

PROPOSED RESOLUTION

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

RAIL SAFETY DIVISION
RAIL TRANSIT SAFETY BRANCH

Resolution ST-239
July 16, 2020

RESOLUTION

**RESOLUTION ST-239 GRANTING APPROVAL OF THE
BAY AREA RAPID TRANSIT
TRACTION POWER SYSTEM IMPROVEMENTS PROJECTS
SAFETY AND SECURITY CERTIFICATION PLAN**

SUMMARY

This Resolution grants the request of the Bay Area Rapid Transit for approval of the Safety and Security Certification Plan for their Traction Power System Improvements Projects.

PROJECT DESCRIPTION

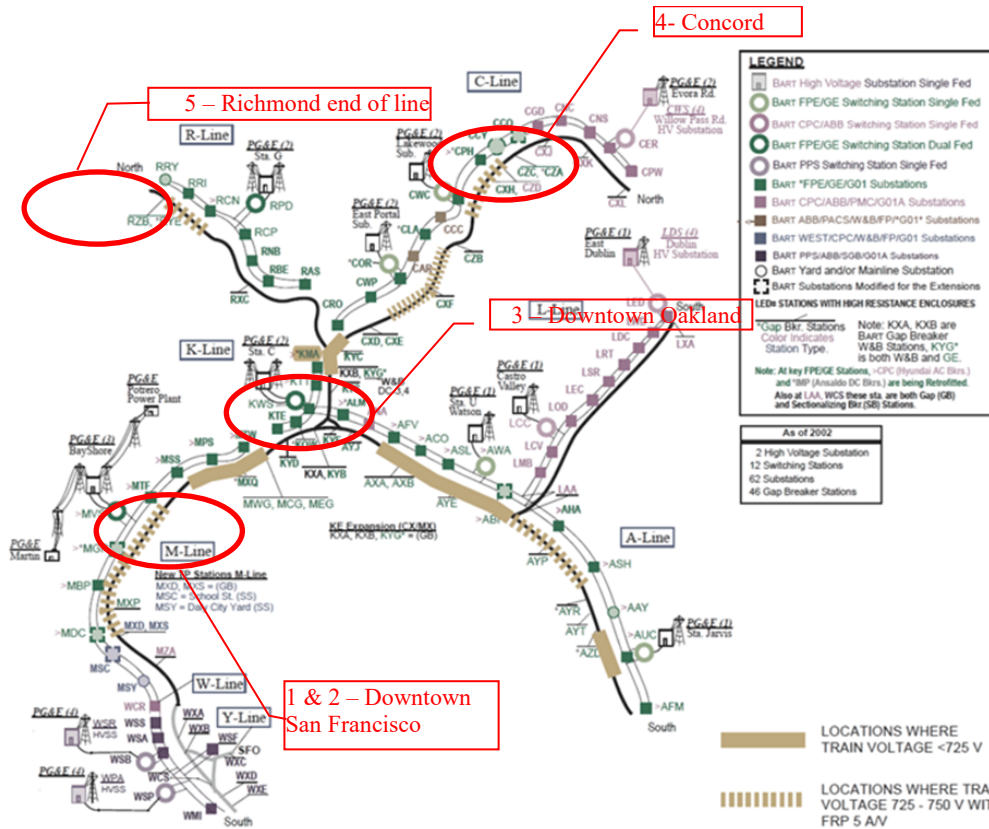
The Bay Area Rapid Transit (BART) system is a high-speed regional and metropolitan rail transit system, a mixture of commuter rail and metro rail, that operates 5 routes on 121 miles of line, configured in a dedicated right of way, with 48 passenger stations and six yards (maintenance and storage facilities: Millbrae, Dublin/Pleasanton, Daly City, Concord, Hayward and Richmond). