and significantly reduce maintenance cost.	26. See previous response.
						27. See previous response.
27.	10.2.1.3	10-3	3	Would pnuematically operated cam be allowed? Air is already available on the vehicle for the friction brakes and air operated devices are otherwise permitted on the vehicle (see 10.6.11).	Potential cost reduction and allow broader selection of well-proven equipment.	28. See previous response.
28.	10.2.1.3	10-3	3	Rather than the specified two speed cam drive motor, would a continuously variable rate drive motor scheme be acceptable.	More accurate control using existing scheme. Lower cost.	29. Yes, to minimize unsprun weight on axle and torsional resistance in axle coupling.
						30. No, Class H insulation i required with no greater than Class F temperature rise.
29.	10.2.2	10-3	-	Is the intent of this paragraph to specify resilient mounting of the gear unit to the frame, to the axle, to the motor or to all three?		
30.	10.3.1	10-3	-	Would class H temperature rises be acceptable for motors fully insulated and impregnated with all class H materials?	Allow cost effective utilization of service-proven motors within their design rating.	

SECTION TITLE: Propulsion System & Control

SECTION NUMBER: 10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPON
31. 10.3.1	10-3	-	If nominal line voltage is 750 Vdc, why is 825 Vdc specified for the Normal Duty?	This increases cost and weight of the motors without providing any gain in reliability if the actual nominal voltage is 750 Vdc. Where an accelerating consist sees higher voltage due to regeneration, it will be only momentary and not a continuous parameter.	31. To provide a margin of safety.
32. 10.3.1a	10-4	-	We assumed Appendix 1 is the same as Appendix "A".	Spec clarification.	32. Appendix "A" is correct.
33. 10.3.1d.	10-4	-	Appendix "A" track profiles did not indicate traffic light stops. Please provide data.	Clarification of duty cycle. Cost impact.	33. Included in Final RFTP.
34. 10.3.1e	10-4	-	Appendix "A" profiles did not indicate speed limits. Please provide data.	Clarification of duty cycle. Cost impact.	34. Included in Final RFTP.
35. 10.4.1	10-4	-	Does this section apply to line ripple generated by a chopper controller?	Spec clarification. Cost impact.	35. Yes.
36. 10.4.2	10-4	-	EMI limits are not defined in 2.2.12. Please clarify.	Spec clarification. Cost impact.	36. Clarification provided in Final RFTP.
37. 10.6.4	10.5	-	Since the maximum operational speed of the vehicles is 55 MPH, this paragraph is essentially stating that the dynamic brake must provide the braking requirements without taper at all car weights. Is this the intent of this paragraph?	Spec clarification. Cost impact.	37. Requirement revised, see Final RFTP.
38. 10.6.9	10-6	-	Please define "gross" and "minor" spins and slides.	Spec clarification. Cost impact.	38. Generally, "gross" requires exhausting all BCP, "minor" requires partial release.
39. 10.6.13	10-8	3	Are vibration and shock resistant detented screws acceptable as a "locking feature" for the wheel wear adjustment?	Cost impact. Allow current, service-proven practice.	39. Possibly, need details.

CARBUILDER/SUPPLIER: WESTINGHOUSE TRANSPORTATION DIVISION

SECTION TITLE: Propulsion System & Control

SECTION NUMBER: 10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESP
40.	10.7.1	10-9	2	Type Please explain if the intent of this sentence is to exclude rolled steel or fabricated solid steel frames. The frame of a D.C. motor can be considered part of the magnetic circuit.	If laminated frames are required, the cost to LACTC will increase substantially.	40. Revised in Final RFTP, rolled or fabricated frames okay.
41.	10.7.1	10-10	10	Shaft Coupling - Providing both a splined and taper fit is not normal practice. Would a conventional taper fit be acceptable?	Cost impact, permit normal industry practice, use of service-proven application	41. Taper fit is acceptable.
42.	10.7.1	10-10	14	Armature Balance - Our motor designs use a weight retention groove and screw arrangement. Weights must be loosened for commutator tightening. Is this acceptable?	Cost impact, use of service-proven design	42. Possibly okay, provide details in proposal.
43.	10.7.1	10-10	16	Commutator - Our motor fabrication uses a process which forms the mica in a set back position without the need for undercutting. Will this be acceptable?	Cost impact.	43. Provide details in proposal for review.
44.	10.7.1	10-11	27	Antifriction Bearings - Please define the term "permanently". Does this imply for the expected life of the motor? Is maintenance not allowed?	Cost impact.	44. Provide details in proposal on proposed maintenance schedule.
45.	10.7.5	10-13	-	Is the intent of this paragraph to provide contactor arc chute venting to the outside of the undercar equipment enclosure?	Cost impact. Equipment reliability.	45. Yes, if the contactor can open under load then it must be vented to outside.

CARBUILDER/SUPPLIER : WESTINGHOUSE TRANSP[illegible]TION DIVISION

SECTION TITLE: Friction Brake System

SECTION NUMBER: 12

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESP[illegible]
12.6.11b	12-8	-	Please define "fully loaded" in terms of AWO thru AW3.	Clarification for duty cycle design. Cost impact.	46. Final RFTP clarifies, see 2.1.7e).
12.4a & 12.7.3	12-2 12-10	- 1-3	Would service brake control electronics integrated with the propulsion electronics be acceptable?	Cost impact. Allow use of standard hardware and permit a better integration of the spin/slide and brake blending functions.	47. Prefer separate logic packages for safety, reliability, and maintenance purposes. However, if system meets all other requirements including service-proven criteria, then submit in proposal for evaluation.

CARBUILDER/SUPPLIER: WESTINGHOUSE TRANSPORTATION DIVISION

SECTION TITLE: In-Service Support

SECTION NUMBER: 15

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPO
15.2.2.7	15-8	-	Since the spin-slide system is specified as an integral part of the Propulsion System, why is a separate PTE required?	Cost impact.	48. Okay as part of propulsion PTE.

CARBUILDER/SUPPLIER : WESTINGHOUSE TRANSPORTATION DIVISION

SECTION TITLE: Appendix "A"

SECTION NUMBER:

	ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RES
49.	A.1.2	Appen. "A"	-	To what does Note 1 refer? There were drawings for MC (Mid Corridor) -1, 2 & 3 and drawings for LB (Long Beach Blvd., Two-Way) -5 but no drawings appeared to reference an MC-5 alternative.	Specification clarification.	49. Ignore MC-5 reference.
50.	A.1.2	Appen. "A"	-	The arial view maps and the route rotations on these maps are not legible. Please furnish potential suppliers with legible copies.	Specification duty cycle clarification.	50. See Final RFTP Appendix A. Add notations to drawings depicting mandatory stops.
51.	A.1.2 & A.1.3 & A.1.4 & 10.3.1.d	Appen. "A" 10-4	- -	Please clarify where the "additional traffic light stops" are located. Also, please note the locations of any other known or expected stop or delay points such as junction switches and signals, pedestrian grade crossings, vehicular grade crossings, etc.	Specification duty cycle clarification.	51. Same as above.
52.	A.1.2	Appen. "A"	-	On Figures 26 and 27, what is the grade between STA 385+85 and STA 414+75? Can a constant grade be assumed based on the apparent 7.8 ft. elevation change?	Spec profile clarification.	52. 1 percent grade.
53.	A.1.4	Appen. "A"	-	Drawing C-323 is missing. Please provide.	Spec profile is incomplete and duty cycles cannot be accurately determined.	53. See Final RFTP Appendix A.
54.	A.1.2 & A.1.3 & A.1.4	Appen. "A"	-	Please indicate the speed restrictions on the Profile Drawings.	Without this data, unrealistic run times and duty cycles will be estimated.	54. See Final RFTP Appendix A. All trains must stop by the end of platform.
	- -	Appen. "A"	-	Please define the station platform length and the speed restriction within the platform limits.	Needed for accurate run time and duty cycle calculations.	
55.	A.1.2 & A.1.3 & A.1.4	Appen, "A"	-	Please define, for the end-of-line stations, if the turnback will be a loop or a crossover and if a crossover, if in front of or behind the platform.	Needed for accurate run time and duty cycle calculations.	55. End of line stations ha no loops, and crossover in front of and behind platforms. RFTP has be modified to require propulsion duty cycle b determined with possibl worst case.

CARBUILDER/SUPPLIER : ~~ACEC BELGIUM~~

SECTION TITLE : ~~PROCUREMENT PROCESS~~

SECTION NUMBER : 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-1	2.0.	We propose to add : In certain paragraphs of this document reference is made to SCRTD. It is understood that for all contractual matters SCRTD will be represented by LACTC.	More contractual clarity.	1. Agree, will clarify.
2	CP-3	2.3.2.	Addenda to RFTP We propose to modify as follow : .....prospective proposers twenty (20) working days before the RFTP due date.	Depending on the substance of the addendum more or less time will be required but 10 days is really too short.	2. Requirement, remains unchanged.
3	CP-8	2.5.2.	Bid contents The amount of the bid bond should be specified. We propose an amount of 400.000 dollars.	Bid bond amount is not specified. Fixed amount bonds are more practical than bid bonds expressed as a percent of the bid price.	3. Requirement for 10% of total bid.

CARBUILDER/SUPPLIER : ACEC BELGIUM

SECTION TITLE: PROPOSAL INSTRUCTIONS

SECTION NUMBER: 3

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
4	CP-11	3.3.	LACTC should specify its requirements for US content and how or if this percentage influences bid evaluation.	More clarity in bidding procedure (see also "vendor financing" CP 2.5.3.2.)	4. 20% U.S. content required, see Final RFTP.

CARBUILDER/SUPPLIER : ~~ACEC BELGIUM~~

SECTION TITLE : ~~AWARD AND EXECUTION OF CONTRACT~~

SECTION NUMBER : 4

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
5	CP-19	4.1.1.	Board approval required. We propose to add : If the board refuses to approve the contract awarded in conformance with the tender procedure, LACTC shall organize a new public tender.	In the case that the board does not give its approval, it should be clear what the next step will be.	5. Requirement remains unchanged.
6		4.1.2.	100 % performance bond. We propose that the wording of the performance bond contains a clause saying that during the execution of the contract, the amount of the performance bond will be decreased by the amounts of the progress payments.	Lower cost of the performance bond which result in lower bid prices.	6. Provisions for bond reduction have been made, see Final RFTP.
7	CP-20	4.1.4.	Certificate of insurance. We propose to modify as follows : Within 30 days after award...	Contractor must have sufficient time to negotiate adequate conditions of insurance. This will influence bid price.	7. Requirement remains unchanged. Carbuilders are expected to make arrangement prior to contract award, if necessary.

CARBUILDER/SUPPLIER : ~~VDFC BELGIUM~~

SECTION TITLE : ~~SCOPE OF WORK~~

SECTION NUMBER : 5

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
~~8~~	CP-25	5.3.1.	Directed changes We propose to add : Change orders may only be notified by the nominated projet manager of LACTC.	Avoid misunderstandings.	8. The Project Manager (see definitions in Final RFTP) is designated for this purpose.
9	CP-28 CP-29	5.4.4.	Repair and replacement at contractor expense We propose to add the following : Under normal circumstances, the contractor shall perform all repair and replacement works, resulting from guarantee, by himself. Only in the case, he fails to start to execute the guarantee work within 30 days after written notice, shall LACTC be entitled to perform such works.	It is our firm intention to perform all guarantee work ourself. This clause should be a safeguard for the case the contractor fails to its obligation.	9. Requirements remains unchanged.
10	CP-29	5.4.7.	LACTC owned spare parts. We propose to modify as follows : The contractor may use the LACTC owned spare parts for warranty purposed until the end of the warranty period of the first vehicle and under the conilition that at this date the spare parts inventory will be complete. All parts used by the contractor must be replaced within the normal supply delay for such parts. From the end of the guarantee period of the first vehicle, the LACTC owned spare parts will no longer be used for warranty purposes. The contractor shall maintain	As long as all vehicles are under guarantee LACTC will not be hampered by lacking spare parts. On the other hand the possibility to use LACTC parts may shorten warranty repairs and reduce bid prices.	10. Requirement remains unchanged.

CARBUILDER/SUPPLIER : ~~ACEC BELGIUM~~

SECTION TITLE : ~~CONTROL OF PROCUREMENT~~

SECTION NUMBER : 6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
11	CP-31	6.2.1.	Review procedures We propose to add : The contractor will retain the intellectual property rights of all the drawings, plans, specifications, sketches and all graphic depictions, it being understood that LACTC will be allowed to use same only for the maintenance of the vehicles purchased under this contract. LACTC is not entitled to disclose these documents to third parties.	Many of these documents contain proprietary design information.	11. California Sunshine Law permits disclosure of proprietary information, thereby, instituting requirement upon this contract.

CARBUILDER/SUPPLIER : ~~ACEC BELGIUM~~

SECTION TITLE : ~~CONTROL OF MATERIALS~~

SECTION NUMBER : 7

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
12	CP-55	7.8.5.	Delays We propose to add : If the acceptance program is delayed for more than 30 days for reasons beyond the control of the contractor, the guarantee period will start at the end of this 30 days period.	Guarantee period may not be extended for an indetermined period of time.	12. Requirement clearly stated in Volume I, no change.

CARBUILDER/SUPPLIER : ~~ACEC BELGIUM~~

SECTION TITLE : ~~PROSECUTION AND PROGRESS~~

SECTION NUMBER : 9

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
13	CP-61	9.2.	Indemnify and hold harmless. We propose to add : Contractor shall not be held responsible for consequential damages.	Normal practice.	13. No change. Normal practice in U.S.
14		9.3.	Time of performance and liquidated damages We propose to modify the first phrase of the second paragraph as follows : Within thirty (30 days) after notice to proceed and provided that the financing agreements have been executed and are in force, the contractor shall deliver ...	Normal practice.	14. Wording remains unchanged.
15)	CP-63	9.5.	Acceptance. We propose to add : Acceptance may not be refused for minor defaults. The acceptance report will list the eventual minor defaults as well as a reasonable delay to set these right. Failure of the contractor to perform the repair of minor defaults gives LACTC the right to repair at contractor's expense.	Normal practice (more flexible).	15. Requirement remains as stated in Final RFTP.
16)	CP-64	9.8.	Disputes. We propose to replace this paragraph by the following : All disputes that cannot be settled through negotiation, shall be settled through arbitration by the International Chamber of Commerce (I.C.C.). Disputes shall be governed by California law.	Normal practice. Settlement through arbitration is generally faster.	16. Requirement remains unchanged.
17)	CP-61 CP-62 CP-66 CP-67	9.3. 9.13	Time of performance and termination for default. Para 9.13. should refer to para 9.3. We propose to modify the wording of para 9.13.A.1. as follows : 1) If the liquidated damages reach 10 % of the total contract price (see para CP9.3.).	The "failure to perform services" as mentioned in para 9.13.1.A will be more clearly defined.	17. Requirements revised, see Final RFTP.
18)	CP-67	9.13.A.2.	Termination for default. We propose to specify a period of twenty (20) calendar days instead of ten (10) calendar days.	Sufficient opportunity should be given to the contractor to study good corrective measures before such a dramatic action as the termination of the contract should be taken.	18. No change.
19	CP-66 CP-67	9.13.B.	Termination for default. We propose to add : In any case the payments already made by LACTC and covering works already done by the contractor, shall remain property of the contractor. The goods so paid by LACTC shall be the property of LACTC.	Normal practice.	19. Comment accurate but not applicable to this section. No change.

CARBUILDER/SUPPLIER : ~~ACEC BELGIUM~~

SECTION TITLE : ~~MEASUREMENT AND PAYMENT~~

SECTION NUMBER : 10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
20	CP-72	72 10.3.2.	Adjustments. We propose to modify as follows : apportioned to labor cost will be 60 % of ... apportioned to material cost will be 30 % of ...	60 % labor and 30 % materials correspond better to reality and to general practice. A realistic formula reduces risk for the contractor and will lead to lower bid price.	20. Not acceptable, our experience is that 60% material/40% labor is more appropriate.

CARBURDER/SUPPLIER: ASEA

SECTION TITLE: Evaluation of Technical Proposals

SECTION NUMBER: 2.4

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
	CP-5	2.4	Pass/Fail technical evaluation should be replaced by scoring.	To assure that technical superiority is taken into account in technical proposals with material differences	Point evaluation is equally subjective we will evaluate pass/fail as discussed previously.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE:

SECTION NUMBER: 2.5.3.1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
		2.5.3.1	Concept of responsiveness requiring mirror image bid should be dropped. Proposers should be allowed to take exceptions to commercial conditions, with LACTC free to negotiate if it believes its interests would be served.	Concept of responsiveness not appropriate in negotiated procurement of complex system where some exceptions to terms and conditions can be expected. LACTC has interest in having any award be free from legal challenge. Responsiveness requirement reduces LACTC freedom to strike best deal, and significantly increases risk of award protest.	This is not a negotiated procurement.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE:

SECTION NUMBER: 2.5.3.3

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
		2.5.3.3	Price Evaluation should include running costs.	Lowest price item may be highest cost item to end-user because of design decisions to shift costs to customer - e.g. energy consumption; maintenance, etc.	See comment No. 1

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE: Bid Award

SECTION NUMBER: 2.5.4

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
		2.5.4	(1) Price Evaluation should include running costs.	Lowest price item may be highest cost item to end-user because of design decisions to shift costs to customer - e.g. energy consumption; maintenance, etc.	See previous answers, same comments.
			(2) Concept of responsiveness requiring mirror image bid should be dropped. Proposers should be allowed to take exceptions to commercial conditions, with LACTC free to negotiate if it believes its interests would be served.	Concept of responsiveness not appropriate in negotiated procurement of complex system where some exceptions to terms and conditions can be expected. LACTC has interest in having any award be free from legal challenge. Responsiveness requirement reduces LACTC freedom to strike best deal, and significantly increases risk of award protest.	

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE:

SECTION NUMBER: 5.3.1.2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
		5.3.1.2	Constructive changes should be expressly authorized.	Provides method of handling what could otherwise be breach of contract claims.	This is allowable, use the disputes clause if you do not agree with dispositions. ASEA will provide draft language that the Commission will review. Note: Received too late for review by LACTC legal staff.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE: Guarantees

SECTION NUMBER: 5.4

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
		5.4	Warranty period to begin if Acceptance delayed without contractor fault, and not later than entry into service.	Normal commercial conditions.	ASEA is satisfied that, this is adequately covered later in the document.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE:

SECTION NUMBER: 5.31

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
		5.31	Constructive changes should be expressly authorized.	Provides method of handling what could otherwise be breach of contract claims.	ASEA will provide typical language for review by LACTC. Note: Received too late for legal review.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE: General Statement on Warranty and Guarantees

SECTION NUMBER: 5.4.6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
		5.4.6	Exclusivity of warranty should foreclose actions based on defects but stated in different legal theory.	Carries out intent of exclusivity clause; normal commercial condition.	The contract defines all remedies.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE:

SECTION NUMBER: 7.8.2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
		7.8.2	Warranty period to begin if Acceptance delayed without contractor fault, and not later than entry into service.	Normal commercial conditions.	See previous comments.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE:

SECTION NUMBER: 7.11.1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
		7.11.1	Patent infringement clause should limit contractor liability to defense of actions and to procurement of right to use, or to modification, if infringement found	Normal commercial conditions; assures lowest price.	See previous comments relating to this comment.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE: Jurisdiction

SECTION NUMBER: 8.1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
		8.1	Price adjustment may be indicated if changes in law or regulation increase costs.	Normal commercial conditions; assures lowest price.	LACTC would expect the contractor to secure agreements but would not seek additional compensation.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE: Laws to be Observed

SECTION NUMBER: 8.2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
		8.2	Price adjustment may be indicated if changes in law or regulation increase costs.	Normal commercial conditions; assures lowest price.	This is understood; should changes occur after the bid, we would negotiate an equitable adjustment.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE:

SECTION NUMBER: 8.10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
		8.10	Risk of loss and title to pass when entry into service begins	Normal commercial conditions.	See previous related comment.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE: Indemnify and Hold Harmless

SECTION NUMBER: 9.2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
		9.2	Needs to be rephrased so as to mesh with allocation of risks in balance of contract.	Normal commercial conditions; assures lowest price.	This is a standard clause. ASEA will provide a draft clause for review. Note: Draft came too late for legal review.

CARBUILDER/SUPPLIER: ASEA

SECTION TITLE:

SECTION NUMBER: 9.13

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
		9.13	Should exclude delivery delays while liquidated damages being paid; cure period too short.	Normal commercial conditions; assures lowest price.	This is a standard clause. ASEA will propose a substitute clause for LACTC review. Clause came too late for legal review.

CARBUILDER/SUPPLIER ASEA

SECTION TITLE: Cost and Pricing Data

SECTION NUMBER: 11.3

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
		11.3	Requirement of cost data at prime and subcontractor level not appropriate in competitive procurement where prices based on market and competition.	Cost data not gen-rally required in these circumstances, and are not needed to assure reasonable prices. Contractor cannot promise that sub-contractor will agree to provide data.	Because of cost adjustment, audit is required. This is to be applied to those items directly related to our contract.

CARBUILDER/SUPPLIER : BBC BROWN BOVERI

SECTION TITLE : Definitions and Abbreviations/Procurement Process

SECTION NUMBER : CP1 & CP2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
CP1.1			Definition of Load Weighing shall be modificated: a function incorporated in the braking system, which . . .	Typically, this function is incorporated in braking and not in traction system.	1. This can be provided by either subcontractor if approved by LACTC.
CP2.3.2	CP - 3		Formal addendum should be issued 30 working days before the RFTP.	For important changes of the design, 10 working days are not sufficient for incorporation in the Proposal.	2. In order to maintain our project schedule, this may not be possible. We would intend to issue any addenda that may have an impact on the proposer as soon as possible.

CA/BUILDER/SUPPLIER: BBC BROWN BOVERI

SECTION TITLE: Proposal Instructions

SECTION NUMBER: CP 3

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
CP 3.1	CP-10	1	A submission of 15 copies shall be reduced to 5 copies.	Fifteen copies of the proposal is unreasonable. Such a large quantity may lead to problems with confidentiality.	1. No, we require 15 copies for internal review.
CP 3.3	CP-12		Subsystem no. 3.9 has to be split into two subsystems: - Power Supply for Auxiliary - Auxiliary Electric Equipment	A clear separation of the descriptions of two different subsupplies.	2. We disagree, within Section 3.9 of Technical Volume I, the distinction is made.

CARBUILDER/SUPPLIER : BBC BROWN BOVERI

SECTION TITLE : Scope of Work

SECTION NUMBER : CP 5

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
CP 5.2.2	CP-23	1	English system of weights and measures: The metric system should also be allowed.	European subsuppliers with experience on the LRV have all the documentation in the metric system. The metric system is used for manufacturing. A redrawing to English system increases the price of the equipment and has a disadvantage, in that the equipment is not manufactured based on the drawing submitted to the LACTC.	1. U.S. dimensions on the drawing to the nearest 32nd of inch must be adhered to, metric dimensions in parentheses are acceptable. Manufacturing drawings used by the subcontractor or prime may be used for construction but not submitted as contract drawings. Where metric hardware is used and identified, no U.S. equivalent exists and is not required.
CP 5.4.4	CP-29		Add the phrase: It is understood that costs associated with drivers, power-supply, etc., are LACTC's responsibility.	Usual practice.	
CP 5.4.7	CP-29		LACTC-owned spare parts could be borrowed by the contractor during warranty. The contractor must return to LACTC the repaired warrantable unit in a reasonable time.	Contractor can not maintain a stock of major spare parts and can not repair all the possible failures in 30 days. With this feature, the availability of the LRV increases.	2. This comment is not applicable to the warranty clause. 3. No, the contractor must retain his own spare parts.

CARBUILDER/SUPPLIER: BBC BROWN BOVERI

SECTION TITLE: Control of Procurement

SECTION NUMBER: CP 6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
CP 6.2.1	CP-31	3	This para. should be changed to: "It is further agreed between ... upon presentation to the LACTC, can be used by LACTC to secure the operation and maintenance of the cars. The copyright and any other protected rights of all these documents will remain the property of the suppliers."	There are obvious problems in permitting the suppliers' copyright or other proprietary rights to lapse into the public area. Would LACTC indemnify the supplier for the misapplication of information used by a manufacturer to copy the existing design? Drawings representing patented designs, materials or process as well as "know-how" for specific application purposes must be exempt.	1. - This is contrary to state law - No. - This is contrary to state law 2. No, any drawing required for submittal must be on LACTC title block on LACTC standard drawing sizes. 3. We have our own internal review process, the turnaround will remain at 30 days.
CP 6.2.4	CP-34		We understand that these requirements refer only to the new established drawings of the LACTC car and not to each item used in the car.	A lot of components (for example contactors, relays, electronic devices, circuit-breakers, etc.) are the standard equipment of traction catalogs, with their proper drawing format. a redrawing to meet requ. CP 6.2.4 would automatically increase the price.	
CP 6.3.3	CP-37		The period of thirty (30)days should be reduced to 10 days.	Operational reasons in the manufacturer's plants and design offices. (Approval of one drawing is the condition for starting the second one, approval of the second drawing is the condition for the designing of the third one, etc.) The delivery time of the first car can be reduced with faster approval. Also, to meet requirements of items CP 6.4 (information desired within 120 days!), it is necessary to reduce the approval period of 30 days.	

CARBUILDER/SUPPLIER: BBC BROWN BOVERI

SECTION TITLE: CP 7 - Control of Materials

SECTION NUMBER: CP 7

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
CP 7.11.2	CP-56		LACTC Rights After Termination. Delete the following wording in the third "or to cause to be manufactured." The last phrase of the para. shall be extended as follows: "Except for patented devices, standard/series/and catalog-components and assemblies, the contractor shall not have exclusive proprietary rights pertaining to the design of the cars."	The supplies of specific assemblies and components can not allow manufacture of this material by third persons.	1. No, this is contrary to state law.

CARBUILDER/SUPPLIER : BN CONSTRUCTIONS FERROVIAIRES ET METALLIQUES

SECTION TITLE : PROCUREMENT PROCESS

SECTION NUMBER : C.P.2

M #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	C.P.1	2.1.1.	<u>STEP 1 - Technical Proposal Requirements</u> We suggest that proposals submitted by a group consisting of 2 or more main companies which have agreed for the purpose of the project to be jointly and severally liable towards L.A.C.T.C. are also eligible for acceptance. These companies would assume as a group full, joint and several responsibility to L.A.C.T.C. for the design, manufacture, test and support of the light rail vehicles.		1. This sounds like a joint venture However we require that the contract be with either one corporation or a legal entity, i.e. joint venture.
2.	C.P.7	2.5.1.	<u>Invitation for Bids</u> What is the time schedule for the invitation for bids and the submission of bids ?		2. A schedule has been sent by separate letter 12-09-85 and will be included in the RFTP. See revised Volume II.
3.	C.P.8	2.5.3.2.	<u>Vendor financing</u> What are L.A.C.T.C.'s guidelines for the financing proposal ?		3. See separate letter RE: Vendor Financing and Revised Volume II.

CARBUILDER/SUPPLIER : BN CONSTRUCTIONS FERROVIAIRES ET METALLIQUES

SECTION TITLE : PROPOSAL INSTRUCTIONS

SECTION NUMBER : C.P.3

M #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
4	C.P.11	3.3.	Proposal Format - Domestic Content Since the Buy American Act does not apply, is a minimum percentage of US content requested ? We would suggest to delete the US content requirement from the technical proposal. This would require substantial pricing efforts.		4. Revised Volume II requires a minimum of 20% domestic content.
5.	C.P.16	3.4.2.	Bid Forms The technical support is to be priced according to 12 000 person/hours. We understand this figure is given for price calculation purposes only.		5. See revised Volume II.

CARBUILDER/SUPPLIER : BN CONSTRUCTIONS FERROVIAIRES ET METALLIQUES

SECTION TITLE : AWARD AND EXECUTION OF CONTRACT

SECTION NUMBER : C.P.4

#	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
6.	C.P.19	4.1.2.	Performance Bond Is a standard form of performance bond prescribed ? When and how will the performance bond be released ? 100 % of the contract price : we assume that this means the total bid price for the base order but not including the options. Bid Bond What is the amount of the bid bond ?		6. - LACTC will determine what form the bond will take; it will then be provided in Volume II revision. - Performance Bond will be periodically released. See revised Volume II. - Yes, 100% of Bid Price. - Bid bond will be added and will be 10% of Bid Price. See revised Volume II.

CARBUILDER/SUPPLIER : BN CONSTRUCTIONS FERROVIAIRES ET METALLIQUES

SECTION TITLE : SCOPE OF WORK

SECTION NUMBER : C.P.5

M #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
7.	C.P.27	5.3.3.2.	Audit We understand that this paragraph refers to "all data and records of the Contractor relating to price adjustments and its performance of change orders under this contract".		7. The audit relates to all accounting information regarding this contract only. This could include DBE compliance or other LACTC related requirements.
8.	C.P.29	5.4.6.	General Statement on Warranty and Guarantees We understand that these guarantees are the only ones to be of application.		8. This is correct.
9.	C.P.29	5.4.7.	L.A.C.T.C. Owned Spare Parts Can the Contractor use the L.A.C.T.C. owned spare parts to repair warrantable failures and defects, provided he will make complete the original stock of L.A.C.T.C. owned spare parts.		9. No.
10.	C.P.30	5.5.3.	Technical Service Personnel : Availability We understand that the purpose of this clause is to have people in stand-by in case of any failure or defect which cannot be solved by the sole field service engineers.		10. Correct

CARBUILDER/SUPPLIER : BN CONSTRUCTIONS FERROVIAIRES ET METALLIQUES

SECTION TITLE : CONTROL OF PROCUREMENT

SECTION NUMBER : C.P.6

M #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
11.	C.P.35	6.2.7.	Drawings Dimensions and Standards Please provide us with your drawing standards.		11. Agree, will be included. See revised Volume I and Volume II.
12.	C.P.36	6.2.10.	Drawings of Parts We suggest to add : "of each part designed specifically for and/or manufactured exclusively for this contract.".		12. This is understood.
13.	C.P.37	6.3.3.	Drawing Submittals and Returns For approval time of drawings, we propose : - 15 calendar days - monthly design review meetings		13. No, 30 days to remain.
14.	C.P.48	6.10.6.	Stationing and Inspectors Do you require suitable means to permit testing of all sub-systems at the Contractor's plant or can the testing of these sub-systems be perfomed at the subcontractor's plants ?		14. Testing can be done at the subcontractor's plant. See revised Volume I.
15.	C.P.50	6.10.14.	Tests of First Two Cars In case of testing and acceptance of the baseline car is extended beyond sixty days for reasons beyond the normal control of the Contractor. We suggest to amend the sentence as follows : "then the delivery schedule and the progress payment schedule will be adjusted..."		15. This section will be modified to test all cars. See revised Volume I and Volume II.

CARBUILDER/SUPPLIER : BN CONSTRUCTIONS FERROVIAIRES ET METALLIQUES

SECTION TITLE : CONTROL OF MATERIALS

SECTION NUMBER : C.P.7

M #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
16.	C.P.54	7.8.1.	Acceptance Testing Who provides and pays energy, consumables and vehicle drivers to perform acceptance tests ?		16. On site acceptance testing will be paid for by LACTC. Testing of each car per Section 2.3 (Technical Section) shall be paid for by carbuilder. See revised Volume I and II.
17.	C.P.54	7.8.2.	Conditional Acceptance We understand that the term of payment linked to the conditional acceptance is equivalent to the one lineked to the acceptance.		17. Correct

CARBUILDER/SUPPLIER : BN CONSTRUCTIONS FERROVIAIRES ET METALLIQUES

SECTION TITLE : LEGAL RESPONSIBILITY

SECTION NUMBER : C.P.8

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
18.	C.P.57	8.3.	Permits - Fees - Notices May we reasonably suppose that L.A.C.T.C. shall assist the Contractor to obtain all permits, authorizations and licenses from federal, state and local authorities.		18. Yes, we will try and assist in identifying what they are. However, we are not obligated.
19.	C.P.60	8.11.2.	Insurance Requirements We understand that in all cases, the word aggregate refers to occurences.		19. Each occurrence $10,000,000 maximum. Note: Change to delete aggregate per TIA.
20.	C.P.61	8.11.2.d	Contractors Protective Liability Insurance We understand that it is "$ 10 000 000 combined limit per occurence/aggregate".		20. No, Bodily Injury and Property $10,000,000 per occurrence for either.

CARBUILDER/SUPPLIER : BN CONSTRUCTIONS FERROVIAIRES ET METALLIQUES

SECTION TITLE : PROSECUTION AND PROCESS

SECTION NUMBER : C.P.9

M #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
21.	C.P.61	9.2.	<u>Indemnify and Hold Harmless</u> We recommend to delete the words "or indirectly" because we would thereby have to support liabilities, loss,... which do not result from a cause attributable to us and because such liabilities, loss... will thereby have unreasonable and unlimited consequences for the contractor. Therefore, we suggest following text : "Contractor acknowledges responsibility... ...from any and all liability, settlements, loss, costs and expenses in connection with any action, suit or claim resulting directly from the contractor's acts or omissions relating to this contract up to the maximum amounts as determined hereabove in art. C.P. 8.11.2.".		21. - This is a standard clause.
22.	C.P.61	9.3.	<u>Time Performance and Liquidated Damages</u> We propose to limit the total of liquidated damages to 5 % of the total contract price.		22. No.
23.	C.P.62	9.4.	<u>Delivery and Acceptance Schedule</u> We understand that the liquidated damages will apply according to the delivery schedule (3 key dates) and not according to the delivery rate. When will the options be exercised ? A part of the section concerns : "storage of equipment in the event the equipment cannot be received by L.A.C.T.C. although is ready for delivery and acceptance by the contractor". We suggest to change : "an equitable adjustment for storage will be negotiated" by "an equitable adjustment to contract price, payment schedule, delivery schedule will be negotiated".		23. This is incorrect. A delivery schedule is required in Volume II Once the schedule is delivered an approved, the date for liquidated damages per car is established. - See revised Volume II. - After 30 days, if LACTC can not operate and test, the cars would be accepted by default.
24.	C.P.66	9.12.	<u>Excusable delays</u> Should the Contractor fail to perform because of excusable delays, we propose a price adjustment as well as a schedule adjustment.		24. No, price adjustment for storage only.

CARBUILDER/SUPPLIER : BN CONSTRUCTIONS FERROVIAIRES ET METALLIQUES

SECTION TITLE : MEASUREMENT AND PAYMENT

SECTION NUMBER : C.P.10

M #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
25.	C.P.68	10.1.j.	Terms of Payment We propose to replace the 10 % retention on each payment by a retention money bond as the requested performance bond and the last payment term are very hard. We understand that the retention will be released at the acceptance of the last car. Is the retention released partially or in whole ?		25. - No. - See revised Volume II - See revised Volume II.
26.	C.P.70	10.1	Progress Payment Schedule We recommend the payment milestone M be increased to 20 % and the milestone O be decreased to 10 %.		26. See revised Volume II.
27.	C.P.72	10.3.2.	Adjustments Is it possible to propose indices others than the ones mentioned for labour and materials ?		27. No.

CARBUILDER/SUPPLIER : [illegible]

SECTION TITLE: DEFINITIONS AND ABBREVIATIONS

SECTION NUMBER: 1.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1		CP 1.0	We would like to suggest that the following terms be included in the section on definitions: acceptance, delivery, failure, receiving notice, shipping release, and conditional acceptance.	This will clarify the general intent and reduce the risk of confusion in contract interpretation.	1. Are defined in the body of the document but ... will take under advisement. See revised Volume II.

CARBUILDER/SUPPLIER : BOMBARDIER INC.

SECTION TITLE : PROCUREMENT PROCESS

SECTION NUMBER : 2.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
2	CP-1	CP 2.0	We would like to suggest that the period within which the options may be exercised be added to this section. Also, whether option prices shall be fixed or escalated should be clarified.	These concerns can have important effects on the price that will be given for the options.	2. See revised Volume II.
3	CP-1	CP 2.0	We believe it should be noted here that there are three (3) additional car purchase options, consistent with the BID FORM presented in page CP-17.	In order to avoid any confusion on that matter.	3. See revise Volume II.
4	CP-2	CP 2.3	The heading is entitled "Proposal Documents". It should be entitled "Technical Proposal Documents" as Step One is the Technical Proposal and elsewhere in the following Art. reference is always made to Technical Proposals.	In order to avoid confusion with the terms.	4. Title is correct as is, written to avoid confusion.
5	CP-8	CP 2.5.2	The amount of the bid bond is not specified. Please specify the amount of the bid bond required to be submitted with the bid.	To clarify bid requirements.	5. Agreed, see revised Volume II.
6	CP-9	CP 2.5.4	Provisions should be added to Bid Award criteria concerning the life cycle cost aspects of the chopper control VS car control situation for the propulsion system. In that regard, it would be highly unwise to base any life cycle cost evaluation on the manufacturer's own figures. An evaluation scheme with specific requirements should be set forth, holding in account the particular configuration of the system to be built by the LACTC.	If no allowance is made to justify that the more expensive chopper control generally offers long term life cycle cost advantages over the less expensive cam control system. Under these conditions, it appears very likely that the LACTC will not have the choice to buy either a cam or a chopper but will have to choose a less expensive cam control equipped vehicle.	6. LACTC Legal requires lowest responsible bid as award criteria.

CARBUILDER/SUPPLIER: BOMBARDIER INC.

SECTION TITLE: PROPOSAL INSTRUCTIONS

SECTION NUMBER: 3.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
7	CP-10	CP 3.3 P&R	This paragraph implies that there has been a previous working relationship between the Proposer and every supplier or sub-contractor. It is possible that a Proposer may decide to work with a supplier with which he has not worked previously. Would this be precluded or have to be justified in a specific manner?	This may result in difficulties for the Proposer to put together a proposal that would be the most interesting to the LACTC. Please clarify.	7. In some cases like brakes and propulsion, the two subs. must have a previous relationship. However, in other cases, a solid justification would suffice.
8		CP 3.3	This section provides that the Technical Proposal "should identify the approximate percentage of U.S. content and delineate those subsystems and major components of subsystems which qualify as domestic content". However, "U.S. content" is not defined. Please define the term "U.S. content" as used in CP 3.3 so that the Proposer may comply with the requirements of that Section.	In order to avoid possible confusion in the interpretation of this section.	8. Revised Volume II requires a minimum of 20% domestic content.
9	CP-12	CP 3.3(3.18)	How shall we understand the fact that the Contractor seems to have to provide information to the LACTC on equipment that he is not responsible for supplying? There may be a misunderstanding on our part in regard to subdivision 3.18 - Owner Furnished Equipment.	Please clarify in regard to the nature and extent of the information to be provided.	9. Misunderstanding, we would expect that the contractor would describe and define hardware, interfaces, and information needed from LACTC and a reasonable date the data must be provided.
10	CP-15		Top of page CP-15. What is the blank for? Are we supposed to provide the source from which we will get our information to build the vehicle or any other information?	Please clarify.	10. A name or number describing the car (i.e. the LALRV or B-type-Los Angeles).
11	CP-16,17		The Bid Form dealing with the options does not mention a minimal quantity of cars to be ordered under the options. Is there a possibility that only a fraction of an option be exercised?	Please clarify.	11. No, all of an option or none is foreseen.

CARBUILDER/SUPPLIER : BOMBARDIER INC.

SECTION TITLE : AWARD AND EXECUTION OF CONTRACT

SECTION NUMBER : 4.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
12	CP-19	CP 4.1	We would like to suggest that a project schedule including all important dates and delays be included in this document. More specifically, projected contract award and notice to proceed dates should be presented.	A formal project schedule should be part of the contract documents.	12. A letter has been sent detailing the key dates. Revised Volume II includes a schedule.
13	CP-19	CP 4.1	Is there any condition related to the issue of the notice to proceed after contract award or is it understood to be implicitly given at contract signature?	Please clarify.	13. Only Board approval.
14	CP-19	CP 4.1	The second paragraph of CP 4.1 makes reference to a "clarification statement". This is a term which is neither defined nor used elsewhere in the Contract Provisions. Please explain the term "clarification statement" which is used in the second paragraph of CP 4.1.	In order to remove any possible confusion.	14. Should be addenda.
15	CP-19	CP 4.1 a)	LACTC reserves the right after Bid opening to hold all bid bonds, and accompanying checks. Because of the costs incurred by a bidder, we do not understand why LACTC wants the right to retain check and bid bonds for any bidder lower than third. Would you please reconsider.		15. See revised Volume II.
16	CP-19	CP 4.1.1	We would like to suggest that, in case the lowest bidder does not get approval by a majority vote, all bids shall be rejected and the bidding process shall be started over again.	To do otherwise would leave this section in conflict with the Section 2.1.2 of the present document.	16. We would award to the next lowest responsible bidder only for cause.
17	CP-19	CP 4.1.2	For purposes of providing the performance bond, please confirm that the "Contract Price", as such term is used in CP 4.1.2, refers to the bid price for the base fleet of 54 light rail vehicles, spare parts, special tools and instrumentation, training program and technical support.		17. This statement is correct. Note: If option is exercised, then performance bond increases.

CARBUILDER/SUPPLIER: BOMBARDIER INC.

SECTION TITLE: AWARD AND EXECUTION OF CONTRACT

SECTION NUMBER: 4.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
			Please confirm that a proposed form of performance bond may be submitted with the bid for pre-clearance in order to facilitate compliance with the requirement that an acceptable performance bond be submitted to LACTC within 10 days after the award of the Contract. Please add the following new paragraph to CP 4.1.2: "The Contractor may reduce the amount of the bond pro rata as each Car is finally or conditionally accepted, whichever event occurs first; provided, however, that the amount of the bond may not be reduced to lower than 5% of the Contract price. Once all cars have been either finally or conditionally accepted, the bond shall be retained in the amount of 5% of the Contract price for the duration of the guarantee period".	Since a car is put into revenue service once it has been conditionally accepted, the Contractor has substantially completed its performance. Therefore, a performance bond in the amount of 100% of the Contract price is not required to protect LACTC. Such an alternative also allows for a reduction in insurance premiums.	- A bond form will be included with Final IFB and contract. - See revised Volume II.
18	CP-20	CP 4.1.4	Please confirm that a proposed form of insurance certificate may be submitted with the bid for pre-clearance in order to facilitate compliance with the requirement that an acceptable certificate of insurance be submitted to LACTC within 10 days of Contract Award.	In order to facilitate bid preparation and submittal.	18. Bombardier to clarify.
19	CP-21	CP 4.7	Because of lengthy mailing delays experienced in the past, we would like to suggest that five (5) days be changed to ten (10) days.	It will be very difficult, if not impossible, for Bombardier to commit to this time frame.	19. Ten (10) days is acceptable to LACTC. See revised Volume II.

