



DATE: MARCH 5, 1998

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TO: BOARD OF DIRECTORS

FROM: CHARLES W. STARK *CWS*
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**SUBJECT: VEHICLE ACQUISITION PROJECT, CONTRACT NO. P2000
LOS ANGELES STANDARD LIGHT RAIL VEHICLE
PROCUREMENT OF AUTOMATIC TRAIN PROTECTION
SYSTEMS FOR METRO BLUE LINE OPERATION**

ISSUE

In accordance with the MTA's Fleet Management Plan, Contract No. P2000 includes cars for both the Metro Green Line (MGL) and the Long Beach Metro Blue Line (MBL). Specifications for the cars did not, however, identify the required on-board Automatic Train Protection (ATP) or Automatic Train Control (ATC) systems. The ATC systems were defined and procured under the H1100 Contract for the cars destined for MGL. No system was identified for the remaining cars.

This memo documents the plan for providing the required ATP systems for the cars destined for the MBL and provides background for the issue.

BACKGROUND

Currently, there are 52 Los Angeles Standard Light Rail cars on order from Siemens Duewag under Contract No. P2000.

A necessary element of the vehicle operation is an ATC or an ATP signal system. This system consists of equipment on-board the vehicle which communicates with wayside signal control equipment to monitor speed and various safety functions.

Originally, 36 of the 52 cars were allotted to the Metro Green Line, and the on-board ATC signal systems for the 36 cars are being provided by US&S as part of the total MGL signal control system which includes both on-board and wayside equipment. US&S is the ATC Contractor for the MGL under Contract No. H1100.

However, no such effort is occurring for the remaining cars. When the P2000 specification was originally written in 1992, the non-MGL cars were destined for the Pasadena Metro Blue Line (PBL). At that time, however, the PBL signal control

system was not yet defined and no contractor was selected for the train control systems. Therefore, the requirements for the related on-board ATP equipment could not be identified, and as a consequence, that equipment could not be part of the P2000 specification until the PBL system was well-defined and a signal contractor was on-board.

On June 25, 1997, a Rail Revenue Fleet Management Plan was adopted by the Board. This new plan revises the previous plans by allocating 28 of 52 cars to the MGL (instead of 36) and allocates the remaining 24 cars to the Long Beach Metro Blue Line. Recently however, as part of the demobilization plan, staff has determined that only 19 cars would be required for the MGL, 15 cars would be needed for the MBL, and 18 cars are considered as excess cars (assuming the Pasadena project is not constructed).

Based on the above numbers, MTA must now procure at least 15 Carborne packages (33 if Carborne packages for the 18 excess cars are also to be procured). In order to assure that the ATP systems can be procured and incorporated into the remaining cars destined for the MBL with a minimum delay, the following approach is recommended:

Issue a change order to the P2000 contract to provide the on-board ATP systems for 15 cars plus spares. As part of the P2000 contract, Siemens' scope already includes part of the controls required for the on-board ATP equipment, such as: switches, indicators, and wiring harness. It is logical to require Siemens, the vehicle contractor, to procure and integrate the rest of the ATP systems in the vehicles. Such systems will also have to meet all other requirements of the P2000 contract (warranty, maintenance, reliability, etc.). Consequently, Siemens would then be solely responsible for the on-board signal systems and related technical and schedule interfaces with vehicle production. It should be noted that the existing 54 MBL and 15 MGL start-up vehicles' ATP systems were also supplied by the vehicle contractor, Sumitomo.

A Rough Order Magnitude (ROM) cost of approximately \$5,121,000.00 has been proposed by Siemens for 18 systems (15+3 spares). In order to assure as much price competition as possible, Siemens would be instructed to compete the various components which make up the ATP systems and provide appropriate back-up for substantiation when they submit a formal ATP cost proposal. The ATP systems would then be negotiated and added to the P2000 contract via a change order.

In order to implement the above recommendation, it is necessary to prepare the technical specification for the on-board ATP systems. Currently, staff is preparing the specification in-house. In addition, the manufacturing and installation of the ATP systems would have to be administered. Currently, LTK Engineering is responsible for administering the P2000 Contract under Contract No. E0350 at a total contract price of \$11,431,141. It is logical to issue a change order to LTK's scope to incorporate administration of the ATP on-board equipment production and integration into the vehicles by Siemens. Preliminary discussions indicate that the added administration costs should not exceed \$350,000.

The costs for these Carborne ATP systems were part of the original Pasadena total ATP system (Carborne and Wayside Equipment) budget. However, in 1994, the costs were removed (Trended) from the Pasadena budget during a cost-savings exercise. The main assumption was that the Carborne ATP systems would be included in the P2000 contract, which had just been issued, when in fact they were not.

Prior to demobilization of the Pasadena Line, it was assumed that because delivery of the P2000 cars to the MBL would free up existing MBL cars which would then be transferred to the Pasadena Line, the Pasadena Line should absorb the costs for 24 Carborne ATP systems. However, now because of Pasadena demobilization, MTA management needs to determine the source of funding for the 15 required ATP Systems.

Upon identification of the source of funding, Staff plans to proceed under the above scenarios and issue directives to obtain formal proposals from LTK for the administration and from Siemens for the ATP systems, and then proceed with negotiations.

Final change orders for the above would be submitted to the Board for approval on an individual basis as they are negotiated.

Prepared by: Tom Butler, P2000 Contracts