MEETING DATE:September 21, 2005

SUBJECT: Procurement Authorization – Design & Supply Of Clrv Propulsion Control Systems As Part Of The Clrv Life Extension Program

RECOMMENDATION

It is recommended that the Commission authorize the award of a contract to Siemens Canada Limited for the design and supply of 102 propulsion control system units over a 5 year period commencing in 2005 in the upset limit amount of $29,650,000 subject to confirmation of receiving financing approval from the City of Toronto Council.

FUNDING

Sufficient funds for these expenditures are included in Project 4.15, Streetcar Overhaul, under Life Extension Program (LEP) of Canadian Light Rail Vehicles, pages 1035 to 1040 in the 2005 – 2009 Capital Program under the category of "State of Good Repair" as approved by City Council on February 23, 2005. At its August 31, 2005 meeting, the Commission approved the Commission Report entitled "Request For City Council Funding Approval – CLRV Life Extension Program Contract Commitments" to request the City of Toronto Council to approve funding commitment for major equipment purchases, which include the propulsion control system, for the CLRV LEP. This is anticipated to be received in September 2005.

BACKGROUND

The capital project to extend the life of the 196 Canadian Light Rail Vehicles (CLRVs) by 10 to 15 years was initially established in the 1999-2003 Capital Program budget. One of the key objectives was to improve on vehicle availability and reduce service delays.

The propulsion control system, which modulates motoring and braking efforts in accordance with passenger load and the operator's pedal controller input, has become highly unreliable and difficult to maintain due to parts obsolescence. The replacement of the propulsion control system with a modern system was considered a critical system upgrade for the life extension program. The new system would also include event logging and diagnostic capabilities for trouble-shooting and reliability trend investigation, as well as up-to-date componentry that would support maintenance efforts more readily. The new control system also provides trainline control functions for multiple unit operation, which provides flexibility for coupled operation to enhance streetcar operation and reduce mixed-traffic congestion due to "bunching up" of streetcars.

On January 21, 2004 a Request for Interest and Pre-Qualification Notice was issued to 7 potential vendors in addition to an advertisement on the Commission's website. The Pre-Qualification call resulted in 5 companies being identified as having the ability to meet the commercial requirements and technical capabilities to design, manufacture and supply a propulsion control system to meet the Commission's specification requirements.

On August 26, 2004 a Request for Proposals (RFP) was issued to all 5 pre-qualified companies for the design and supply of a propulsion control system for the CLRVs, out of which the following 4 companies submitted Proposals on March 17, 2005 as summarized on Appendix 'A' (i.e. Siemens Canada Limited, Bombardier Inc., Vossloh Kiepe GmbH, and Brush Traction).

The RFP required the delivery of 2 prototype units in 2006, which are to undergo in-service testing and evaluation by

TTC for a period of up to one-year. The notice to proceed for the supply of the production units would be issued once the performance of the prototypes is deemed successful during the testing period.

The RFP contained pricing options for 196, 169, 144, and 100 propulsion units as the Commission had not finalized its requirements for the number of CLRVs to be refurbished prior to the issuance of the RFP. The RFP also requested pricing for optional equipment, maintenance parts, tools, and spare propulsion units. At its meeting of June 22, 2005 the Commission received a presentation and a report entitled "Future Streetcar Fleet Requirements and Plans" and approved the rebuilding of 100 CLRV streetcars "to ensure that the TTC's near-term streetcar service requirements are met". The Commission directed that only 100 of the 196 CLRVs undergo the life-extension program, and that the remaining 96 vehicles be replaced with new accessible low floor light rail vehicles. Therefore staff's analysis of the proposals was based on the supply of 100 propulsion units.

The lowest priced bid was submitted by Siemens Canada Limited (Siemens), and they stated one qualification regarding contract changes. However, as the RFP allowed staff to negotiate terms and conditions, Siemens was contacted and agreed to a contract change clause that is considered acceptable by staff. The RFP also allowed for adjustments to price based on changes in foreign exchange rates and Siemens, Brush Traction, and Bombardier Inc. each stated their price was subject to foreign exchange. Siemens stated no other exceptions or qualifications and their proposal was considered commercially acceptable.

The proposals from Bombardier Inc. and Brush Traction were considered technically acceptable, however they each stated a number of exceptions which are considered unacceptable. (e.g. capping liquidated damages to 10% of the contract value, whereas TTC's specified 50%, they took exception to the specified warranty terms, and in addition, neither company offered firm pricing). Vossloh Kiepe GmbH was commercially and technically not acceptable as they offered an alternate system and did not bid on TTC's specifications.

The pricing submitted by all of the proponents for the 2 prototype units was significantly higher compared to their pricing for the production units. Staff contacted the proponents, who indicated this is attributed to the upfront engineering work and non-recurring manufacturing costs required for this project, and

the fact that the RFP stated the approval for the production units was subject to future funding from the City of Toronto.

Although Siemens' proposal was commercially and technically acceptable, staff could not recommend awarding the contract to Siemens, as the expenditure for the 2 prototypes (approximately $8,784,000) would exceed the funds budgeted in 2005 and 2006.

Therefore, authorization was obtained from the Chief General Manager on July 28, 2005 to cancel the RFP and commence negotiations with Siemens (the lowest priced compliant proponent for the original RFP) in order to negotiate payment terms that would more evenly distribute the expenditures for the propulsion units over the term of the contract. In addition, staff would seek further clarification from Siemens regarding their technical proposal.

DISCUSSION

During the negotiations with Siemens, staff identified the need for 2 spare propulsion units, resulting in the original quantity of 100 being increased to 102 units. Siemens indicated that there was no change to the unit price of the propulsion units as a result of the additional 2 units.

Siemens provided two options that more evenly distribute the expenditures over the duration of the contract, compared to their original bid. The total amount for 102 units is $26,146,639.20 for Option 1 and is $28,147,073.40 for Option 2. (Refer to the attached Appendix 'A' for details). Staff confirmed that there are sufficient funds budgeted in the 2005-2009 Capital Program to accommodate either of these options.

Staff performed a net present value (NPV) analysis to compare the two options, which revealed Option 1 has a NPV that is approximately $807,000 lower than Option 2.

Staff also compared the NPV of Siemens' original bid amount (adjusted to 102 units) to their Option 1 for 102 units, which revealed the NPV of Option 1 is approximately $21,000 lower than the NPV of Siemens original bid. This is a result of a more favorable exchange rate offered by Siemens for the options compared to the rate offered in their original bid.

Staff further reviewed and clarified Siemens technical proposal in detail, and it is considered acceptable. Their proposal is also considered commercially acceptable, and they are recommended for award of contract based on the payment terms of Option 1.

The upset limit amount of $29,650,000 includes $3,500,000 for spare maintenance parts and optional equipment once requirements have been determined, and to accommodate any change orders which may arise during the design review phase of the contract.

JUSTIFICATION

To improve vehicle availability and reliability, replacement of the unreliable propulsion control system is necessary to meet the main objective of CLRV Life Extension Program. The new system

will also address maintainability problems experienced on a 30-year old design and incorporate provisions for multiple unit operation.

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