CARBUILDER/SUPPLIER: BOMBARDIER INC.

SECTION TITLE: SCOPE OF WORK

SECTION NUMBER: 5.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
20	CP-23	CP 5.2.1	This Section reads: "The Contractor shall furnish all labor and materials, plant, tools and transportation necessary for the performance and completion of the Work ...". This Section implies that the Contractor is to furnish absolutely all items necessary for the performance of the Work. However this is not the case since there are specific provisions in these terms and conditions for LACTC Furnished Items. This factor should be noted under this Section.	Please modify the text accordingly in order to avoid possible confusion.	20. It is stated and understood that LACTC has their own obligation in Section 3.18.
21	CP-25	CP 5.3.1	We would like to suggest that the person or body that has the authority to initiate change orders be identified more clearly.	In order to avoid confusion in the interpretation of the contract.	21. We agree, see revised Volume II.
22		CP 5.3.1	The section seems to indicate that a Change Order initiated by LACTC could only result in changes in price or to the delivery schedule. Please amend the first sentence of CP 5.3.1.1 as follows: "If implementing any Change Order causes an increase or decrease in the cost of, or the time required for, the performance of any part of the Work under the Contract, or should the Change Order require modification of any other provision of the Contract, whether or not changed by the Change Order, an equitable adjustment shall be made in the Contract price, schedule or other Contract provision as appropriate."	To allow for other affected Contract provisions.	22. Clause will not be included in revision.
23	CP-26	CP 5.3.2	We request that the Change Order Proposal validity period be reduced from 60 days to 30 days.	The subcontractors will not honour price quotations for longer than 30 days.	23. It will take thirty (30) days to process the changes through our own organization.

CARBUILDER/SUPPLIER: BOMBARDIER INC.

SECTION TITLE: SCOPE OF WORK

SECTION NUMBER: 5.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
24	CP-27	CP 5.3.3	Please revise the last sentence of the second paragraph of CP 5.3.3 as follows: "Subject to the dispute procedure set forth in CP 9.8, LACTC shall be the sole judge of the adequacy of the pricing data".	To confirm that, consistent with the provisions of CP 5.3.1.1, any disagreement regarding Change Orders will be subject to the dispute resolution procedure set forth in CP 9.8.	24. The disputes clause can be used at anytime for any reason within the "disputes" ground rules by the contractor.
25	CP-27	CP 5.3.3.2	This Section requires that Contractor make available to authorized LACTC representatives for audit, all data and records relating to its performance of the Contract. We would like to suggest that the data made available be limited to data relating to the performance of the Contract which is affected by the Change Order.	In order to preserve the Contractor's confidential information related to other matters.	25. Not just change orders because of price adjustments.
26	CP-28,29	CP 5.4	We would like the following matters to be clarified in that section: - Who will physically perform all warranty work on the cars once they are on the LACTC property? - Will all warranty work be done on the premises? - Will the Carbuilder be in charge of physically supervising that activity even if the work is done by LACTC personnel? - If the work is done by LACTC personnel the Contractor should know the associated labor and overhead rates he will be charged.	All of these issues are important factors in determining costs related to Guarantees and Warranty administration.	26. - Contractor or SCRTD if available, see revised Volume II. - that depends - Yes. - Agreed, this will be negotiated later.
27	CP-27	CP 5.4.1	Please insert the word "conditionally" before the word "accepted" in paragraphs (a) and (b) of CP 5.4.1. Please revise paragraph (b) of CP 5.4.1 to read as follows: "All other parts, except Spare Parts and consumables, for a period of two (2) years from the date each car is conditionally accepted by the LACTC. The warranty period on consumable items, i.e., a part or component which in the engineer's opinion has an ordinary useful life in its application on the light rail lines of the LACTC of less than two years, shall be its ordinary useful life as determined by the Engineer".	The warranty should begin to run when the Car is placed into revenue service.	27. No, must be accepted. - Other than consumables, there should be NO components with a life of less than two (2) years.

CARBUILDER/SUPPLIER: BOMBARDIER INC.

SECTION TITLE: SCOPE OF WORK

SECTION NUMBER: 5.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
28	CP-28	CP 5.4.2	Please revise the first sentence of CP 5.4.2 to read as follows: The Contractor shall guarantee that the Cars shall be in accordance with Contract Documents when the Cars are accepted and shall guarantee against defects, other than in equipment furnished by LACTC, due to faulty design, poor workmanship or poor material during the foregoing respective periods of guarantee.	The Contractor should not be required to warrant LACTC furnished equipment.	28. The Contractor need not warrant LACTC provided equipment. However, if contract design is faulty at the interface, and it causes failure or damage to the equipment, the Contractor is liable for replacement costs.
			Please revise the last sentence of CP 5.4.2 to read as follows: "Replaced items shall be guaranteed for the remainder of the guarantee period or for one (1) year, whichever period is greater; provided, however, that in the event that any repair work is performed by LACTC and/or SCRTD, such work is performed in accordance with the Contractor's maintenance manuals and any other written or oral directions given by the Contractor".	The Contractor should not be required to warrant repairs made by other parties unless it is able to control the manner in which such repairs are made.	The Contractor is responsible for supervision of the work; thus the one-year period will be invoked independent of who did the work.
29	CP-28	CP 5.4.3	The extension of warranty on the replaced items is for one year minimum. However, the precise start up date of this additional warranty period is not set out. Is this date the finding of the proper correction or is it the installation of the replaced item or even the placement into revenue service of the completed car?	Please clarify.	29. At the installation of the part.
30	CP-29	CP 5.4.6	Please revise CP 5.4.6 to read as follows: "THE FOREGOING WARRANTY AND GUARANTEES AND THE OBLIGATIONS AND LIABILITIES OF THE CONTRACTOR RELATING THERETO ARE EXPRESSLY IN LIEU OF ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND OF ANY OBLIGATION OR LIABILITY ON THE PART OF THE CONTRACTOR, INCLUDING, LIABILITY FOR CONSEQUENTIAL DAMAGES".	To confirm that, except as provided in CP 5.4.4, Contractor will not be liable for consequential damages.	30. No, Contractor liable per State Law regarding consequential damages.

CARBUILDER/SUPPLIER : BOMBARDIER INC.

SECTION TITLE : SCOPE OF WORK

SECTION NUMBER : 5.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
31	CP-30	CP 5.5.3	Contractor must make available technical assistance during the warranty period. Which warranty is being referenced here? The five year period provided under 5.4.1 a) or the 2 year period under 5.4.1 b)?	Please clarify.	31. All warranties, depending on the subsystems. As stated in revised Volume II. a. 5 years b. 2 years c. 3 years maximum

CARBUILDER/SUPPLIER : BOMBARDIER INC.

SECTION TITLE : CONTROL OF PROCUREMENT

SECTION NUMBER : 6.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
32	CP-31	CP 6.2.1	The third paragraph of CP 6.2.1, when read in conjunction with CP 6.2.10 and CP 7.11.2, raises very serious issues which we would like to discuss in a meeting with the LACTC. The third paragraph of CP 6.2.1 provides that any and all drawings, plans, specifications, etc., and any and all graphic depictions, produced by the Contractor during the performance of the Contract shall upon presentation to the LACTC become the property of the LACTC, and may be used to secure the manufacture or replacement of any items without any liability to LACTC or SCRTD. CP 7.11.2 provides that upon the termination of the guarantee period with respect to the last Car, LACTC will receive the right to manufacture or to cause to be manufactured any assembly or component for its sole use in maintaining Cars without incurring any obligation to pay any royalties or fees in relation to letters of patent or any copyright. It also provides that the Contractor will not have exclusive proprietary rights pertaining to the design of the Cars except for patented devices. It could be argued that, taken together, these provisions permit LACTC to use working drawings to manufacture additional cars or car components or to deliver the drawings to other manufacturers for this purpose. This is problematic from the viewpoint of the Contractor, the Contractor's licensor and the Contractor's subcontractors. CP 6.2.10 suggest that there may be some protection from this result, but the nature of the protection extended is very unclear. Please clarify the consequences of a successful claim by a subcontractor that its drawings are "proprietary". Also, please define the term "proprietary".		32. - This is required by State law, see revised Volume II.

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SECTION TITLE : CONTROL OF PROCUREMENT

SECTION NUMBER : 6.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
33	CP-46	CP 6.9.2	Please add the following sentence as a new last sentence in the first paragraph of CP 6.9.2: "In requesting such consent, the Contractor shall notify LACTC of the work to be performed by the proposed subcontractor and such subcontractor's name, and LACTC shall be deemed to have approved a proposed subcontractor in the event that it fails to notify the Contractor of its disapproval of such proposed subcontractor within seven (7) calendar days of receiving such request for approval".	In order to preserve the delivery schedules, the Contractor must know with reasonable promptness that it may proceed with its subcontractors.	33. No, this is required.
34	CP-47	CP 6.10.5	Please revise the first sentence of CP 6.10.5 to read as follows: "If during the construction of these cars, LACTC finds any item which is not in accordance with the Contract Documents, no further work on such item or similar work shall be done by the Contractor or the subcontractor".	To confirm that, consistent with the third sentence of CP 6.10.7, only work relating to the item in question must be suspended pending a review by LACTC.	34. Will clarify.
35	CP-50	CP 6.10.14	We would like to suggest that the acceptance criteria related to the Baseline Car be clarified, for the mutual benefit of the LACTC and potential proposers.	In order to avoid any confusion during contract execution.	35. Test Criteria is defined in the Technical Provisions Volume I.
36	CP-50	CP 6.11.1	We would like the nature and extent of this particular requirement to be clarified.	In order to avoid confusion on what has to be submitted and what has not.	36. See comment 35.

CARBUILDER/SUPPLIER : BOMBARDIER INC.

SECTION TITLE: CONTROL OF MATERIALS

SECTION NUMBER: 7.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
37	CP-51	CP 7.2	Please revise the second sentence of CP 7.2(b) to read as follows: "The LACTC may require the removal of any unapproved items from the cars and their replacement with approved items." Please delete the last sentence of CP 7.2(b).	The words "substitute or" should be deleted in order to make it clear that removal of a substitute will be required only if it is installed without LACTC's consent. The Contractor bears the risk that the cost of any proposed substitute is greater or less than that of any component speficied in the Contract Drawings or in the RFTP.	37. - remove "suitable or" - no deletion.
38	CP-54	CP 7.8.2	This Section provides for the possibility of a conditional acceptance of all cars. The notion of conditional acceptance is introduced for the first time in this Section and could lead to interpretation problems in regard to other Section which refer to simple acceptance and make no distinction between the conditional acceptance and the final acceptance.	Please clarify and add missing information.	38. Bombardier agrees, ignore comment.
39	CP-55	CP 7.9	General Comment Other Sections of the Contract should be revised to take into consideration the LACTC furnished material, i.e. inspection of items, warranty section and the interface obligations. There should also be a specific delivery schedule for those Authority furnished materials.	Please make appropriate clarification.	39. See previous comments.
40	CP-55	CP 7.9.2	For these provisions to be included in the bid proposal, clarifications should be brought to the nature and quantity of the material that will have to be handled, stored, or installed. Also, where this material shall be put into storage should be discussed.	Otherwise, these provisions will have to be resolved by a change order. We would prefer that the conditions under which this work has to be done be determined in advance.	40. See revised Volume II.
41	CP-56	CP 7.10	The second paragraph refers to the reception of spare parts. This is inconsistent with the first paragraph which refers to delivery of the spare parts as well as the warranty on spare parts which is supposed to commence upon delivery of spare parts.	Please clarify to ensure consistency.	41. Bombardier says ignore.

CARBUILDER/SUPPLIER : BOMBARDIER INC.

SECTION TITLE : LEGAL RESPONSIBILITIES

SECTION NUMBER : 8.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
42	CP-59	CP 8.9	Please define the term "assigned" in order to avoid confusion with the provisions of CP 6.9.2".		42. No comment required, per Bombardier.

CARBUILDER/SUPPLIER: BOMBARDIER INC.

SECTION TITLE: PROSECUTION AND PROGRESS

SECTION NUMBER: 9.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
43	CP-62	CP 9.3	In the last paragraph, it is said that the contract may be declared breached by the LACTC if liquidated damages reach 10% of the total contract price. This requirement is unacceptable to Bombardier Inc.	It is not standard commercial practice and represents too high a risk level to assume for the Contractor.	43. This was discussed; Bombardier agrees.
44	CP-62	CP 9.3	In case of late delivery of vehicles, liquidated damages could be assessed up to 10% of total contract price. This represents too high a figure and we would like to suggest that 5% be considered the maximum in terms of liquidated damages related to a late delivery of the vehicles.	This represents too high a risk level to assume for the Contractor.	44. Not an issue with Bombardier.
45	CP-62	CP 9.4	We would like to suggest that the exact date on which the delivery must take place be specified. As an example, "No later than January 31, 1990".	In order to remove any ambiguity.	45. January is OK with Bombardier.
46	CP-63	CP 9.4	The Contract provides that should LACTC be unable to receive the cars or spare parts, Contractor must supply bonded material storage. Although the Contract provides for an equitable adjustment for storage, it is too restrictive. Provision should also be made for an equitable adjustment to the price because of the following factors: Inconvenience due to additional storage requirement; the delay in delivery due to readjustment of the delivery point; the readjustment of the transportation arrangements; etc. Also, there should be added a sentence to the effect that "a delivery at the bonded storage site shall be considered as a delivery to LACTC". Please revise the last sentence of CP 9.4 to read as follows: "Contractor shall bear the risk of loss of any item provided under this Contract until the said item is delivered to LACTC".	Please revise the text to reflect your intention in regard to these concerns. To be consistent with CP 8.10.	46. - change storage to costs. Risk of loss to occur at delivery.

CARBUILDER/SUPPLIER: BOMBARDIER INC.

SECTION TITLE: PROSECUTION AND PROGRESS

SECTION NUMBER: 9.0

ITEM #	PAGE #	PARA. #	-- COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
47	CP-64	CP 9.8	We suggest that you consider revising CP 9.8 by substituting the following paragraphs for the second paragraph of CP 9.8: "Thereafter, either party may require arbitration of the dispute. Any review of the dispute by the arbitrator shall be de novo and the arbitrators will not be limited in their review to the issue of whether the LACTC acted in an arbitrary, caprious or grossly erroneous manner." There will be three arbitrators for each such arbitration. The Contractor and the LACTC will each designate one arbitrator within 30 days following the initiation of an arbitration proceeding hereunder. If either party fails to designate an arbitrator within such 30 days, the arbitrator will be designated by the American Arbitration Association. The third arbitrator, who will be the Chairman, will be designated by the other two arbitrators; provided that if they do not so designate a third arbitrator within 30 days following designation of the second arbitrator, the third arbitrator will be designated by the American Arbitration Association. If for any reason any arbitrator resigns, the party having originally designated such arbitrator shall select a substitute arbitrator within a reasonable time thereafter. If the arbitrator designated by the other arbitrators or the American Arbitration Association, as the case may be, resigns, the remaining two arbitrators shall designate a substitute arbitrator within 30 days thereafter, otherwise a substitute arbitrator shall be selected in accordance with the rules of the American Arbitration Association. Any arbitration hereunder will be held in accordance with the Commercial Rules of the American Arbitration Association then applicable unless the parties mutually agree otherwise and except as such rules may conflict with the specific provisions of this Section.	An arbitration procedure may result in a more rapid, and therefore less costly, resolution of dispute.	47. - No arbitration.

CARBUILDER/SUPPLIER: BOMBARDIER INC.

SECTION TITLE: PROSECUTION AND PROGRESS

SECTION NUMBER: 9.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
			Each party shall pay 50% of the arbitrators' fees and any administrative costs; otherwise each party shall bear its own costs in connection with any arbitration proceeding".		
48	CP-66	CP 9.11	Please revise the beginning of CP 9.11 and CP 9.11 (a) as follows: If a stop work order is cancelled or the period of the order or any extension thereof expires, the Contractor shall resume work. An equitable adjustment shall be made in the work scope or Contract price, or any other provision of the Contract, and the Contract shall be modified in writing accordingly if: The stop work order results in an increase in the time required for, or in the Contractor's costs properly allocable to, the performance of any part of the Contract, or necessitates a change in any other provision of the Contract;	A stop work order may affect more than time for delivery or price. For example, it could affect warranties given by subcontractors, therefore affecting the Contractor's warranties.	48. No.
			Please revise CP 9.11(c) to read as follows: "To the extent that a stop work order is issued because of Contract noncompliance, the costs due to such stop order will be borne by the Contractor".	The Contractor should be required to bear the costs of a stop work order only to the extent that the stop work order is issued due to noncompliance with the Contract.	
49	CP-66	CP 9.12	Please revise CP 9.12 to read as follows: "Except with respect to defaults of Subcontractors, the Contractor shall not be considered in default by reason of any failure to perform in accordance with the Contract to the extent that such failure arises out of causes beyond the control and without the fault or negligence of the Contractor. Such causes may include, but are not restricted to, acts of God or of the public enemy, acts of the governmental	As a matter of fairness, the Contractor should be entitled to an extension of time to the extent that the delay is due to causes outside the control of the Contractor or a Subcontractor.	49. See revised Volume II.

CARBUILDER/SUPPLIER : BOMBARDIER INC.

SECTION TITLE: PROSECUTION AND PROGRESS

SECTION NUMBER: 9.0

ITEM #	PAGE #	PARA. #	-- COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
			agencies in either their sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, freight embargos and unusually severe weather. If the failure to perform is caused by default of the Subcontractor, and to the extent that such default arises out of causes beyond the control of both the Contractor and the Subcontractor and without the fault or negligence of either of them, the Contractor shall not be in default by reason of any failure to perform, unless the supplies or services to be furnished by the Subcontractor were reasonably obtainable from other sources on similar terms and in sufficient time to permit the Contractor to meet the Contract requirements. (As used herein, the terms "Subcontractor" and "Subcontractors" means Subcontractor(s) at any tier.)".		
50	CP-66, 67	CP 9.13	Please revise CP 9.13 (a) to read as follows: "LACTC may, subject to the paragraph on "Excusable Delays", by written notice of default to the Contractor, terminate the whole or any part of the Contract in the event that (i) the Contractor shall fail to begin the work to be done under this Contract or if said work shall be abandoned by the Contractor; (ii) the performance of this Contract shall be unreasonably delayed; or (iii) the Contractor shall wilfully and materially violate the provisions of this Contract or fail to perform the same in good faith, and the Contractor shall fail to take reasonable steps to remedy any of the foregoing deficiencies within 10 days of receipt of notice, from LACTC describing such deficiencies in reasonable detail."	Delay in performance should constitute a default only if it is unreasonable. The Contractor should be given a grace period within which it may take steps to remedy any default alleged by LACTC in a written notice to the Contractor.	50. See revised Volume II.

CARBUILDER/SUPPLIER : BOMBARDIER INC.

SECTION TITLE : MEASUREMENT AND PAYMENT

SECTION NUMBER : 10.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
51	CP-69,70	CP 10.1	The proposed Progress Payment schedule results in a serious cashflow for the Contractor. Ultimately this will represent an unnecessary additional cost to LACTC. We would like to suggest that the PPS be remodeled to produce either a positive or at least a neutral cashflow situation for the Contractor. Alternatively, a remodeled PPS should delete the limitation that the cumulative amount of submitted progress payment invoices not exceed 100% of contractor/incurred costs to date, should provide for retainage not to exceed 5% of each monthly invoice and should terminate in the month immediately prior to scheduled delivery of the last car. We request that the second paragraph of CP 10.2 with apportions 60% of the total actual cost to material and 30% of the total actual costs to labor be modified to 50% allocation to materials and 40% allocated to labor.	A negative cash flow for the Contractor will add unnecessary costs to the vehicles. The suggested allocation more accurately reflects actual costs.	51. See revised Volume II. - We disagree.
52	CP-70	CP 10.2	Please revise the second paragraph of CP 10.2 to read as follows: "All payments previously made to the Contractor by the LACTC shall be subject to correction at the time final payment is made, and the LACTC shall provide the Contractor with a written explanation of any such correction effected in the final payment. The Contractor's acceptance of such payment, subject to further determination of the correct amount owed, shall not constitute a waiver of the Contractor's right to receive any such additional amount to which it is entitled nor a waiver of any claim which it has or may have against the LACTC for any act or neglect of the LACTC. In no event shall the acceptance of final payment constitute a waiver of any claim which the Contractor has or may have against the LACTC for any act or neglect of the LACTC."	Commercial reasonableness.	52. Clause to remain as written.

