

**PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA**

Safety and Enforcement Division  
Rail Transit Safety Section

Resolution ST-164  
June 12, 2014

**RESOLUTION**

RESOLUTION ST-164 GRANTING APPROVAL TO THE  
LOS ANGELES COUNTY METROPOLITAN  
TRANSPORTATION FOR A VARIANCE FROM  
GENERAL ORDER 175, SECTION 6.3 (d)(i) FLAG  
REQUIREMENTS

**SUMMARY**

This resolution grants the request of the Los Angeles County Metropolitan Transportation Authority for a variance to flagging requirements of General Order 175, Section 6.3 (d)(i). In lieu of using flags as a method of train control in a work zone along the rail transit Right-Of-Way, they are proposing the use of an electronic early warning alarm system.

**BACKGROUND**

The Los Angeles County Metropolitan Transportation Authority's (LACMTA) rail transit operations consist of the Red, Purple, Blue, Green, Gold and Expo Lines. The rail system carries an average of 361,000 passengers per day and an average monthly ridership of 9,191,000.

LACMTA's light rail system (Blue, Gold, Green, and Expo lines) consists of a combination of street running and dedicated Right-Of-Ways (ROWs), while its heavy rail system (Red and Purple) consist of only dedicated ROWs.

June 12, 2014

While none of LACMTA's rail lines operate 24 hours of revenue service, nonrevenue times range from approximately 25 to 110 minutes depending on the line, location and circumstances. Therefore due to very short non-revenue time periods, maintenance, minor repairs, and inspections are traditionally performed during off-peak revenue hours, while trains are operating over the lines. These wayside activities are subject to General Order (GO) 175 and LACMTA's Roadway Worker Protection procedures, intended to maintain their safety while working along the rail ROW.

Commission GO 175, *Rules and Regulations Governing Roadway Worker Protection provided by Rail Transit Agencies and Rail Fixed Guideway Systems*, was adopted by the Commission in interim Decision 13-10-073 on October 31, 2013. The GO establishes controls and limitations on employees performing tasks when within the track zone of any track (except yard and end-of-line storage tracks), and establishes redundant levels of protection so that no single failure can result in an employee being struck by moving on-track equipment.

LACMTA has requested, by letter dated March 3, 2014, a variance to the flagging requirements of GO 175, Section 6.3 (d)(i). In lieu of using flags as a method of speed control in a work zone along the ROW, LACMTA is proposing the use of an active electronic early warning alarm system, manufactured by ProTran Technology LLC (ProTran). Along with the letter requesting the variance was LACMTA's Standard Operating Procedure number 56, "ProTran Warning Devices," which describes the use and functionality of the electronic early warning alarm system. LACMTA indicates it will comply in all other respects with the requirements of GO 175, including the additional requirements of Section 6.3 (d)(i), calling for a watchperson and restricted speed.

LACMTA began implementing the electronic early warning alarm system on its Green Line in August 2011 and has currently expanded its use to all its rail lines. LACMTA's fleet of revenue and nonrevenue vehicles are equipped with the electronic early warning alarm system devices. All employees and contractors who access the ROW are trained to use the electronic early warning alarm system.

CPUC staff (Staff) has observed and witnessed LACMTA's ProTran system tests and usage on the ROW during demonstrations of their electronic early warning alarm and subsequent Staff inspections. LACMTA also asserts that the flagging system may also result in single point failures, as the flags do not alert the roadway workers that a train is approaching as their electronic early warning alarm system does.

## **DISCUSSION**

The applicable portion of the GO is as follows:

### **6.3 Visual Inspections, Maintenance, and Repairs, Using Hand Tools, Machines, or Equipment**

The provisions of this section must cover all roadway worker/crew activities not covered in sections 6.1 and 6.2.

...

- d. On-rail vehicle movement into the work zone must be controlled by applying one or more of the following controls as appropriate:
  - i. with flags that indicate speed restrictions, advance warnings of stopping points, and stopping points: with watchpersons; and with all movements proceeding at a speed that will allow stopping within half the range-of-vision, limited also by a maximum miles-per-hour speed set by the EIC of 25 miles per hour or slower, or...

To maintain a safe operating system, LACTMA is proposing the use of the electronic early warning alarm system in accordance with SOP number 56, in lieu of passive flag speed-restriction signage system as a redundant reminder, as required by GO 175, Section 6.3(d)(i). The use of LACMTA's electronic early warning alarm system will replace the flags' redundancy role, and will actively notify the wayside workers and the train operators that the other party is within approximately eight hundred to twelve hundred feet (800 - 1200 ft.) of each other.

Due to the complexity of LACMTA's rail system and alignments, various segments of the system cannot easily accommodate a flagging system as

demonstrated to Staff on LACMTA's Gold Line on February 6, 2014. The use of GO 175 flagging requirements for the specific activities and inspections being performed at the time lead to significant delays in local traffic and LACMTA's train schedule.

The Protran electronic early warning alarm system is designed to address the requirements of the National Transportation Safety Board (NTSB) Recommendations R-08-04, R-13-39 and R-13-40.

- R-08-04  
Promptly implement appropriate technology that will automatically alert wayside workers of approaching trains and will automatically alert train operators when approaching areas with workers on or near the tracks.
- R-13-39  
Issue a directive to all transit properties requiring redundant protection for roadway workers, such as positive train control, secondary warning devices, or shunting.
- R-13-40  
Issue a directive to require all transit properties to review their wayside worker rules and procedures and revise them as necessary to eliminate any authorization that depends solely on the roadway worker to provide protection from trains and moving equipment.

LACMTA's SOP number 56 outlines the role and the use of the electronic early warning alarm device by the Train Operators, Controllers, Yard Controllers, and Field Supervisors. In addition, SOP number 56 also outlines the procedures that all electronic early warning alarm users must follow to inspect and test the device immediately before it is used on the ROW.

LACMTA requires the following persons to be using their electronic early warning alarm while working on the ROW:

- Employee In Charge (EIC)

June 12, 2014

- Flaggers
- Watchpersons
- Individuals performing minor tasks

Additionally, the supplier of LACMTA's electronic early warning alarm system, ProTran Technology LLC, meets with LACMTA's Wayside and Transportation Departments, as well as Corporate Safety, on a monthly basis to discuss ways to improve the system and to discuss any concerns or limitations of the system. Staff is invited to attend to observe and participate in the discussions, and has been participating in the meetings.

Staff has investigated LACMTA's request and believes that granting the variance will result in at least an equivalent level of roadway worker and system safety. The request, and Staff's investigation of the request, indicate that LACMTA is ahead of other California transit agencies in evaluating and utilizing the electronic early warning alarm system the Commission required to be evaluated and implemented within 4 years of the Decision date, in Ordering paragraphs 4, 5, and 6 of Decision 13-10-073. SED Staff recommends the Commission approve this variance request.

### **NOTICE**

On May 12, 2014, this Resolution was published on the Commission's Daily Calendar.

### **COMMENTS**

The draft resolution of the Safety and Enforcement Division in this matter was mailed in accordance with Section 311 of the Public Utilities Code and Rule 14.2(c) of the Commission's Rules of Practice and Procedure. No comments were received.

### **FINDINGS**

1. General Order 175 requires in Section 6.3(d)(i), the use of flags that indicate speed restrictions, advance warnings of stopping points, and

stopping points as one of the redundant methods of roadway worker protection.

2. LACMTA has requested by letter, dated March 3, 2014, a variance to the flagging requirements stated in GO 175, Section 6.3 (d)(i).
3. In lieu of using flags as a redundant warning for speed restrictions in a work zone along the ROW, LACMTA is proposing the use of an active electronic early warning alarm system for roadway workers and train operators.
4. LACMTA's electronic early warning alarm system is manufactured by ProTran Technology LLC., and is subject to LACMTA's SOP number 56 "ProTran Warning Devices" which describes the use and functionality of the ProTran electronic early warning alarm system.
5. The electronic early warning alarm system LACMTA is using is designed to address the recommendations of the National Transportation Safety Board (NTSB) R-08-04, R-13-39 and R-13-40.
6. Staff has observed and witnessed LACMTA's electronic early warning alarm system tests and usage on their ROW during demonstrations and Staff inspections.
7. Staff has evaluated LACMTA's proposed substitution of the flag warning provision with its developed ProTran system and agrees that the new system would provide at least an equivalent redundant protection and level of safety.
8. The electronic early warning alarm supplier meets with LACMTA's Wayside and Transportation Departments as well as Corporate Safety on a monthly basis to discuss ways to improve the system, any concerns with its operation or use, as well as its limitations. Staff is invited to attend to observe and participate in the discussions.

June 12, 2014

**THEREFORE, IT IS ORDERED THAT:**

1. The request of the Los Angeles County Metropolitan Transportation Authority for a variance to flagging requirements stated in General Order (GO) 175, Section 6.3 (d)(i) is granted.
2. In lieu of using flags as a method of speed control in a work zone along the Right-Of-Way, the Los Angeles County Metropolitan Transportation Authority will use the ProTran electronic early warning alarm system in accordance with their established standard operating procedure number 56.
3. This resolution is effective today.

I certify that the foregoing resolution was duly introduced, passed, and adopted by the Commission at its regularly scheduled meeting on June 12, 2014. The following Commissioners voted favorably thereon:

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PAUL CLANON  
Executive Director