CARBUILDER/SUPPLIER: BOMBARDIER INC.

SECTION TITLE: AUDIT AND INSPECTION OF RECORDS

SECTION NUMBER: 11.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
53	CP-78	CP 11.4	We would like to suggest that the audit should not be conducted by a representative of LACTC but rather by a mutually appointed independent auditor. Please revise the last sentence of the second paragraph of CP 11.4 to read as follows: "The term "Subcontract" as used in this clause excludes (i) purchase orders not exceeding $100,000 and (ii) Subcontracts or purchase orders for public utility services at rates established for uniform applicability to the general public."	To preserve the confidentiality of the Contractor's information related to other business commitments. It is commercially impracticable to insert a right of inspection in purchase orders for an amount lower than $10,000.	53. - We disagree. - See revised Volume II.

CARBUILDER/SUPPLIER : BOMBARDIER INC.

SECTION TITLE:

SECTION NUMBER:

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
			Please add the following provisions to the Contract: Interest for Delay in Payment. Any delay not specifically permitted herein and any payment due to the Contractor from the LACTC, including any payment withheld hereunder which is subsequently determined to have been wrongfully held in whole or in part, or to the LACTC from the Contractor, shall give rise to an interest charge on the unpaid amount at the rate of 1% above the average interest rate announced by (insert name of bank) as its prime rate during the period such payment is overdue."	Since the LACTC has the right to withhold payments, the Contractor should have a right of recourse if they are improperly withheld.	- No.
			Limitation on Damages. Notwithstanding any other provisions of this Contract to the contrary, the Contractor's aggregate liability hereunder shall not exceed the total contract price".	It is not commercially reasonable for the Contractor to assume unlimited risk.	- No limitation to be included.

CARBUILDER/SUPPLIER: BREDA COSTRUZIONI FERROVIARIE

SECTION TITLE: Procurement Process

SECTION NUMBER: CP 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-7	2.4.2	Please explain what is meant by "substantially new vehicle design." Would this criterion apply to the carbody or just to systems engineering?	Clarification.	1) Substantial new vehicle is one that does not fit into one of the three categories. Each subsystem has a proven service requirement.
2	CP-8	2.5.3.2	Please explain how the vendor financing proposal will be used as "a criteria in determining responsiveness." Will this criterion be met simply by providing a vendor financing proposal? Or will the content of such a proposal be used in determining responsiveness?	Clarification.	2) If the proposal is acceptable and if the plan submitted with the bid is the same, then the contractor is responsive. No proposal or an unapproved proposal are grounds for unacceptability.
3	CP-9	2.5.4	a) Since the total bid price will also include spare parts, special tools and instrumentation, training program and technical support, we request that the LACTC furnish potential bidders with a spare parts list. b) We would also ask that "technical support" be defined in greater detail.	This would insure that the total bid price would include the same items from all bidders.	3) a. It will be furnished in the Final IFB. b. The man hours apply to training, not technical support. Technical support is a basic contract requirement.

CARBUILDER/SUPPLIER: BREDA COSTRUZIONI FERROVIARIE

SECTION TITLE: Proposal Instructions

SECTION NUMBER: CP 3

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-11	3.3	Since the technical proposal must identify the approximate percentage of U.S. content, will domestic content have any bearing on: 1) the pre-approval of the proposer's vehicle design 2) the pre-qualification of the proposer.	Clarification.	1) This has been changed: 1) & 2) must both be satisfied with the 20% domestic content requirement.
2	CP-11	3.3 part 2	We believe it is necessary that the LACTC specify which subsystems require the submittal of proven service documentation.	Clarification.	2) This will be done in the Final RFTP, but all major subsystem must be addressed.

CARBUILDER/SUPPLIER: BREDA COSTRUZIONI FERROVIARIE

SECTION TITLE: Award & Execution of Contract

SECTION NUMBER: CP 4

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-19	4.1.3	We believe a period of 10-days within which a registered agent must be appointed is too short. We ask that such a period be extended to 30 days.	Practicality.	1) The contractor has until December 1986 to find a registered agent. You can be arranging this now, if 10 days is too short.

CARBUILDER/SUPPLIER: BREDA COSTRUZIONI FERROVIARIE

SECTION TITLE: Scope of Work

SECTION NUMBER: CP 5

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-24	5.2.6(a)	In order to fall within the proven vehicle category, does the LACTC require that even the carbody dimensions be identical to those of a proven vehicle or can modifications (for example, in length and width) be introduced which would not alter the basic vehicle design?	Clarification.	1) This would depend on the type and magnitude of modification, and the contractors description of how he intends to engineer the change and identify impacts (strength, mounting, etc.).

CARBUILDER/SUPPLIER: BREDA COSTRUZIONI FERROVIARIE S.p.A.

SECTION TITLE: Scope of Work

SECTION NUMBER: CP 5

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-25	5.2.6(C)	Please identify which subsystems are required to have "a history of workihg together successfully."	Clarification.	1) All are desirable; however, only the brake/propulsion interface is required.

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CARBUILDER/SUPPLIER: BREDA COSTRUZIONI FERROVIARIE

SECTION TITLE: Control of Materials

SECTION NUMBER: CP 7

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-54	7.8.1	The second part of the first sentence should read as follows: "and will advise the Contractor of the Car's acceptance or rejection and the reasons for said rejection within 30 calendar days (exclusive of holidays) from the date of delivery of each car."	Clarification.	1) The wording is acceptable as written and is quite clear.

CARBUILDER/SUPPLIER: BREDA COSTRUZIONI FERROVIARIE

SECTION TITLE: Prosecution & Progress

SECTION NUMBER: CP 9

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-62	9.4	Instead of indicating the months in which delivery must occur (in which case a precise date should be given) the LACTC should indicate the number of months or weeks from the Notice-to-Proceed.	In this way, all bidders will be given a precise idea of the period of time available for production, and the time that will elapse between deliveries and from the issuance of the Notice-to-Proceed.	1) A project schedule is included in the revised contract documents. All delivery dates reflect this schedule from a contract award date of December 2, 1986.
2	CP-63	9.4	The last sentence in this paragraph indicates that the "risk of loss of any item provided under the contract" shall be borne by the Contractor "until accepted by the LACTC." This statement is in contradiction to paragraph 8.10 which places the responsibility with the LACTC once the item is delivered. Please modify this paragraph so that it is in agreement with CP-8.10.	Clarification.	2) No, risk of loss will be transferred at acceptance.

CARBUILDER/SUPPLIER: BREDA COSTRUZIONI FERROVIARIE

SECTION TITLE: Measurement & Payment

SECTION NUMBER: CP 10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-70	10.2	We do not believe the LACTC should withhold 10% of the total contract amount (see CP 10.1(J)) in case the Contractor has any pending liens or claims with one or more of the subsuppliers once the contract is completed.	Since the LACTC will still have in its possession the warranty of the performance bond, it seems only reasonable that the 10% should be paid at the moment all contract items are performed.	1) We disagree.
2	CP-72	10.3.2(a)	Please confirm that the rates for "Average Hourly Earnings Excluding Overtime of Production Workers on Manufacturing Payrolls by Industry" corresponds to table C-3 and not C-4 as specified. Also please confirm whether we are to use the labor rates which appear in table C-3 under the heading "Electrical and electronic equipment" and "Transportation equipment" (and are not SIC coded) or the SIC 362 indexes for "Electrical Industrial Apparatus" and the SIC 374 indexes for "Railroad Equipment."	Clarification.	2) The table title numbers vary from publication to publication. In the revised document the title remains, the reference has been deleted. - Each table should be applied according to the work it most closely represents.

CARBUILDER/SUPPLIER: BREDA COSTRUZIONI FERROVIARIE

SECTION TITLE: Measurement & Payment

SECTION NUMBER: CP 10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
3	CP-73	10.3.2(b)	Since the table numbers in the "Monthly Labor Review" are subject to change (Table 27) will not consistently list Producer Price Indexes, by commodity groupings just as Table 26 will not always list Producer Price Indexes, by stage of processing) we would suggest for the sake of clarity that only the table title be specified.	Clarification.	3. Clarified in Final RFTP.
	CP-77	Table II	Please correct column 2 to read: "Dollar Amt. of Act. Cost Appor. to Materials."		4. Correction made in Final RFTP.

CARBUILDER/SUPPLIER: FERROSTAAL CORPORATION

SECTION TITLE: CONTRACT PROVISIONS

SECTION NUMBER:

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-9	CP 2.5.4	Bid Award It will be necessary to specify the exact scope of the Training Program as the amount of spare parts and special tools to be included in the bid, as stipulated in the bid form on page CP-16 of the document.		1. See revised Volume II.
2	CP-19	CP 4.1.2	100% Performance Bond Please define the meaning of "acceptable bond."		2. See revised Volume II.
3	CP-20	CP 4.2	Cancellation In case of cancellation of the contract solely in the interest of LACTC, the contractor should be entitled to reimbursement of any expenses, loss of profit, etc.		3. This applies to bid award only, once a contract is signed; see termination sections.
4	CP-20	CP 4.3	Bid Protest We would request to establish a procedure for such bid protest.		4. Discussion closed item.
5	CP-21	CP 4.6	Failure to Execute Contract Contractor should be liable for compensation and/or liquidated damages only for such portion of the contract that has not been fulfilled. Indirect costs or damages of whatever nature are specifically excluded.		5. See revised Volume II.
6	CP-27	CP 5.4.1	Components Guarantee Common guarantee period for all parts listed under a), b) and c) is two years. All normal wear and tear parts are excluded from any guarantee.		6. No. Warranty to remain as stated.

CARBUILDER/SUPPLIER : FERROSTAAL CORPORATION

SECTION TITLE : CONTRACT PROVISIONS

SECTION NUMBER :

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
7	CP-61	CP 9.3	Time of Performance and Liquidated Damages It is common practice that liquidated damages should not exceed 5% of the total contract price. The fines or amounts for liquidated damages mentioned in this clause shall be entered in books for purposes of compensation with possible advances of provisional receipts and shall observe the same procedure established under the present clause previously mentioned, provided that the final contractual date of delivery of the vehicles and/or components and/or spare parts thereof is observed. The balance of the accounts, when favorable to LACTC, shall be paid within 30 days counted from the provisional acceptance of the last vehicle and/or components and/or spare parts to be delivered. If, however, the balance should be favorable to the contractor, nothing will be due.		7. - No, RFTP to stay as is. - No. - Liquidated damages are normally collected at the end of contract.
8	CP-62	CP 9.4	Delivery and Acceptance Schedule LACTC has to give a firm date for order award to enable the contractor to confirm the desired delivery schedule.		8. The schedule will be expanded, see revised Volume II.
9	CP-63	CP 9.7	Notice of Potential Claim We request to extend the time period to 60 days after the contractor to confirm the desired delivery schedule.		9. This is just a notice, no change in time to notify.

CARBUILDER/SUPPLIER: FERROSTAAL CORPORATION

SECTION TITLE: CONTRACT PROVISIONS

SECTION NUMBER:

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
10	CP-65	CP 9.10	Stop Work Order The contractor should also have the right to stop work in case of order modification by LACTC at a later date. In case of a work stoppage beyond LACTC or the contractor's control, the contractor shall have the right to adjust the delivery schedule accordingly.		10. - first sentence - we disagree. - second sentence is covered, see revised Volume II, excussable delays.
11	CP-65	CP 9.11	Costs of Stop Work Under b) we would like to suggest the following wording: "The contractor asserts a claim for such adjustment within 30 calendar days after the end of the period of work stoppage; payments of this claim shall be made immediately." Under c) we would suggest: "Any cost due to stop work order issued because of contract noncompliance for which the contractor is responsible will be borne by the contractor."		11. See revised Volume II.
12	CP-66	CP 9.13	Termination for Default Under a)2) we would like to suggest to extend the period to 30 days.		12. Again, the action of curing does not have to take place, only take steps.
13	CP-67	CP 9.14	Termination for Convenience It is necessary to define "close-out costs" and "profit on work performed."		13. See revised Volume II.

CARBUILDER/SUPPLIER: FERROSTAAL CORPORATION

SECTION TITLE: CONTRACT PROVISIONS

SECTION NUMBER:

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
14	CP-67	CP 10.1	Terms of Payment Under j) we would propose that the contractor furnishes to LACTC a bank guarantee for the retainage of 10%. The 10% cash retainage unnecessarily increases the costs for LACTC. Furthermore, please define the term "successful completion" as mentioned on the Progress Payment Schedule under O. Since most of the material will be imported, we would propose certain payments to be tied to shipping dates or bills of lading.		14. See revised Volume II.
15	CP-71	CP 10.3	Economic Price Adjustments For the imported content we have to calculated and rely on the indexes and figures in the manufacturing country, e.g. W. Germany. Price adjustments will be made according to the official indexes published by the "Statistische Bundesamt" (Federal Bureau of Statistics).		15. U.S. indices only.
16	CP-72	CP 10.3.2	Adjustments From the carbuilder's view the mentioned proportions should be changed to 60% labor costs and 40% material costs.		16. 60/30 to remain.

SECTION TITLE: Procurement Process

SECTION NUMBER: CP 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	CP-1 CP-2 CP-5	CP 2.0 CP 2.2 CP 2.4(d)	Service Proven Equipment There appear to be inconsistencies in the use of the terms "proven" and "service proven" equipment and vehicles in the Request for Technical Proposal. A clarification that the definition of "proven service" for the railcars is that in CP 5.2.6 (including "composite vehicle") would be helpful. We suggest adding the language "as described in paragraph 5.2.6" to paragraph 2.4(d).	Clarification and consistency.	1. We don't agree.
2.	CP-5	CP 2.4	Technical Review Committee May the Proposer request a meeting with the Technical Review Committee?	Clarification.	2. No, however, we may request a meeting.
3.	CP-6 CP-7	CP 2.4.1 CP 2.4.2	Appeals We suggest that the language that LACTC determinations "may be appealed only in the manner provided under the rules and regulations of LACTC or the laws of the State of California" be clarified by specifying what appeal procedures are applicable.	Clarification.	3. The legal documents and State law are the responsibility of the contractor to obtain.
4.	CP-7	CP 2.4.2	New Vehicle Design The language in paragraph CP 2.4.2 prohibiting "substantially new vehicle design" is undefined and appears to be in conflict with the "composite vehicle" language in paragraph CP 5.2.6.	Clarification.	4. Not a conflict.
5.	CP-8	CP 2.5.2	Bid Bond What is the amount of the bid bond required pursuant to this paragraph?	Clarification.	5. We will add a Bid Bond section. See revised Volume II.

CARBUILDER/SUPPLIER: FRANCORAIL/ALSTHOM

SECTION TITLE: Procurement Process

SECTION NUMBER: CP 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
6.	CP-8	CP 2.5.3.5	Rejection of Bids Upon what grounds may LACTC reject any and all bids? How is the term "informality" defined for purposes of this paragraph? Can the LACTC allow a bidder to add new information or change a bid after the bid date?	Clarification.	6. Any reason (i.e. cost, politics, outrageous option prices, etc.)

CARBUILDER/SUPPLIER: FRANCORAIL/ALSTHOM

SECTION TITLE: Proposal Instructions

SECTION NUMBER: CP 3

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	CP-9	CP 3.0	Multiple Proposals What is the definition of "a substantially distinct vehicle?" Does the use of alternate suppliers and thus alternative subsystems pursuant to paragraph 2.3.3 require a separate proposal?	Clarification.	1. Alternate subcontractors in one proposal, acceptable. Only one bid allowed.
2.	CP-16	CP 3.3 (Bid Form)	Technical Support 12,000 person hours is specified for technical support. How was this figure calculated? Is this an estimate, a maximum or a minimum requirement? (See comment under paragraph 5.5.1.)	Clarification.	2. This is an estimate. See revise Volume II.

CARBUILDER/SUPPLIER: FRANCORAIL/ALSTHOM

SECTION TITLE: Award and Execution of Contract

SECTION NUMBER: CP 4

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	CP-19	CP 4.1.2	Payment Bond/Release In order to hold down the cost reflected in the bid, a payment bond requirement that is tied to progress payments so that is tied to progress payments so that the amount of the bond is reduced by the value of accepted goods would provide adequate protection to LACTC while minimizing unnecessary surety costs.	Cost reduction to Contractor and LACTC.	1. The Performance Bond must stay 100%, by State Law.
2.	CP-20	CP 4.2	Cancellation Any cancellation by LACTC after the award of the contract, but prior to execution of the contract, should require LACTC to reimburse the Contractor for expenses incurred in preparing the bid.	Equitable considerations.	2. No.
3.	CP-20	CP 4.1.4	Certificate of Insurance After having researched the Insurance market place, we have found a limited number of Insurance companies who will be willing and capable to provide the insurance requirements as contained in the specification. This is due to the volatile and highly fluctuating condition which has resulted in very limited insurance market place. Taking into account the potential number of final bidders for this project the placing and the pricing for this insurance within the 10 days period after the awarding of the contract may be adversely affected. We would like to put forward for your review the following options: 1. Reduction of the limit of liability and coverages required. 2. That the LACTC arrange for the most effective coverages which may be paid by the awarded contractor.	Cost reduction to Contractor and the LACTC.	3. No change in insurance requirements.

CARBUILDER/SUPPLIER: FRANCORAIL/ALSTHOM

SECTION TITLE: Scope of Work

SECTION NUMBER: CP 5

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	CP-22	CP 5.1(j)	Manuals on Manufacture The Contractor should not be required to provide reports, drawings, data or manuals on the manufacture of the cars because this information is proprietary.	Procurement does not cover manufacture rights which are proprietary to Contractor.	1. State Law requires full disclosure. - has to run with a system cutout.
		(1)	Abnormal conditions should be defined.	Clarification.	
2.	CP-27	CP 5.4.1	Guarantees There should be an outside limit for the guarantees made by the Contractor in paragraphs (a) and (b). We suggest the addition of "not to exceed 5 years and 6 months from the date each car is delivered to LACTC" to subparagraph (a), and "not to exceed 2 years and 6 months form the date each car is delivered to LACTC" to subparagraph (b).	Guarantee should not be extended due to unreasonable delay in acceptance.	2. No limit at acceptance. 2a. Five years is realistic.
		(a)	4 years warranty for painting is more realistic.	Based on normal practice and experience.	3. See revised Volume II.
3.	CP-30	CP 5.5.1	Technical Service Personnel The required number of Field Service Engineers is unclear. How will that number be determined prior to submittal of the bid? How does this paragraph relate to the 12,000 hour provision on the Bid Form? (See comment under paragraph 3.0.)	Clarification.	

SECTION TITLE: Control of Procurement

SECTION NUMBER: CP 6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	CP-37	CP 6.3.3	Disapproved Drawings No extension of time is allowed for revision of drawing which are disapproved. Perhaps a provision could be added allowing an extension for drawing disapprovals, where the drawings are disapproved improperly, disapproved due to an error by LACTC, or disapproved for any other reason beyond the control of the Contractor.	Unreasonable disapproval of drawings could lead to a dispute if no extension is allowed.	1. No, use the disputes clause.
2.	CP-43	CP 6.6.1	Service Proven Equipment It is unclear whether the requirements of this paragraph apply to the bid stage or the technical proposal stage, or both. The terms "Bidder" and "Proposer" are used interchangeably.	Clarification.	2. See revised Volume II. 3. If the contractor does not find a substantial error nor does LACTC, an acceptable solution must be negotiated if cost or schedule is impacted.
3.	CP-45	CP 6.7.2	Errors and Omissions The following sentence should be added for clarification: "The Contractor is not responsible for any errors and omissions in the Technical Provisions which the Contractor does not discover or of which the Contractor is not made aware."	Clarification.	4. LACTC standard drawing size will be provided. See revised RFTP.
4.	CP-35	CP 6.2.7	Drawing Dimensions and Standards The LACTC Drawing Standards should be defined.		

CARBUILDER/SUPPLIER: FRANCORAIL/ALSTHOM

SECTION TITLE: Control of Materials

SECTION NUMBER: CP 7

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	CP-53	CP 7.5	Shipping Release It should be specified that condition that each car shipped from the Contractor's plant be complete and ready-to-run may be met at a subcontractor's plant if the Contractor uses a local subcontractor in California for the assembly of the railcars.	Clarification.	1. No, local final assembly is not required, cars should be built in an experienced facility. Note: Minor assembly after shipping, i.e. trucks to carbody are acceptable but must be identified in proposal.
2.	CP-54	CP 7.8.1	Acceptance Testing There appears to be an inconsistency between this paragraph and paragraph 2.3.1.4(i) of Volume I. CP 7.8.1 seems to provide that LACTC will conduct acceptance testing, while the Volume I provision states that the Contractor will perform tests at the LACTC facility. CP 2.3.1.4 also states that "tests may also be performed by LACTC at their expense."	Testing by the Contractor will eliminate disputes as to liability and will ensure that component warranties remain in effect.	2. Two tests possible LACTC and contractor. One required by contractor. LACTC may test or may not. See revised Volume I and Volume II.

CARBUILDER/SUPPLIER: FRANCORAIL/ALSTHOM

SECTION TITLE: Legal Responsibilities

SECTION NUMBER: CP 8

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	CP-57	CP 8.4	Payment of Fees and Taxes What governmental permits and licenses are required under the contract? This paragraph should be clarified to stated that the contractor is not responsible in any taxes or permits required for the LACTC to operate the car.	Clarification.	1. Contractor is not responsible for fees, permits, and licenses on taxes required to operate the vehicle in-service. However, the contractor must determine all applicable taxes, fees, duties, etc. that apply.
2.	CP-59	CP 8.10	Risk of Loss There is a conflict between this paragraph and CP 9.4. CP8.10 provides that risk of loss or damages passes to LACTC upon delivery." CP 9.4 provides that the Contractor shall bear the risk of loss until acceptance by LACTC. This conflict should be resolved.	Consistency.	2. Will be upon acceptance not delivery.
	CP-59	CP 8.11	Insurance See comments paragraph 4.1.4.		3. See comment CP 4, Item 3

CARBUILDER/SUPPLIER : FRANCORAIL/ALSTHOM

SECTION TITLE : Prosecution and Progress

SECTION NUMBER : CP 9

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	CP-61	CP 9.2	Indemnification We suggest that the indemnification provision be revised to read: "Contractor shall indemnify and hold harmless LACTC, its offices, agents, employees, and successors from any and all liability in connection with any suit, action, or claim brought because of any injuries or damages alleged to have been caused by, through, or in connection with, the performance of this contract, solely as they result from any negligent act, omission, or failure to act when under a duty to act, by the Contractor or his or her subcontractors, and shall indemnify and save harmless LACTC, to the extent permitted by law, from, and against all loss, cost, damages, and expenses caused by or in any manner growing out of the negligent performance of the contract by the Contractor and his or her subcontractors; and shall pay, liquidate, and discharge any and all valid claims and demands, for injuries to person and damage to property caused by or growing out of the negligent performance of the contract, provided that reasonable notice, tender of defense and reasonable cooperation is provided to the Contractor by LACTC so as not to prejudice the Contractor's ability to defend."	Clarification	1. This is a standard indemnification clause.
2.	CP-62	CP 9.4	Risk of Loss See comment under paragraph 8.10.	Consistency.	2. See previous comment.

CARBUILDER/SUPPLIER: FRANCORAIL/ALSTHOM

SECTION TITLE: Prosecution and Progress

SECTION NUMBER: CP 9

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
3.	CP-62	CP 8.4	Delivery Schedule The delivery schedule reflects calendar dates. This calendar should be set to run from the date of "Notice to Proceed."	Unexpected delays in award of contract could interfere with delivery schedule.	3. Will add: assuming no delays, the date scheduled must be met.
4.	CP-62	CP 9.8	Dispute Resolution The dispute resolution mechanism in this paragraph leaves all final decision-making with the LACTC and requires the parties to resort to the courts. A binding arbitration provision for contract dispute resolution. The contract should provide for binding arbitration by a mutually acceptable third party arbitrator.	Cost reduction and elimination of litigation.	4. Arbitration is not acceptable negotiation, then disputes.
5.	CP-67	CP 9.14	Termination If LACTC terminates the contract pursuant to this paragraph, the Contractor should be paid its costs and lost profits, including close-out costs, profits on work performed, anticipated profits on work cancelled, and other costs incurred in reliance on the contract.	Equitable considerations.	5. No profits on work not performed.
6.	CP-63	CP 9.7(b)	Claim The notice should be given to the LACTC within 30 days.	Equitable consideration.	6. Fifteen (15) days is reasonable.
7.	CP-66	CP 9.13	Termination 1. Should be applied only when the delays are substantial. A substantial delay should be defined in accordance with the provision of paragraph 9.3. 2. Should be applied only when a failure to perform constitutes a material breach of the contract.	Equitable consideration.	7. 1. No change. 2. Agreed.

CARBUILDER/SUPPLIER : FRANCORAIL/ALSTHOM

SECTION TITLE : Measurement and Payment

SECTION NUMBER : CP 10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	CP-71	CP 10.3	Price Adjustments The economic price adjustments should take into account the accepted national practices of a non-U.S. Contractor's country of origin.	Equitable and practical considerations.	1. No.
2.	CP-68	101 (e)	Terms of Payment Provisions should be established to be able to modify the sequence of the payment for any acceptable reason or events which can occur during the performance of the contract and affect one of the categories listed in this paragraph.	Not to jeopardize the general timing by the delay of one item. Ex. The approval of the heavy or spare part manual is generally subject to a long process of review between the carbuilder, suppliers, and the Authority, and it takes generally more time than expected.	2. Identify where the sequence would be changed in your proposal; we will review. Everyone has to consider this in their bid. Performance Bond is a blanket guarantee that the contractor will not default on the contract or go out of business. The retainage is our ongoing guarantee.
	CP-68	10.1 (1)	Considering the other requirements as the 100% performance bond, it seems not equitable for the Contractor to support a 10% retainage of the total for each monthly invoice.	Equitable consideration and cost impact on the contract price.	

CARBUILDER/SUPPLIER: General Electric Co.

SECTION TITLE: Definitions & Abbreviations, Vol. II, Terms & Conditions

SECTION NUMBER: CP1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	None	CP1	The many technical definitions and abbreviations should be transferred to the Volume I Technical Requirements where they compliment or interpret the Technical Specification. Examples include adhesion, baseline design, blending, coast, concept dwg., contract dwgs, drive, failsafe, field jumper, full load, jerk load weighing, traction system, wheel slip, etc., etc.,.	Past experience has been that Engineers tend to refer only to the Technical Specification. The addition of the technical items to Volume I would preclude misinterpretation or misunderstanding of the technical requirements.	1. Agree.
2.	None	CP1.1	Change Order (Definition) It is assumed RFTP will be amended by Addendum, therefore reference to "or RFTP" in second line should be deleted.	Clarification	2. Agree.

CARBUILDER/SUPPLIER: General Electric

SECTION TITLE: Procurement Process

SECTION NUMBER: CP2.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
3.	CP-3,4	CP2.3.3	Technical Proposal Since the 11 subsystem suppliers must be identified in the technical proposal by the carbuilder and only 1 LRV in any technical proposal is allowed, also considering CP3.1 requires 15 copies, All this could result in an overwhelming number of proposals. The LACTC should consider allowing proposals to be more flexible while identifying the subcontractors.	Reduce the volumes of proposal submitted and simplify the evaluation and approval procedure.	3. We will allow one proposal with up to three (3) alternate subcontractors.
4.	CP-4	CP2.3.3	Technical Proposal The second paragraph requires the proposer to define spare parts and tools. However, no where is quantity or the item identified, for example 20 traction motors w/half coupling, 5 set of all static cards, 5 sets of all relays and contactors.	To establish a common list by type for all carbuilder supplies to bid against.	4. The Final IFB will include a final spare parts list with quantities.

CARBUILDER/SUPPLIER: General Electric Co.

SECTION TITLE: Proposal Instruction

SECTION NUMBER: CP3

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
5.	CP-11	CP3.3	Domestic Content This requirement should be deleted from the Technical Proposal. The domestic content should be a factor in the bid evaluation but by calling for compliance with the Buy America provisions ie. 51% plus final car assembly.	The requirement for Buy America would assure U.S. major subsystem suppliers have the opportunity to participate in the competition and to assure final car assembly takes place in the USA. US subsystem suppliers will benefit the LACTC with after-sales technical service support and the availability of spare parts after all the cars are delivered and the warranty has expired.	5. The document has been rewritten to require 20% domestic content.
6.	CP-11	CP3.3	Life Cycle Cost Please clarify how the life cycle cost data will be evaluated in Phase I. The Phase II bid makes no provision for life cycle cost in the roll up.	Clarify evaluation criteria.	6. Life cycle cost data will be reviewed but not considered as an adjustment to the bid price.

CARBUILDER/SUPPLIER: General Electric

SECTION TITLE: Scope of Work

SECTION NUMBER: CP-4

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
7.	CP-27	CP5.3.3	Pricing Adjustments - changes The second paragraph, last sentence, calls out the "LACTC shall be sole judge of the adequacy of the pricing data". This should be deleted in favor of mutual negotiation and failing that allow for the disputes clause to apply.	Mutual negotiation should satisfy nearly all change orders.	7. We disagree.
8.	CP-27	CP5.3.3.2	Audit It is assumed "Audit" only applies to change orders. Recommend this clause be clarified by so stating	To conform to intent of Article 5.3 changes	8. This is incorrect, audit applies to all elements of the bid.
9.	CP-29	CP5.4.4	R&R at Contractor Expense The spec indicates "where this work is performed by the LACTC" but does not call out how this occurs. Recommend clarification to "when requested by the Contractor"	Clarification to require Contractor to perform Repair Work.	9. Contractor will be required to do all warranty and repair work.

CARBUILDER/SUPPLIER: General Electric

SECTION TITLE: Award of Contract

SECTION NUMBER: CP-4

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
10.	CP-19	CP4.1.2	100% Performance Bond The performance bond requirement for 100% should be reconsidered to allow a reduction to 10% of the Contract value during the warranty period.	Reduction in Performance Bond consistent with risk allows for favorable cost/bid to LACTC	10. The revised document reflects a staged release of the performance bond.

CARBUILDER/SUPPLIER: General Electric

SECTION TITLE: Control of Procurement

SECTION NUMBER: CP-6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
11.	CP-31	CP6.2.1	Review Procedures Recommend the last sentence of the last paragraph be amended to delete "and can be used to secure the manufacture or replacement of any items without any liability to the LACTC or SCRTD". As written, proprietary info and dwgs, are automatically licensed to the LACTC.	Proprietary designs and manufacturing dwgs. must remain the property of the Supplier as long as parts and technical support is available from the supplier.	11. This is required by State law.
12.	CP-35	CP6.2.7	Drawing - Standards The "drawing size - to LACTC Standards" should be limited to those identified in 6.2.3 and exclude the Contractors or Suppliers manufacturing dwgs. submitted for additional information. LACTC preferred dwg. sizes should be identified in the final Technical Proposal.	Clarification that LACTC dwg. sizes apply at "top level" only.	12. We will provide the required drawing sizes.
13.	CP-35	CP6.2.8	Instructional Dwgs. The ATA100 requirement for instructional dwgs. should be reconsidered. The requirement for Maintenance Manuals and Parts Catalog format should be addressed, not just instructional dwgs.	Significant cost impact. Refer to the consultant for clarification based on his experience with Baltimore/Miami, Northern Indiana, and New Haven M2/M4 Procurements.	13. ATA100 is to be used as a guide for level of detail required.

CARBUILDER/SUPPLIER: General Electric

SECTION TITLE: Scope of Work

SECTION NUMBER: CP-6 (continued)

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
14.	CP-36	CP6.2.10	Drawings of Parts See CP6.2.1 comment above. Recommend deleting this requirement which requires proprietary dwgs be unilaterally furnished by the subcontractor. Further, today's computer dwgs. & techniques provide for a separate bill of material, not one as part of the drawing field.	Delete this paragraph. This requirement should not exist when equipment is provided by major domestic suppliers.	14. This is required by State law.
15.	CP-37	CP6.3.3	Drawing Submittals o Recommend the LACTC return of drawings be "within 15 working days" instead of 30 calendar days". o Delay in LACTC dwg. approval impact can be cost as well as production schedule. Recommend LACTC include "Cost Impact".	Meet delivery schedule Contract price assumes dwg. approval within approval cycle delays impact cost as well as delivery schedule.	15. 30 days is required. o Schedule only will be addressed automatically.
16.	CP-41	CP6.5.1	Reproducibles Submittal of reproducibles as defined implies no changes during revenue operation of the first car. Further, the detail required again implies proprietary manufacturing parts dwgs. and does not call for maintenance and renewal parts manuals to be submitted by the Contractor.	Rewrite to clarify Reproducible requirement consistent with manual requirements, car testing and dwg. rights of Contractor and Suppliers.	16. The section allows the cars to be maintained, changes shall be reflected in as builts.

CARBUILDER/SUPPLIER: General Electric

SECTION TITLE: Control of Procurement

SECTION NUMBER: CP-6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
17.	CP-42	CP6.5.6	Material Identification Lists Assume the Contractor is to provide an integrated Renewal Parts Catalog in an acceptable format which includes vendor identification of commercial available hardware and components.	Rewrite to provide the LACTC a Catalog consistent with Industry standards and not a collection of Control and Subsupplier bill of material lists.	17. Agreed.
18.	CP-43	CP6.6.1	Requirements Recommend the requirement for design review, if required, to determine "service proven equipment" be prebid as the LACTC determination can significantly impact the bid.	Clarification of Service Proven Requirement on Contractor and Supplier	18. It is part of the proposal process.
19.	CP-44	CP6.6.4	Suppliers to be Listed "No more than three suppliers". The Phase I technical qualification identified approved suppliers, therefore, the carbuilder should have the opportunity to utilize any of them including submitting separate bids if necessary. Recommend this 3 supplier limit be deleted.	All suppliers previously approved in technical evaluation should be allowed to participate in the Carbuilder's procurement process pre or post bid.	19. Absolutely not.
20.	CP-45	CP6.8	Access to Work & Records This article allows broad rights of access to any and all work or records under the contract. This access should be limited to that required for the purpose of establishing compliance with the technical requirements of the Specification.	As written allows access to proprietary information and plant areas not required to verify compliance with the technical specification.	20. This is required by State law.

CARBUILDER/SUPPLIER: General Electric

SECTION TITLE: Control of Materials

SECTION NUMBER: CP7.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
21.	CP-54	CP7.8.1	Acceptance Testing Since liquidated damages based on calendar days only, delete the phrase "exclusive of holidays" for the LACTC time to accept a Car, alternatively amend CP9.3 liquidated damages to exclude holidays.	Clarification and consistency for the Contractor and the LACTC.	21. Holiday exclusion is reasonable.
22.	CP-55	CP7.8.3	Corrections Since a car could be conditionally accepted (ref. 7.8.2) and placed in revenue service there should be some clarification to LACTC's unilateral decision on acceptance. Recommend "acceptance will not be unreasonably withheld for minor correction or retrofits" and only on the basis of failure to meet Specification.	Clarification	22. Conditional acceptance allows a progress payment, see revised RFTP.
23.	CP-56	CP7.10	Spare Parts-Shipment These Spare Parts are assumed to be those purchased by the LACTC under the Contract (Ref. Pg. CP-16 it. c) and not the Contractor's warranty spares.	Clarification	23. Correct.
24.	CP-56	CP7.11.2	LACTC Rights After Termination (Guarantee Period) If the intent is assure spare parts support after the contract, a more appropriate clause would be to call for guaranteed parts availability for 10 years with the requirement for appropriate dwgs. in the event the part is no longer available from the Contractor or his subcontractors.	Meet the intent of Spare Parts support.	24. Required by State law.

CARBUILDER/SUPPLIER: General Electric Co.

SECTION TITLE: CP-8

SECTION NUMBER: Legal Responsibilities

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
25.	CP-59	CP8.11	Insurance The requirement for insurance should be the responsibility of the Contractor and any sub-contractor insurance should be resolved in the Contractor/Subcontractor contractual negotiations. This should allow for lower cost by limiting the need for multiple subcontractor coverage.	Assure Insurance coverage for LACTC by Contractor at lower cost.	25. The insurance requirements have been provided to LACTC by their project insurance carrier.
26.	CP-60	CP8.11.d	Contractors Protective Liability Insurance Assume to apply to the Contractor and his Sub-Contractor's negligence and not the negligence of the Commission.	Clarification	26. Correct.

CARBUILDER/SUPPLIER: General Electric

SECTION TITLE: Prosecution & Progress

SECTION NUMBER: CP-9

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
27.	CP-63	CP9.4	Delivery and Acceptance Schedule Second paragraph considers storage of cars or spare parts in the event the LACTC can not receive the items however, the only contract compensation is for storage. This should be amended to allow for an equitable adjustment in price, payment, delivery schedule of all items, acceptance, and warranty as well as storage charges.	Need to clarify total impact on Contract in the event the LACTC delays delivery.	27. The only additional cost incurred by the contractor would be storage costs. Acceptance must occur 30 days after delivery, if no performance reason for not accepting a car is identified.
28.	CP-63 -64	CP9.7	Notice of Potential Claim The requirement for 15 day Notice to LACTC after the contractor should know of the potential claim should be amended to a more fair and reasonable 60 Calendar days.	Clarification to allow adequate time for the contractor to give notice.	28. We disagree.
29.	CP-65	CP9.11	Costs of Stop Work A stop work order could also impact the schedule as well as work scope or Contract Price. "Equitable adjustment" should be amended to include "schedule".	Clarification to include schedule is equitable adjustment to Contractor.	29. A stop work order is for cause, the contractor must still meet the delivery schedule.

CARBUILDER/SUPPLIER: General Electric

SECTION TITLE: Measurement & Payment

SECTION NUMBER: CP-10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
30.	CP-68	CP10.1,d e,f	Payment vs. Cost Progress Payments have been identified (Ref. CP-69) their relationship to the actual cost incurred may not be applicable to any single milestone. This is a fixed price contract, not cost plus, Paragraph d,e,f, should be deleted.	Delete paragraphs not applicable to to the Contract.	30. This has been modified in the Revised Contracts Document.
31.	CP-69	CP10.1	Progress Payment Schedule Category J. Milestone should be based on the Contractors receiving the major subsystems. Installation is not the responsibility of Subcontractors to receive timely payment. Category N and O Percentages should be reversed between N and O to more accurately reflect costs, also N should be on the basis of shipment not delivery.	Avoid delays in pass thru payments to Major Subcontractors Improve cash flow for contractors to allow more favorable bid to LACTC.	31. We believe this is a problem between contractor and supplier. We disagree.

CONTRACTOR/SUPPLIER: General Electric

SECTION TITLE: Audit and Inspection of Records

SECTION NUMBER: CP-11

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
32.	CP-78	CP11.0	Audit and Inspection of Records This article should only apply to changes to the contract instead of the entire contract. This contract is fixed price and not cost plus. The article title and subsections should be amended to apply to "Changes in excess of $10,000." (See also CP6.8, Pg CP-45.)	Audit and Inspection should be limited to changes.	32. Audit applies to all elements.

CARBUILDER/SUPPLIER : KAWASARI HEAVY INDUSTRIES, LTD. - ALNA KOKI CO., LTD. (KHI-ALNA)

SECTION TITLE : _____

SECTION NUMBER : _____

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
6.	CP-23	CP 5.2.2	WE WANT TO JUST CONFIRM THAT THE ENGLISH SYSTEM OF WEIGHTS AND MEASURES ARE MEANING "FT. AND POUND".		6. Correct
7.	CP-24	CP 5.2.6	RE: PROVEN SERVICE REQUIREMENT WHEN WILL LACTC MAKE DECISION OF "PROVEN SERVICE"? IS IT BETWEEN POINTS OF STEP ONE AND STEP TWO?		7. No, determined as part of Step One, prior to Step Two.
8.	CP-27	CP 5.4.1	RE: WARRANTY PERIOD 5 YEARS IS TOO LONG. ONE YEAR IS REASONABLE AND REGULAR. BY WHAT STATUS DOES LACTC DECIDE THE CLAIM FOR PAINTING?		8. We disagree, warranty to stay as is.
9.	CP-28	CP 5.4.3	5 YEARS IS EXCESSIVE. IS 1 YEAR ACCEPTABLE AS PER STANDARDS OF APTA? APTA MODEL PROVISION RECOMMENDS REPLACEMENT WITHIN 12 MONTHS PERIOD FOR 25 % FAILURE RATE.		9. No, warranty to stay as is and is typical.
10.	CP-41	CP 6.5.1	RE: TIME AND SCOPE OF SUBMITTALS. WE REQUEST TO ADD WORDING OF: "UNDER ALL CHANGES AND MODIFICATION ARE FINISHED UNDER MUTUAL AGREEMENT". Revised		10. Should changes occur as a result of testing, revised drawings and data must be provided within 90 days of agreement to implement change.

CARBUILDER/SUPPLIER: KAWASAKI HEAVY INDUSTRIES, LTD., - ALNA KOKI CO., LTD. (KHI-ALNA)

SECTION TITLE: _____

SECTION NUMBER: _____

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
11.	CP-46	CP 6.9.4	RE: STATUS OF SUBCONTRACTOR. BY WHAT PROCEDURE OR HOW DOES LACTC RECOGNIZE SUBCONTRACTOR(S)? CAN SUBCONTRACTORS SPEAK DIRECTLY WITH LACTC?		11. o Subconsultants to be approved as part of the proposal process. o LACTC recognizes only the prime; however, we reserve th right to speak directly to a subcontractor should the prir be uncooperative in arranging meetings.
12.	CP-50	CP 6.12	RE: CAP AND CAR FRONT-END MOCKUP WE REQUEST LACTC TO DECIDE THE LENGTH OF CAB BODY. (HOW MANY FEET OF MOCKUP DO WE NEED BEHIND THE FRONT OF CAB BODY?)		12. This is a function of the specific car proposed.
13.	CP-55	CP 7.8.5	PLEASE EXPLAIN DEFINITION OF "STOCKPILE".		13. Will change "stockpile" to "store."
14.	CP-56	CP 7.11.2	WHAT IS EXTENT OF LACTC REPLACING COMPONENT PARTS? DOES LACTC CONSIDER ENTIRE ARTICULATION OF THE CAR OR PARTS OF THE ARTICULATION A COMPONENT OR ASSEMBLY? WE THINK IT WILL CAUSE SOME INFRINGEMENT OF THE PATENT OR LICENSE. WE REQUEST LACTC TO ADD WORDS OF "UNDER WRITTEN CONSENT OF PATENT OR LICENSE HOLDER".		14. o We don't understand the question. o This question does not apply to this section. o This is contrary to State La except for patented devices.

CARBUILDER SUPPLIER KINKI SHARYO/C. ITOH

SECTION TITLE DEFINITIONS

SECTION NUMBER 1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
	-	CP 1.1	Please clarify difference between "Supplier" and "Subcontractor". This is important as certain contract provisions must be passed on to Subcontractors but not Suppliers.		1. The definition will be the sam no supplier.

CARBUILDER SUPPLIER Kinki Sharyo/C. Itoh

SECTION TITLE Procurement Process

SECTION NUMBER 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
	CP-8	CP 2.5.3.2	Under what conditions, may or may not, vendor financing be considered in basis for contract.		o Vendor financing is a basis for determining responsiveness but not contract award.

CARBUILDER SUPPLIER Kinki Sharyo/C.Itoh

SECTION TITLE Scope of Work

SECTION NUMBER 5

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
	CP-28	CP 5.4.4	Please clarify that Contractor can work on equipment during warranty period and that this paragraph only applies in the event Contractor elects to have LACTC or SCRTD do such work. Also clarify that LACTC or SCRTD would not do work unless Contractor requested or in the case of defect in material or workmanship.		o All warranty work is to be accomplished by the contractor. However, based on availability, etc. Contractor may request LACTC/SCRTD assistance. o LACTC/SCRTD would only work on warranty work as directed by the contractor. Note: At LACTC option
		CP 5.4.2	Please add that warranty will remain valid so long as repairs or replacement, done by LACTC, are in accordance with Contractor's instructions.		o This is correct; however, the contractor is responsible for supervising the work, and therefore LACTC has no liability.

CARBUILDER SUPPLIER Kinki Sharyo/C. Itoh

SECTION TITLE Control of Procurement

SECTION NUMBER 6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
	CP-31	CP 6.2.1	In third paragraph, please add that Contractor has right to designate what it believes is proprietary and that LACTC's right to proprietary information requires Contractor's written approval.		o This, as written, is State law.

CARBUILDER SUPPLIER Kinki Sharyo/C. Itoh

SECTION TITLE Control of Procurement

SECTION NUMBER 6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
	CP-31	CP 6.2.1	In third paragraph, please add that Contractor has right to designate what it believes is proprietary and that LACTC's right to proprietary information requires Contractor's written approval.		o No, see numerous other comments

CARBUILDER SUPPLIER Kinki Sharyo/C.Itoh

SECTION TITLE Legal Responsibilities

SECTION NUMBER 8

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
	CP-59 CP-62	CP 8.10 CP 9.4	The second paragraph of CP 8.10 is in conflict with third paragraph of CP 9.4. Please clarify when risk of loss passes to LACTC.		o We agree, will be on acceptance in both sections.

CARBUILDER SUPPLIER __ Kinki Sharyo/C.Itoh

SECTION TITLE Measurement & Payment

SECTION NUMBER 10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
	CP-68	(c)	Sequential order payment assumes car builder works in that order, which is probably not the case. Please eliminate sequential order and make payment upon completion of milestone.	Car builder cash flow adversely affected meaning higher price to LACTC	o Some changes have been made to "software" submittals.
	CP-69	F	Manuals will not be completed until after car is completed and therefore should not be early progress payment.	"	o This is a proven car. The information may need to be reformatted but not created ne Progress payment whenever completed and submitted and approved by LACTC.
	CP-68	(j)	Retainage of 10% seems high. Usual is 5%.	"	o We disagree.
	CP-68	(f)	What is rate of interest LACTC will charge?		o This has been deleted.

. CARBUILDER SUPPLIER : Kinki Sharyo/C.Itoh

SECTION TITLE Non-discrimination & Affirmative Action

SECTION NUMBER 12

.	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
	CP-80	CP 12.2	Whose certification of DBE/WBE status is required?		o LACTC certification, see revised Volume II.

CARBUILDER SUPPLIER Knorr Brake Corporation.

SECTION TITLE Definitions and Abbreviations.

SECTION NUMBER CP1.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	None	CP1.0	Recommend the final Volume. Technical Requirements, be expanded under Section 1, General Requirements, to include the same subsections as are currently in CP1.0, CP1.1 and CP1.2 pertaining to Definitions and Abbreviations. The technical definitions in CP1.1 are critical to proper interpretation of the vehicle performance requirements and in certain areas add performance requirements which are not in the technical provisions.	Although the preface in CP1.0 incorporates these definitions from volume 2 into volume 1 by reference, past experience has been that engineer- ing staffs (at carbuilder and sub- contractor level) rarely are informed of "Contract Provisions". The inclusion specifically in both volumes precludes misinterpretation of the technical requirements.	1. Definitions and abbreviations will be found in both Volume and Volume II.
2	None	CP1.1	Definitions - Change Order Recommend deletion of "or RFTP" in the second line and deletion of the last sentence of this definition. Change orders are not applicable to the RFTP (which is superseded by the contract after contract award). Additionally section CP5.3.1 defines changes as directed changes (not requiring contractor execution) and only requires contractor execution on ammendments.	Clarify definition.	2. The RFTP is part of the contract and technically is higher in priority than the proposal. However, RFTP in this case is redundant.
3	None	CP1.1	Definitions - Contract Recommend the addition of "or supplemental agreements" in the next to last line after the term "executed change orders". The section on changes, CP5.3, contemplates both change orders (CP5.3.1) and supplemental agreements (CP5.3.2).	Clarify definition to reflect intent of section CP5.3.	3. Agree.
4	None	CP1.1	Definitions - Equal Recommend substitution of the terms "specified in the Contract Documents,". As the requirements for proof of "or equal" is required in the RFTP and Contract Documents, this change allows for the broader use.	Clarification	4. No.
5	None	CP1.1	Definitions - Failsafe Recommend substitution of one term "Volume 1, Section 2.1.1" for the term "Section 2.1.1" to avoid confusion with CP2.1.1.	Clarification	5. Agree.

CARBUILDER SUPPLIER [illegible]

SECTION TITLE Definitions & Abbreviations.

SECTION NUMBER CP1.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
6	None	CP1.1	Definitions - Full Load The current definition of Full Load significantly affects the vehicle performance requirements for braking. The technical provisions (2.1.7) define weights up to AW3 on the basis of up to 6 passengers per square meter resulting in an heavy car weight of 126,654lbs. This definition of full load based on 1.35 passengers per square foot (or 8 passengers per square meter) raises the maximum car weight by 8,316lbs to 134,970lbs. As the performance requirements of section 2.2, and especially the 2.2.3.1 Service Braking and 2.2.3.2. Emergency Braking requirements are specified at full load, this increases the braking requirements by approximately 6.5% and the friction brake blending requirements by approximately 16.5% (due to the extremely low section 10.6.4 dynamic brake capability specified). Within the vehicle constraints specified, this friction brake capability may not be installable. Additionally the thermal requirements of 12.6.11. b/c will require significantly lower speed restriction due to the added weight. Recommend changing "1.35 ft. 2" to "6 square meters" to leave the definition of full car equal to AW3, and not a higher load "AW4".	The current specified weights are very high and may create performance/thermal constraints on the vehicle. See KNORR comments 3,7,15,20,26 and 27 previously submitted pertaining to the Technical Provisions and weight/performance problems. This new definition increases the car weights significantly and creates the potential need for additional equipment and more severe restrictions on operations in the event of dynamic brake failure.	6. Full Load will be defined in Volume I as 135,000 lb. Note: Technical changes mitigate concern.
7	None	CP1.1	Definitions - Weights, Assigned The current definitions end at AW3. In the event LACTC does not modify the Full Load definitions as recommended in our comment 6 above, recommend inclusion of a subsection e) AW4 car with AW1 plus 8 persons/m2 standing.	Consistency of specification.	7. Full Load, 135,000 lb, AW4 is deleted as a term.

CARBUILDER SUPPLIER ...

SECTION TITLE Procurement Process.

SECTION NUMBER CP2.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
8	CP-4	CP2.3.3	Technical Proposal Subsection 4 requires the proposer to define the complement of spare parts, special tools and instrumentation for maintenance and the training program. The technical provisions in section 15 define the quantity and types of all equipment required except for spare parts (which are referred to CP3). The bid form (CP3) does not include the list of deliverables from section 15 or the basis for establishing a spare parts proposal. Request clarification on: a) will the bid form include a list of the required contract spares. b) should the proposer recommend a list of contract spares in the proposal and if so on what basis (annual, overhaul, etc.) should the recommendation be made.	In order to establish a comparable list of deliverables for all proposers/bidders, a common list of spares is required in the technical provisions (with equivalent price list in the bid form) or a basis for recommendation is required. This guarantees all required spares are included and all proposals are equivalent.	8. a. The RFTP will require a list of spare parts from each proposer, the bid form will be modified to include a required list of spare parts. b. See above, the basis should be defined by each proposer including assumptions.
9	CP-4	CP.2.3.3	Technical Proposal Subsection 5 allows only one proposed LRV be described in any Technical Proposal and the RFTP contemplates up to 3 subcontractors per major subsystem for the 10 major systems required to be defined by CP6.6.4. Excluding the CP3.1 requiremenc for 15 copies of each proposal, this can result in numerous combinations of subcontractors, and thus a significant number of proposals from each carbuilder. At a subcontractor level to all carbuilders, the number of proposals become extremely large. Recommend the Authority consider allowing individual proposals to contain reasonable combinations of subcontractors for ease of comparison and evaluation.	Reduce the cost of the stage 1 bid and reduce the volumes of data to be reviewed by the Authority.	9. This has been done.

CARBUILDER/SUPPLIER: Hart Brake Corporation.

SECTION TITLE: Proposal Instructions.

SECTION NUMBER: CP3.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
10	CP-10	CP3.1	Recommend reduction of the number of copies of proposals for review to a more reasonable number (3-5). Should the additional copies be required for the successful bidder for contract purposes, these can be provided at contract award. The number of proposals required by CP2.3.3 is already significantly high.	Reduce cost of bid and volumes of proposals to be handled/controlled by the Authority.	10. Needed for LACTC internal review.
11	CP-10	CP3.3	Recommend deletion of the term "and within budget" from the end of the subparagraph labeled "Part I". As no pricing data is allowed in the proposal, and this is a fixed price contract, ability to complete the project within budget is not demonstrable (nor even relevant on fixed price contracts).	Eliminate pricing data from proposal.	11. A contractor who has a history of buying a contract and then fighting constantly for "additional compensation" and claims for in scope work is not desirable. Statement to stay.
12	CP-11	CP3.3	Recommend deletion of the Domestic Content requirement from the technical proposal. This would require substantial pricing efforts by the carbuilder and subcontractors significantly prior to the bid date. It may be more appropriate in the technical evaluation to obtain a description of the intent of the carbuilder and his subsuppliers on domestic versus foreign manufacture without percentages. Should the actual domestic content be an evaluation requirement of the final bid and of responsiveness of the bidder, this could be included in the price bid (Stage 2) as a requirement (similar to vendor financing).	To eliminate pricing and efforts of preparing pricing during the iterations of the technical proposal.	12. Domestic content is required, no less than 20% of total bid price, see revised documents.

CARBUILDER SUPPLIER Knorr Brake Corporation

SECTION TITLE Award and Execution of Contract.

SECTION NUMBER CP4.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
13	CP-19	CP4.1.2	Recommend the Authority consider allowing the performance bond to be reduced to 10% of the contract price after delivery and acceptance of all vehicles.	Reduce bonding costs during the warranty period while maintaining adequate protection of performance.	13. Staged release of Performance Bond has been allowed, see revised Volume II.
14	CP-20	CP4.1.4	Recommend deletion of the last sentence of this section. CP8.11.1 allows for the commission to provide such insurance (at contractor expense) in the event the contractor fails to obtain the required insurance.	Remove potential conflict between CP4.1.4 and CP8.11.1.	14. No. Contractor must provide certificate and coverage as specified, failure is grounds for disqualification. LACTC at its option may be provide insurance.

CARBUILDER SUPPLIER _____

SECTION TITLE Obligations of Contractor.

SECTION NUMBER CP5.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
15	CP-27	CP5.3.3.2	Recommend changing "relating to its performance under" to "relating to price adjustments and its performance of change orders under". The current audit clause allows for audit of all records of the contract. As this is a fixed price contract, audit of the base contract price should not be required.	Modification of this subsection to be in conformance with the broad intent of section 5.3, changes.	15. No, the intent and requirement is to be allowed access to all records, although it would be exercised to verify price adjustments and change orders.

CARBUILDER SUPPLIER Knorr Brake Corporation.

SECTION TITLE Control of Procurement.

SECTION NUMBER CP6.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
16	CP-31	CP6.2.1	Recommend the last subparagraph be modified to change "secure the manufacture or replacement of any items" to "secure the manufacture (except for specialty items such as motors, control components, brake equipment etc. which require a high degree of specialization of proprietary technique) or replacement of vehicle items."	The exclusionary clause inserted protects those proprietary specialty items from the automatic licensing to the LACTC or others, yet allows LACTC to secure manufacture of non specialty items. Most specialty items (such as propulsion or brake systems) are not licensed to the end user for future manufacturer (and in some cases, these designs or products are not permitted to be licensed outside of the corporation.)	16. No, this is contrary to State Law.
17	CP-36	CP6.2.10	Recommend changing "for each part designed and/or manufactured by" to "for each part designed specifically for and/or manufactured exclusively for this contract by". The current broad statement requires extensive drawings to be submitted for all major equipment and down to miscellaneous fasteners. As the intent of drawing submittals is to convey design intent, document deliverables and allow for operation and maintenance of equipment, this degree of drawing detail should not be required. Additionally many standard commercial items are not manufactured exclusively for this contract and drawings of detail parts or components and subcomponents may either not be available or may be proprietary.	Establish a reasonable level of drawing requirements and eliminate need for drawings of standard commercial items or standard products.	17. No.
18	CP-43	CP6.6.1	The service proven equipment requirements include the right of LACTC to waive requirements for detailed design review, concurrence and applicable performance testing after a determination of "service proven equipment" is made by the LACTC. After such determination, LACTC reserves the right to require the applicable performance testing to be conducted. Request clarification on when LACTC contemplates making such a determination prior to bid or after contract award. As the currently specified test requirements are extensive and costly, the LACTC right to require such testing after a favorable determination of service proven equipment is made, may have an adverse cost impact on the supplier of this equipment.	Clarification of LACTC intent and cost requirements for bidders/contractor.	18. The contractor should assume that all tests will be required. LACTC may waive the testing but only after contract award. If a test were waived, we would expect some equitable adjustment to the contract price.

CARBUILDER, SUPPLIER ...

SECTION TITLE Control of Procurement.

SECTION NUMBER CP6.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
19	CP-45	CP6.7.2	Reference in this section is made to the "Contracting Officer", however, the Contracting Officer and relationship to the Contract Administrator are not defined in Section CP1.1 Definitions. If the two are one and the same recommend replacing Contracting Officer where it may appear in the specification with Contract Administrator or including the alternative name in the definition of Contract Administrator in CP 1.1.	Clarification.	19. Contracting officer and project manager are defined in revised Volume II.
20	CP-45	CP6.8	The current section includes broad rights of access to any and all records or place of work under the contract. Recommend adding the sentence "The access to work and records required by this section pertain solely to those areas required for the purposes of determining compliance with the contract requirements of materials and workmanship."	The current clause is too broad and encompasses proprietary or confidential areas or records which are not required to be accessible to the LACTC in order for the LACTC to verify contract compliance.	20. This is a reasonable clause.

CARBUILDER SUPPLIER

SECTION TITLE Control of Materials.

SECTION NUMBER CP7.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
21	CP-54	CP7.8.1	Recommended deletion of the phrase "(exclusive of holidays)", and correction of the reference "Section CP10.2" to "Section CP6.10.14". As time is of the essence in this contract, and liquidated damages are assessed based on calendar days, the exclusion is inappropriate.	Clarity of contract delivery/acceptance time frames and obligations of the LACTC for timely acceptance of vehicles.	21. Holidays are a reasonable exclusion.
22	CP-56	CP7.11.2	Recommend changing "any assembly or component for its sole use" to "any assembly or component, except for specialty items such as motors, control components, brake equipment, etc. which require a high degree of specialization of proprietary technique, for its sole use". The current provision grants a non-exclusive license for all equipment, including specialty proprietary systems such as brakes and propulsion, to the LACTC. If the intent of this section is to assure spare parts support after contract completion, a more appropriate method would be to include a mandatory flow down clause requiring guaranteed spare parts availability for a fixed period of time (i.e. 10 years) and licensing rights with appropriate royalties in the event of unavailability of a part from a subcontractor.	The current broad licensing rights are not applicable to essentially service proven systems which are not custom designed to a customer specification solely for a specific contract. As these major subcontractor systems are proprietary and sold to various users throughout the world, their licensing to a single customer while available from the subcontractor, is not customary and may not be possible.	22. This is contrary to State Law.

CARBUILDER SUPPLIER Knorr Brake Corporation.

SECTION TITLE Legal Responsibilities.

SECTION NUMBER CP8.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
23	CP-59	CP8.11	Recommend the deletion of the requirements for the subcontractors to obtain and maintain the insurance coverages specified in CP8.11, and the substitution of a requirement for the contractor to obtain the coverages required for the contractor and any/all subcontractors under the contract. The use of a single blanket insurance requirement is significantly less costly than the potential multiplier effect of individual coverages by all subcontractors. Any subcontractor insurance requirements should be subject to the contractor/ subcontractor contractual relationship. This has been effectively used on several recent (including California) procurements.	Reduce insurance costs under the contract while maintaining the same coverage protection to LACTC.	23. See response too Knorr comment 14.

CARBUILDER/SUPPLIER [illegible]

SECTION TITLE Prosecution and Progress.

SECTION NUMBER CP9.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
24	CP-61	CP9.1	Recommend changing "Section 3.10" to "Section CP10.0."	Correction of reference.	24. Agree.
25	CP-63	CP9.4	The section contemplates storage of equipment in the event the equipment cannot be received by LACTC although is available for timely delivery (and acceptance) by the contractor. Recommend changing "and an equitable adjustment for storage will be negotiated" to "and an equitable adjustment to contract price, payment schedule, delivery and for storage charges will be negotiated." Also recommend deletion of the last sentence of this paragraph pertaining to Liquidated Damages and the addition of a sentence "In the event such storage is required for longer than a period of 6 months (or such longer time as mutually agreed) then, for payment milestone purposes, the vehicles will be deemed to have been accepted and all retentions for equipment delivery and acceptance shall be payable to the contractor."	Establish equitable delivery and price adjustments, other than just storage costs, in the event the LACTC delays delivery of equipment. As significant payment retention (at least 20%) is contemplated by the payment schedule, these delays can have a severe effect on the contractor (and subcontractors). The storage beyond a reasonable time period should be established as a basis for payment of all retentions to the contractor.	25. If the contractor is directed to store cars, the contractor is only due additional costs for storage. Should LACTC direct a change to delivery place or schedule the contractor has remedy under the changes clause.

CARBUILDER, SUPPLIER Knorr Brake Corporation.

SECTION TITLE Measurement and Payment.

SECTION NUMBER CP10.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
26	CP-68	CP10.1.c	Request clarification on the categories as presently categories P, P, and Q are omitted and H is repeated in the last sentence.	Clarification on intended sequence of payment milestones.	26. Change has been made.
27	CP-68	CP10.1.d CP10.1.e CP10.1.f	Recommend deletion of the three sections CP10.1.d through CP10.1.f as the intent of a fixed price contract is to provide progress payments on the contract price which may not, at any single payment milestone, have a relationship to costs incurred. These requirements are normally only found in a cost plus type contract.	Deletion of clauses which may not be applicable to this type contract and which may impose a penalty upon the contractor when his work and cost schedule do not match the LACTC imposed progress payment schedule.	27. Agree.
28	CP-68	CP10.1.j	Recommended deletion of this section which establishes a 10% retention on <u>all</u> payments until successful completion of the contract. The progress payment schedule already contains a high "retention" in the 20 percent payment milestone for car acceptance (it is recommended this be reduced to no more than 10 percent) and includes a performance bond requirement to completion of contract. Retentions of payments are only included in a contract where risk of contractor failure to complete the work are present. As the performance bond (and contract default clauses) protect the Commission, these retentions should be deleted.	Deletion of an additional cost (for financing the retention amount) which is not required due to the progress payment delays in payment and the performance bond guarantees.	28. Disagree.
29	CP-70	CP10.1	<u>Progress Payment Schedule</u>. Recommend the payment milestone N be increased to 20% and the milestone O be decreased to 10%. The current 20% milestone for car acceptance is higher than most contract schedules.	Reduce retention to a level commensurate with industry standard and the work yet to be done under the contract at that milestone.	29. Disagree.

CARBUILDER/SUPPLIER Knorr Brake Corporation.

SECTION TITLE Audit and Inspection Records.

SECTION NUMBER CP11.0

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
30	CP-78	CP11.0	Audit and Inspection of Records. The subsections pertaining to required records, access to records, cost and pricing data, and audit and inspections of records, are normally not applicable to a fixed price contract and are only applicable to a cost plus contract and/or to changes to a fixed price contract. In most cases these provisions only apply to changes to the contract in excess of $100,000. Recommend modifying the title of this section CP11.0 to read "CP11.0 AUDIT AND INSPECTION OF RECORDS APPLICABLE TO CHANGES IN EXCESS OF $100,000", or including a similar exclusion in all subsections CP11.1 through CP11.4.	Limiting audit and record requirements to change orders as in a fixed price contract, the base price (in a competitive bid) is not normally subject to audit.	30. No, price adjustments are allowed and audit is required.

CARBUILDER/SUPPLIER: AMERICAN M.A.N. CORPORATION

SECTION TITLE: CONTRACT PROVISIONS

SECTION NUMBER:

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-8	CP 2.4.3.2	Vendor Financing This financing will not		1. See revised Volume II.
2	CP-3.3	CP 3.3	Domestic Content Add sentence: "Evaluation and prequalification will not be influenced in anyway by foreign nor domestic content ratios."		2. A minimum of 20% domestic content is required by revised Volume II.
3	CP-19	CP 4.1.2	100% Performance Bond Comment: In most international tenders the usual amount is 10-20% Performance Bond.		3. This may be true internationally but is not in the USA. Note: Performance bond to be released periodically. See revised Volume II.
4	CP-27	CP 5.4	Guarantees 5.4.1 Components A. Usual guarantee is 2 years. B. Usually one year. C. Usually one year.		4. Guarantee to remain as is.
5	CP-52	CP 7.3	Shipment Will LACTC accept delivery anytime of day or night? And will LACTC assist in obtaining permits for movement of vehicles with Los Angeles County?		5. - Delivery requires notice. - We will assist if possible, but the responsibility rests with the carbuilder.
6	CP-59	CP 8.11.2	Insurance Requirements Are these typical insurance coverages, what are the bases for these amounts?		6. The insurance coverages are as required by LACTC insurance consultants.

CARBUILDER/SUPPLIER: AMERICAN M.A.N. CORPORATION

SECTION TITLE: CONTRACT PROVISIONS

SECTION NUMBER:

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-1	CP 2.1.1 Second Para.	... execution of the work under consideration of the conditions of guarantee and the usual cases of force majeure.		1. No comment, discussion closed item.
2	CP-19	CP 4.1.2	The percentage of the Performance Bond should be adapted to an economically reasonable percentage.		2. Performance Bond to remain at 100% but will be released on a perioding basis. See revised Volume II.
3	CP-27	CP 5.4.1	a. The guarantee time should be limited, for example, to 66 months after delivery ex works or readiness for dispatch, for painting 30 months. b. The guarantee time should be limited to 30 months after delivery ex works or readiness for dispatch. c. O.K. d. Wearing parts should be excluded from the guarantee.		3. - a. and b. are covered adequately in the RFTP. - c. we will not expect consumable items such as wiper blades and brake shoes which wear out from normal operation to be replaced under the warranty unless a premature replacement is caused by a warranted failure, i.e. stuck brakes.
4	CP-59	CP 8.11	We are prepared to conform to the actual insurance conditions in the U.S.A.		4. Good.
5		General	The time limits in your draft for notifications, answers, drawings, reviews, corrections, etc. should be adapted with due consideration of the individual aspects of the situation existing between LACTC and the contractor.		5. Time duration to remain as stated in RFTP.

CARBUILDER/SUPPLIER : MITSUI & CO. (U.S.A.), INC.

SECTION TITLE : Requirements

SECTION NUMBER :

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
A.	CP-30	CP 5.5.1	A-1 We would like to know whether LACTC will operate the trains 24 hours a day. A-2 We would like to request to change last sentence as follows: "The engineer(s) shall be available to work any of eight (8) working hours."	A. CP-30 CP 5.5.	A-1 It should be assumed that operations could occur around the clock. A-2 No, the intent is that should LACTC require testing assistance, or observation, that an engineer(s) be available at any time.

CARBUILDER/SUPPLIER: MITSUI & CO. (U.S.A.), INC.

SECTION TITLE: Review Procedures

SECTION NUMBER:

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
B.	CP-31	CP 6.2.1	We would like to change the second sentence as follows: "The Bidder shall submit with his bid a plan and schedule for this procedure within ninety (90) days after date of notice to proceed."		B. No, we expect that the bid would have been based on a schedule, further, the requirements are known during the proposal stage. 30 days is reasonable.

CARBUILDER/SUPPLIER : MITSUI & CO. (U.S.A.), INC.

SECTION TITLE : Time and Scope of Submittals

SECTION NUMBER :

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
C.	CP-41	CP 6.5.1	In the first line, please read: "Within one hundred fifty (150) days" instead of "within ninety (90) days."		C. LACTC needs this information to begin to maintain the cars, 90 days is generous.

CARBUILDER/SUPPLIER: MITSUI & CO. (U.S.A.), INC.

SECTION TITLE: Requirements

SECTION NUMBER:

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
D.	CP-43	CP 6.6.1	D-1 We would like to know the calculation basis of 4 million car miles which is required for the products to have been as a permanent part of a transit rail or light rail car operated in scheduled service. D-2 We would like to reduce mileage to less than 4 million car miles since 4 million car miles is too much.		D-1 Assumed 50,000 miles, 40 car fleet, two years of operation. D-2 No.

CARBUILDER/SUPPLIER: MITSUI & CO. (U.S.A.), INC.

SECTION TITLE: Inspection of Comments

SECTION NUMBER:

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
E.	CP-47	CP 6.10.2	Please add following sentence after the last sentence: "and such inspection change shall be borne by LACTC."	E. CP-47 CP 6.10.2	E. Cost of LACTC inspection will be borne by LACTC. Cost of any changes shall be the responsibility of the contractor.

CARBUILDER/SUPPLIER: MITSUI & CO. (U.S.A.), INC.

SECTION TITLE: Notification of Work to begin or resume

SECTION NUMBER:

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
F.	CP-47	CP 6.10.4	We would like to add the following between the second and third sentence: "and the notice of such inspection shall be announced to the contractor two (2) weeks before."		F. Absolutely not, we intend to have full-time LACTC inspection on site as well as first article inspection to be scheduled by the contractor.

CARBUILDER/SUPPLIER : MITSUI & CO. (U.S.A.), INC.

SECTION TITLE : Hardware, Etc.

SECTION NUMBER :

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
G.	CP-50	CP 6.11.1	This paragraph is not applicable, please delete.		G. Paragraph is applicable and required.

CARBUILDER/SUPPLIER: MITSUI & CO. (U.S.A.), INC.

SECTION TITLE: Decorative Materials

SECTION NUMBER:

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
H.	CP-50	CP 6.11.2	The fourth line - we would like to request to delete "etc."		H. No.

CARBUILDER/SUPPLIER: The Ohio Brass Company.

SECTION TITLE: Scope of Work - Availability

SECTION NUMBER: 5.5.3

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-30	(1)	Availability We suggest rewording to,...."within forty-eight (48) hours, or as early as reasonably possible, of receipt ....." Comment also added after seventy-two (72) hours.	Contractor may require additional assistance from sub-supplier.	1. Requirement remains unchanged.

CARBUILDER/SUPPLIER: The Ohio Brass Company

SECTION TITLE: Control of Procurement - Title Blocks

SECTION NUMBER: 6.2.4

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-34	(1)	Title Blocks We would recommend that individual contractors and Sub-suppliers be allowed to use their standard format.	Detail may be lost or miscopied in drawing transfer.	1. Requirement remains, see Final RFTP Volume I Section 16.2.4.

CARBUILDER/SUPPLIER: Sumitomo Corporation of America

SECTION TITLE: Preapproval of LRVs

SECTION NUMBER: CP 2.4.2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-7	2nd para.	Please clarify the meaning of "substantially new vehicle design."	It is not clear the meaning of these words especially in comparison with the provisions of CP 5.2.6 (CP-24 & 25).	This is a car with any subsyste that does not meet the service-proven criteria defined in each section.

CARBUILDER/SUPPLIER: Sumitomo Corporation of America

SECTION TITLE: Technical Proposal Submittal Form

SECTION NUMBER: CP 3.4.1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-14	last para.	The words "third-party Contractor" in "INELIGIBLE CONTRACTORS" shall be changed to "Proposer."	From the context, "proposer" will be appropriate.	1. This is a list of ineligible contractors, "Debarred list."

CARBUILDER/SUPPLIER: Sumitomo Corporation of America

SECTION TITLE: Defects

SECTION NUMBER: CP 5.4.2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-28	----	Please solve the discrepancies between the provisions stated in CP 5.4.2 and CP 5.4.8.	In CP 5.4.2, all work necessary for the cars accepted shall be done by LACTC and/or SCRTD, but in CP 5.4.8 Contractor personnel shall be entitled to use LACTC facilities for warranty work, which means that Contractor can perform such work after the acceptance of a car. We feel it appropriate that, if such work shall be necessary, LACTC and Contractor shall agree upon who shall actually perform such work at that time.	1. See revised Volume II.

CARBUILDER/SUPPLIER: Sumitomo Corporation of America

SECTION TITLE: Repair and Replacement at Contractor's Expense

SECTION NUMBER: CP 5.4.4

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-28,29	----	The words "or within the period to be agreed upon" shall be inserted after the words "calendar days" in the 1st sentence of page CP-29.	In some cases, it may not be practical to return the repaired or replaced parts within thirty (30) days, depending upon the work to be necessary for such repair or replace.	1. We don't agree.

CARBUILDER/SUPPLIER: Sumitomo Corporation of America

SECTION TITLE: Initial Submittal

SECTION NUMBER: CP 5.6.1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-30	-----	Please state when the Notice to Proceed will be issued.	It is not clear in the Contract Documents when the Notice to Proceed be issued.	1. A schedule will be added. Date of Contract award December 2, 1986. See revised Volume II.

CARBUILDER/SUPPLIER: Sumitomo Corporation of America

SECTION TITLE: Passing of Title and Risk of Loss

SECTION NUMBER: CP 8.10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-59	-----	The word "materials" shall be changed to "LRV."	The word "materials" is not defined, and we assume, from the context, the work "LRV" shall be appropriate.	1. Change "material" to "vehicles.'

CARBUILDER/SUPPLIER: Sumitomo Corporation of America

SECTION TITLE: Insurance Requirements

SECTION NUMBER: CP 8.11.2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-60	b.	The 9th line through 11th of the 1st paragraph of b. shall be amended to read: "Contractor because of bodily injury or property damage arising out of all work and operations under or in connection with this Contract."	CGL insurance shall, in itself, cover "all obligations assumed by the Contractor under this contract."	1. No change.
2	CP-60	b.	The limits of "$10,000,000" stated in this paragraph shall be changed to "At least $5,000,000."	Taking into account of recent trend of CGL insurance and the size of this project, "at least $5,000,000" would be appropriate.	2. $10,000,000 to remain as is.
3	CP-60	b.	The words "five years" in the 2nd line of this paragraph shall be changed to "two years."	Taking into account of recent trend of CGL insurance, "two years" would be appropriate.	3. If an overlap exists between contractor and SCRTD, then LACTC will change requirement, otherwise, no change.
4	CP-60	d.	Paragraph d. shall be deleted in its entirety, and in lieu of such deletion, the following sentence shall be added as the 2nd sentence of Section 8.11.1 in page CP-59: "Such insurance coverage, except for worker's compensation, include the Commission and its general engineering and architectural consultants as additional insureds with respect to all operations and work under or in connection with this contract."	Paragraph d. does not properly define the Contractors Protective Liability Insurance.	4. No overlap exists at this point.
5	CP-60	e.	New paragraph e. shall be added as follows: "e. Umbrella Liability policies may cover any portion of limits required under paragraph b. and c. above."	To make it clear the Umbrella insurance normally used in such insurance satisfies the requirements.	

CARBUILDER/SUPPLIER: Sumitomo Corporation of America

SECTION TITLE: Contractor is Independent Contractor

SECTION NUMBER: CP 9.1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-61	-----	The "Section 3.10" referred to in this Section shall be "Section 10.0."	Mistake in reference.	1. Agree.

CARBUILDER/SUPPLIER: Sumitomo Corporation of America

SECTION TITLE: Indemnity and Hold Harmless

SECTION NUMBER: CP 9.2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-61	-----	From 6th line of this Section shall be amended to read: "With any action, suit or claim because of bodily injury or property damage resulting from directly from the Contractor's acts or omissions relating to this Contract."	Contractor's obligation to indemnify and hold harmless the Commission shall be limited to those as mentioned in our comment.	1. Should "indirectly" be removed from this clause?

CARBUILDER/SUPPLIER: Sumitomo Corporation of America

SECTION TITLE: Delivery and Acceptance Schedule

SECTION NUMBER: CP 9.4

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-63,63	3rd para.	The words "at the Contractor's option" shall be inserted between the word "may and "be" in the 3rd line of Page CP-63.	To make it clear that the deduction of the delivery rate shall be the Contractor's option.	1. No, but paragraph is now understood, LACTC option not contractors. See revised Volume II.
2	CP-63	last para.	The words "the said item is accepted by LACTC" shall be changed to the "the said item is delivered to LACTC."	There is a discrepancy between the provisions of CP 8.10 and CP 9.4.	2. Will remain at acceptance. S revised Volume II.

CARBUILDER/SUPPLIER: Sumitomo Corporation of America

SECTION TITLE: Terms of Payment

SECTION NUMBER: CP 10.1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-68	k)	Please clarify the method of reimbursement for optional cars and optional spares, especially the time when the Earned Value Category A through H be paid.	The provisions of k) are not clear enough.	1. See revised Volume II.

CARBUILDER/SUPPLIER : TRANSIT AMERICA INC.

SECTION TITLE : CONTRACT PROVISIONS

SECTION NUMBER : DEF-2 THRU CP 6.7.1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	Def-2	CP 1.1	The definition of "Bid Guarantee" is unclear. Is the "Bid Bond" (Ref. C.P. 2.5.2.) equivalent to the "Bid Guarantee"? Will the LACTC accept other forms of Guarantee?	Specification clarification	1. A Bid Bond section will be added, see revised Volume II.
2	Def-5	CP 1.1	The definition of "Safe" is too susceptible to individual perception and interpretation. TA requests a change to delete "...threat or danger...".	Specification clarification	2. We disagree.
3	CP-8	CP 2.5.2	Amount of Bid Bond is lacking. In addition, will the LACTC provide a Bond form?	Specification clarification	3. Agree. See comment No. 1. - Yes.
4	CP-8	CP 2.5.3.2	In the February 1985 "Vehicle General Description Document" paragraph 1.1, page 1, a preliminary of this 'proposal' was presented. The Specification does not define vendor financing proposal requirements. Are we to assume, pending the provision of of the "minimum standards", that the February presentation is to be used as general guidlines?	Specification clarification	4. See letter dated 12-19-85 from LACTC. See revised Volume II.
5	CP-11	CP 3.3	Will the measurement of "Domestic Content" be the "Buy America" criteria, weight, dollar value and/or some other unit of measurement?	Specification clarification	5. Definition will be real value of material and labor. U.S.A. assembly of foreign materials and parts in U.S. is not 100% content. See revised Volume II for a minimum of 20% domestic content requirement.
6	CP-26	CP 5.3.2	TA requests a change in the last sentence of this of this paragraph deleting "...a Contract Amendment." and inserting "...a Change Order." Please note that the term "Contract Amendment" does not appear in either CP 1.1 or in CP 6.7.1. We draw attention to this to support our request to avoid confusion.	Elimination of administrative confusion through the utilization of a standard set of change documents.	6. See revised Volume II.
7	CP-27	CP 5.3.3	TA requests that the LACTC specify in advance the criteria to determine the adequacy of pricing data.	Specification clarification and advance resolution of potential disputes.	7. See revised Volume II.
8	CP-29	CP 5.4.4	TA requests that work done under this section by the LACTC or SCRTD should recognize the same requirement of CP 5.4.2 which stipulates "Contractor's prior concurrence". This can be accomplished through the deletion of the period (.) in the first sentence and the insertion of "...with the Contractor's prior concurrence.	Standardized administrative communications.	8. See revised Volume II.
9	CP-45	CP 6.7.1	TA requests clarification as to the difference between b) Contract and e) Contract Provisions.	Specification clarification	9. There are none.
10	CP-45	CP 6.7.1	In the event that the LACTC declines TA's request (Item 6) concerning CP 5.3.2 (deletion of Contract Amendment), in what order or precedent will a Contract Amendment be positioned?	Specification clarification	10. See revised Volume II.

CARBUILDER/SUPPLIER: TRANSIT AMERICA INC.

SECTION TITLE: CONTRACT PROVISIONS

SECTION NUMBER: CP 6.8 THRU CP 9.4

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
11	CP-45	CP 6.8	Third paragraph, delete the period (.) and add "...using cost plus a fixed fee or a percentage of cost as compensation for the Change Order and to establish that such work has been performed. If compensation for a Change Order is a negotiated lump sum, this Section 6.8 shall not apply."	If the Change Order compensation is negotiated, there need be no requirement for record retention, maintenance or access.	11. We don't agree.
12	CP-57	CP 8.1	TA requests clarification of the last paragraph of this provision. Does the phrase "...venue of courts of the State of..." include Federal Courts in the State of California?	Specification clarification	12. No.
13	CP-59	CP 8.11	TA requests consideration of a minimum dollar value for subcontractors required to adhere to this section which would exempt small suppliers from compliance.	Clause may be impossible for small suppliers to meet.	13. No minimum included.
14	CP-60	CP 8.11.2b	TA cannot guarantee the availability of Products Liability/completed operations coverage for a period of 5 years after the completion of the Contract.	Review of limits requested due to insurance market.	14. This is a contract requirement.
15	CP-60	CP 8.11.2d	Due to the present insurance market, Contractor's Protective Liability Insurance will be difficult, if not impossible, to secure. TA requests consideration of alternative types of insurance coverage.	Allow alternative coverage.	15. TA make a specific proposal.
16	CP-61	CP 9.2	TA requests the deletion of the word "indirectly" from clause. TA can comfortably accept liability for claims resulting "directly" from the Contractor's act or omissions (third from last line). We cannot, however, accept "resulting <u>indirectly</u>" unless we know how broad this term is intended to be. Please provide examples of "indirect results" which, in your view, do impose liability and other examples which would not impose liability.	Clearly defining the intended scope of liability.	16. This is a standard indemnification clause.
17	CP-62	CP 9.3	Does the term "...in CP 9.4 for any delivery..." (third paragraph, third from last line) mean that liquidated damages will be assessed if the first car is delivered after November, 1988 or the thirty-second car after July 1989 even though the last car is delivered on time?	Specification clarification	17. It is cumulative based on dates and delivery rates. Each car stands or meets its own schedule.
18	CP-63	CP 9.4	The last sentence of this clause is in direct conflict with paragarph 8.10 concerning risk of loss. TA requests deletion of this sentence in favor of 8.10.	Specification clarification	18. Conflict exists, risk transfers at acceptance.

CARBUILDER/SUPPLIER : TRANSIT AMERICA INC

SECTION TITLE : CONTRACT PROVISIONS

SECTION NUMBER : CP 9.4 THRU CP 12.2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
19	CP-63	CP 9.4	The last sentence in the third paragraph, "Liquidated... met." should be separated from the body of this paragraph and stand alone.	Correction to editing	19. OK.
20	CP-63	CP 9.4	TA requests the addition of a sentence to the fourth paragraph. "In the event that either the Contractor supplies bonded storage, or ship the material to a specified delivery location, any and all liquidated damages will cease to be computed on the date of delivery to storage of said items."	Delivery into storage, directed by the LACTC, is equal to delivery as defined in 9.4.	20. At acceptance, which would be thirty (30) days after delivery, by default.
21	CP-71	CP 10.2	TA requests the following change in the last paragraph: insert "such" before "person", delete the period (.) and add "...except for willful or tortious or the sole negligence of LACTC or any member, agent or employee thereof which is or might be the subject of any suit under CP 9.2."	Protective language addition.	21. See revised Volume II.
22	CP-79	CP 12.2	TA inquires as to whether TA's DBE plan as submitted to UMTA is acceptance to the LACTC.	Approval of developed and proven successful plan.	22. Format will be provided by LACTC but DBE subcontractors must be certified by LACTC.

K5-11260

CARBUILDER/SUPPLIER: UTDC (USA) INC.

SECTION TITLE: Title Page

SECTION NUMBER: Title Above Table of Contents

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1.	Title Page	-	Is volume II "Terms and Conditions" or "Contract Provisions"?		1. Contract provisions, etc. are semantics. See revised Volume II.

K5-11260

CARBUILDER/SUPPLIER: UTDC (USA) INC.

SECTION TITLE: Definitions

SECTION NUMBER: CP 1.1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
2.	-	Engineer	The current definition of Engineer fails to mention a relationship with the Contract. We suggest the following: "Engineer" means the Engineer designated as such in *CP ? , or other the Engineer appointed from time to time by LACTC and notified in writing to the Contractor to act as Engineer for the purposes of technical matters of the Contract. also *We suggest also that a Contract Provision determine the Engineers role, duties and responsibilities under the Contract.	Under normal industry standards it is usual for both the purpose of issuing and receiving instructions, notices and the like. The current provisions provide for "Contract Administration" and "Engineer". LACTC would reduce the possibility of conflict, contradictions and disputes considerably if they adopted the single point contact. Also, by drafting the duties, responsibilities and authority vested in such person will drastically reduce risks of exposure, claims and work stoppages due to lack of defined authority.	2. See revised Volume II.

K5-11260

CARBUILDER/SUPPLIER: UTDC (USA) INC.

SECTION TITLE: Definitions

SECTION NUMBER: CP 1.1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
3.	CP 1.1	-	Failure - definition includes the word "may". Will there be a further definition for "Chargeable Failure or Defect" on which to base MTBF?	For example ------- A broken windshield is an improper condition but is not necessarily chargeable to the contractor	3. remove may
4.	CP 1.1	-	Load Weighing, second sentence - add "and braking" between "tractive" and "effort".	Load weighing also controls braking effort.	4. Tractive effort is both braking and propulsion.
5.	CP 1.1	-	Speed, Schedule, does averae speed take account of traffic stops as well station stops?	The duty cycle should consider traffic stops to ensure that schedule time is realistic.	5. Yes, the average speed should be considered including traffic and train signals.
6.	CP 1.1	-	Technical Provisions VOLUME I not II		6. Agreed.

K5-11260

CARBUILDER/SUPPLIER: UTDC (USA) INC.

SECTION TITLE: Technical Proposal

SECTION NUMBER: CP 2.3.3

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
7.	CP-4	6	The Proposer is placed into a high risk situation whereby the proprietary elements of its proposal are not secured against disclosure to third parties. We suggest therefore, that the 4th paragraph on page CP-4 be changed as follows: Delete all after the 2nd sentence and substitute with: "LACTC will, within the limits of California law, protect the Proposer's identified proprietary elements of its proposal against disclosure to unauthorized persons."	The clear understanding between LACTC and each of its Proposers will determine the quality of proposal material submitted to LACTC for clearer and productive evaluations and will also cut-down time consuming question periods between LACTC and its proposers and, will also serve to generate in a more detailed nature records for future reference. Most of all, the commitment to security by LACTC will generate a feeling of trust between the successful Contractor and LACTC.	7. LACTC will use best efforts to protect propriety information but can assume no liability.

K5-11260

CARBUILDER/SUPPLIER: UTDC (USA) INC.

SECTION TITLE: Award of Contract

SECTION NUMBER: CP 4.1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
8.	CP-19	(a)	This provision fails to mention the amount and terms of the bid deposit (bond or check). We propose that the RFP allows the Proposer to submit a bid deposit in the maximum amount that is required to re-contract only and that the form of the deposit be either a bond or check at the option of the Proposer. The expected terms of the bid deposit should be provided in the RFP and in the event that the Proposer provides a check such amount should be placed into an interest bearing account to the benefit of the Proposer but available to LACTC in the event of default by the Proposer.	This provision will help to reduce costs and clearly establish the realistic value, nature and conditions associated with such deposit thereby reducing any disputes which could or may affect the timing of subsequent contract award by LACTC.	8. Correct, Bid Bond will be 10% of bid amount.

K5-11260

CARBUILDER/SUPPLIER: UTDC (USA) INC.

SECTION TITLE: 100% Performance Bond

SECTION NUMBER: CP 4.1.2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
9.	CP-19	1	We propose that the value of such bonding is reduced to 50% of the value of the Contract during the term of the Contract and further reduced to 5% during the warranty period.	This provision will help to reduce costs and clearly establish the realistic value, nature and conditions associated with such bonding. The objective being to ensure that the most effective form of bond (given the circumstances of the project) could be obtained at the least cost with coverage acceptable by LACTC.	9. We will define when and if the Performance Bond is to be released. See revised Volume II.

K5-11260

CARBUILDER/SUPPLIER: UTDC (USA) INC.

SECTION TITLE: Pre-award Survey

SECTION NUMBER: CP 4.4

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
10.	CP-20	All	It is our opinion that the industry is experiencing higher than expected bid prices as the result of major procurement practises which result in excessive Proposal overheads. This provision contributes to such high bid prices by expecting Proposers to carry-out the complete proposal process when in fact by altering the procurement evaluation timing criteria can successfully reduce such Proposal overheads. We suggest therefore, that the pre-award survey as required in this provision takes place either before or shortly after the first step bid process (technical submission) and which will in effect form part of the pre-qualification requirements.	The benefits of re-timing the pre- award survey should reduce overheads and subsequent bid prices.	10. O.K.

K5-11260

CARBUILDER/SUPPLIER: UTDC (USA) INC.

SECTION TITLE: Failure to Execute Contract

SECTION NUMBER: CP 4.6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
11.	CP-21	1	Should the successful Bidder fail to execute the Contract for reasons beyond its control then the provisions herein shall penalize the Bidder unjustly. We suggest that a more sensible and reasonable approach would be to insert the underlined wording as follows: "Should the successful Bidder, <u>without just cause or reason</u>, fail to execute the Contract and furnish the surety within the time stipulated <u>or any reasonably requested extension of such time</u>, the LACTC may, at its option <u>following adequate notice to the Bidder allowing the Bidder reasonable time to respond</u>, determine .... null and void.	Such a suitable grace period (if required) will allow for any hidden problems to be disposed of and may even be useful as a contingency to the benefit of LACTC, and could eliminate the possibility of embarrassing decisions that may be hastily made.	11. We understand UTDC position but feel its not in LACTC's best interest. To remain as stated in revised Volume II.

K5-11260

CARBUILDER/SUPPLIER: UTDC (USA) INC.

SECTION TITLE: Defects

SECTION NUMBER: CP 5.4.2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
12.	CP-28	1	This provision, requires that the LACTC or SCRTD carries out warranty related work, the nature of which may impinge upon Contractor guarantees with respect to non-defected work and replacement guarantees (and costs) with respect to defected work. We suggest that the Contractor be given the opportunity to rectify defective work under the guarantee provisions, utilizing its experienced personnel and procedures and at costs which are allocable and manageable within the contractor's control. Notwithstanding the foregoing, in any event, LACTC should, within its RFP, provide the Bidder with rates associated with such work (in the event that the Contractor desires to use LACTC/SCRTD for warranty related work) together with sub-system/component estimated replacement hours.	The benefits of adopting such reasonable approaches would be reduced risk taking contingencies (resulting in lower bid pricing); elimination of warranty related disputes and a flexible attitude to suit each individual defect action.	12. See revised Volume II.

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CARBUILDER/SUPPLIER: UTDC (USA) INC.

SECTION TITLE: Repair and Replacement at Contractors Expense

SECTION NUMBER: CP 5.4.4

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
13.	CP-28/ 29	1	This provision includes statements that the LACTC/SCRTD shall carry-out retrofit or modification work without first consulting the Contractor and it further includes contradiction terms with CP 5.4.2 wherein it states that the LACTC/SCRTD shall only perform work subsequent to acceptance. We suggest that any retrofit or modification be identified, discussed and agreed between the parties and that the Contractor will decide who should carry-out the retrofit or modification work considering time, costs and guarantee provisions.	Our suggestions should reduce contingency pricing, lower Bid prices, mitigate warranty related problems and allow flexibility to be incorporated for expeditious action.	13. It is understood that all retrofit or modifications are initiated and approved by the contractor. Further, LACTC would negotiate costs and prices where required. The Commission has no intention of altering the car or its design until all cars are out of warranty, if then.

K5-11260

CARBUILDER/SUPPLIER: UTDC (USA) INC.

SECTION TITLE: LACTC Owned Spare Parts

SECTION NUMBER: CP 5.4.7

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
14.	CP-29	1	Whilst we understand LACTC desiring not to use LACTC - owned parts during the warranty period we suggest that flexibility for emergency situations be allowed.	The benefits of allowing the Contractor to utilize, in an emergency situation, LACTC - owned parts are uninterrupted operations, turn-around of spare parts, reduced shelf maintenance and identification/confirmation of quality batching or component failure criterion.	14. The contractor must provide his own warranty parts.

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CARBUILDER/SUPPLIER: UTDC (USA) INC.

SECTION TITLE: Review Procedures

SECTION NUMBER: CP 6.2.1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
15.	CP-31	Final Paragraph	It is the normal responsibility of a Contractor, and within industrial standards, to protect against the wrongful disclosure of its proprietary information to third parties and in retrospect, unreasonable for an operating agency to assume custodianship and distributership of such proprietary information without just cause or reason. In this respect, and considering the intent of LACTC requirements, we suggest that this provision be operable only in the event that the Contractor materially defaults or refuses to carry-out the general intent of the Contract as proven by arbitration or other competant court of jurisdiction.	An amended provision, should result in reduced built-in contingencies and bid pricing together with an amicable approach in respect to property ownership and respected rights under contract. Rights to data should obviously pass to LACTC following accepted completion of the Contract and LACTC should be given the rights to use the data to operate and maintain the vehicles.	15. Full disclosure is required by State law.

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CARBUILDER/SUPPLIER: UTDC (USA) INC.

SECTION TITLE: Circuit Diagrams

SECTION NUMBER: CP 6.2.12

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
16.	CP-36	1	It is our opinion, that in order to set-up a maintenance and repair facility to completely service (what we term as third level maintenance tasks) each and every minor component including printed circuit boards is a very costly capital procurement procedure.	We suggest that the operating company best interests are served if the maintenance and repair facility is designed around cost effective measures. These measures, by current industry practices, include for second level maintenance which does not include the costly and time consuming affair of handling minor component repairs when manufacturers, experienced in the design and production of such minor components can best provide both cost effective replacements and repairs in a timely manner. Also, the production of manuals (in such 3rd level detail) for the vehicles, detailed instructional techniques etc., will normally add to the cost of procuring the vehicles. A reasonable and agreeable after sales service contract, executed at the same time that this procurement is entered into will ensure support to LACTC.	16. This describes SCRTD intention. - We disagree.

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CARBUILDER/SUPPLIER: UTDC (USA) INC.

SECTION TITLE: Drawing Submittals and Returns

SECTION NUMBER: CP 6.3.3

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
17.	CP-37	1	The statement, "At a maximum, the time ..... shall not be impacted in excess of the total number of drawing "late" days", suggests that there is no other condition or occurrence which may impact the shipment of deliverables or implies, that the Contractor will not be allowed an extension of time to complete the Works under any event except the granting of drawing "late" days. We suggest that this sentence is replaced with the following: "The Contractor shall be allowed an extension of time to complete the Works in the event that LACTC fails to approve or disapprove the Contractor's drawings within the time allowed herein for such approval response period. Such extension of time shall be on a pro-rata basis equal to the total number of drawing "late" days.	This amended provision should clear any ambiguity or misunderstandings that may arise during the execution of the Contract.	17. See revised Volume II. See revised Volume I.

K5-11260

CARBUILDER/SUPPLIER: UTDC (USA) INC.

SECTION TITLE: Errors and Omissions in Technical Provisions

SECTION NUMBER: CP 6.7.2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
18.	CP-45	All	Pursuant to reasonable contracting practices, we propose that both the Customer (LACTC) and the Contractor takes no advantage of any apparent errors or omissions in the Technical Provisions. Also, the term "Contracting Officer" is not a defined term of these provisions. We suggest that the term "Engineer" replaces the latter. It is strongly recommended also that the party discovering such errors or omissions immediately notifies the other party.	By amending this provision as suggested, the reasonableness of the parties should prevail to the benefit of the parties.	18. Agree. - agree, will be defined, see revised Volume II

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CARBUILDER/SUPPLIER: UTDC (USA) INC.

SECTION TITLE: Liability Not Released

SECTION NUMBER: CP 6.9.3

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
19.	CP-46	New	In the interest of good commercial practices, we propose that the following new paragraph be added: "In the event that LACTC assigns a part or the whole of this Contract to any other person or entity LACTC shall not be released of its liabilities hereunder. The assignment if any, as aforesaid, shall not affect any provision of this Contract."	This additional provision should help to develop a more meaning relationship of mutual trust between the Parties.	19. No, we want to deal with only one entity.

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CARBUILDER/SUPPLIER: UTDC (USA) INC.

SECTION TITLE: Duties of Inspectors

SECTION NUMBER: CP 6.10.7

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
20.	CP-48	1	We suggest that the following is inserted within this provision: "Should resolvement of such suspended work reveal that the work suspended was in fact performed to fulfill the requirements of the RFTP and the Contract and, as a result of such suspension, the Contractor was delayed in the progress of the Works, then LACTC shall grant the Contractor an extension of time to complete the works commensurate with the amount of delay so occasioned by such suspension."	This insertion to the provisions should eliminate time wasting and costly dispute situations during execution of the Contract.	20. This is a reasonable complaint, if inspector is wrong, subject to negotiation under excusable delays.

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CARBUILDER/SUPPLIER: UTDC (USA) INC.

SECTION TITLE: Changes in Regulations

SECTION NUMBER: CP 5.3.5

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
21.	CP-27	New	In the event that any statutory regulations or code is changed by the authorities governing such regulations or codes during the execution of the Contract, we propose the following new provision is added to the Contract terms: "If there is any change in any regulation or code which has the force of law and which is made after the date of the Contract and if such change affects the cost or time of performing the Work, LACTC shall issue to the Contractor a Change Order to reflect the Change necessitated thereby."	This Provision should reduce the risk of lengthy and time wasting disputes during execution of the Contract.	21. This is understood to be reasonable and would be subject to negotiation under excusable delays.

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CARBUILDER/SUPPLIER: UTDC (USA) INC.

SECTION TITLE: Terms of Payment

SECTION NUMBER: CP 10.1

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
22.	CP-68	1)	There is no provision for the occurrence of late payments to the Contractor. In accordance with good industry practices, we suggest the following is added to the Terms of Payment section: "If there is any dispute over the amount of any invoice or of any item included therein, LACTC shall not withhold payment of any undisputed amount. The Parties shall seek to resolve the dispute and upon resolution thereof, the amount then agreed to be due, if any, shall be included in the next monthly invoice. Any amounts not paid by LACTC on the due date shall be subject to an administration fee, accruing from the date payment was due until date of actual payment, at a rate equal from time to time to the rate of interest charged by _____ Bank to its most credit-worthy customers on loans made in U.S. funds."	The introduction of such a provision should establish an understanding (including a maximum cost limit to LACTC) between the Parties thereby reducing the risk of disputes and excessive late payment claims.	22. This is fair and LACTC would not hold an invoice totally unless absolutely necessary. This clause will not be incorporated.

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CARBUILDER/SUPPLIER: UTDC (USA) INC.

SECTION TITLE: Termination by the Contractor

SECTION NUMBER: CP 9.15

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
23.	CP-67	New	In the event that a partial termination of the Contract renders the remaining part impossible to complete by the Contractor, it is suggested that the following applies: "If the Work is terminated in substantial part as provided in CP 9.13 or CP 9.14 hereof, and as a result of such termination the Contractor is rendered unable to perform or continue the performance of any portion of the Work not so terminated, the Contractor may terminate the whole or any part of such Work not terminated by written notice to LACTC given not later than 60 days following the receipt by the Contractor of a Notice of Termination given pursuant to CP 9.13 or CP 9.14 hereof. The termination of any portion of the Work by the Contractor pursuant to this CP 9.15 shall, for all purposes of the Contract be deemed to be a Notice of Termination with respect to such Work given by LACTC to the Contractor pursuant to CP 9.14 hereof and the provisions of CP 9.14 hereof, shall be applicable in respect of such termination."	The application of this added provision should give LACTC the opportunity to review the total contract situation i.e., the LACTC terminated portion of the Work together with the portion of the Work not so terminated, in the event that the portion not so terminated is frustrated and causes delays and further disputes between the Parties.	23. No.

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CARBUILDER/SUPPLIER: UTDC (USA) INC.

SECTION TITLE: Limitation of Liability

SECTION NUMBER: New

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
24.	-	-	In meeting with reasonable and acceptable commercial practices, we suggest that the following new provision is added: "Except as expressly set forth in the Contract, the Contractor shall not be liable for any direct, indirect, consequential or special damages of any kind relating to the Work, and notwithstanding anything to the contrary contained in the Contract, the aggregate liability of the Contractor, for all damages, liquidated or otherwise, arising in connection with the Work and/or termination of the Work, in whole or in part, for any reason, shall not exceed the total Contract price."	This limitation of liability should ensure that LACTC is afforded reasonable pricing for the goods and services and yet still retain its indemnifications and other rights in the Contract and to a reasonable and acceptable level of Contract price limitation, thus allowing the Contractor to substantially demonstrate up-front that LACTC will be covered during execution of the Contract, with little risk of overexposure.	24. No.

CARBUILDER, SUPPLIER: LABCO

SECTION TITLE: Procurement Process

SECTION NUMBER: C P 2

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-11	2.5.1 PART 2	The specified requirement for life cycle cost analysis is very brief. Will the LACTC provide additional criteria for life cycle cost analysis or specific format?	Clarification.	1. Yes, see revised proposal criteria, Volume II.

CARBUILDER, SUPPLIER: WABCO

SECTION TITLE: Scope of Work

SECTION NUMBER: C.P. 5

ITEM	PAGE	PARA.	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-26	5.3.1.2	It is suggested this provision be revised to incorporate language as used in the Federal Procurement Regulations as relates to change orders.	The existing language is very rigid and will inevitably lead to disputes. The FPR change clause is equitable, but more importantly very practical.	1. The clause as written follows the FPR. In any case, this is what the commission requires.
2	CP-28	5.4.3	The failure rate of 25% should be specifically stated as "like kind" failures.	Clarification.	2. We disagree, though it would probably be a repetitive failure that would cause this problem.
3	CP-24 CP-25	2.5.6	Please confirm that a subsystem may be based on a composite of several service proven designs, specifically arranged to meet the LACTC technical requirements, including product improvements related to increased reliability, maintainability and weight savings.	Clarification.	3. In general, this is correct; however, there are restrictions. We expect that all valves and brake hardware were used together in a system before.

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CARBUILDER/SUPPLIER: WABCO

SECTION TITLE: Control of Procurement

SECTION NUMBER: C.P. 6

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-36	6.2.10	While all technical information, including detail parts drawings, material specifications and process specifications should be available for review, detailed manufacturing information should not be submitted.	The procurement covers equipment, not the design rights which by their virtue are proprietary in nature.	1. By state law we are required to and are insisting on no proprietary rights for the contractor/subcontractor.

CARBUILDER, SUPPLIER: WABCO

SECTION TITLE: Control of Materials

SECTION NUMBER: C P. 7

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-56	7.11.2	While the subject provision may apply to the cars, this clause should not be applicable to subsystems. See WABD's comments CP 6.2.10.	Clarification.	1. We disagree, see previous comments on proprietary rights.

CARBUILDER/SUPPLIER: WABCO

SECTION TITLE: Prosecution and Progress

SECTION NUMBER: C P. 9

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	C-61	9.2	It is suggested the word "the" in the second line of this paragraph be changed to "its".	Clarification.	1. No.
2	C-62	9.4	Please clarify the delivery dates listed. Do these dates mean the beginning or the end of the specified month?	Clarification.	2. Delivery dates have been modified to day, month, and year. See revised Volume II
3	C-63	9.4	The last sentence of this article indicates that risk of loss is borne by the supplier until "accepted by LACTC". This is in conflict with Article CP 8.10. This paragraph should be revised to agree with CP 8.10.	Clarification.	3. Conflict exists, will be changed to be on acceptance in both sections.

CARBUILDER, SUPPLIER : WABCO

SECTION TITLE : Measure and Payment

SECTION NUMBER : C P 10

ITEM #	PAGE #	PARA. #	COMMENT	REASON & BENEFIT TO LACTC	LACTC RESPONSE
1	CP-70	10.2	It is suggested the second paragraph be revised to allow for claims surviving final payment if mutually agreed by both parties.	Practicality.	1. Paragraph to stand as written on advise of LACTC legal consultant.
2	CP-71	10.3	The second paragraph of this article states, "This Section shall be the sole and exclusive measure of adjustments in compensation....." While this statement may be true relative to adjustment due to labor and material costs, it should not apply to change orders, stop work orders, etc.	Clarification.	2. This applies only to the section Economic Price Adjustment.
3	CP-72	10.3.2	Escalation should be extended for any delay not caused by the Contractor. Please revise this section accordingly.	Clarification.	3. This is correct, however the schedule would be modified as detailed in the "Changes" and "Excusable Delays" sections assuming LACTC agrees that the delay is not caused by the contractor. However, the only adjustment to cost for excusable delays is for escalation only.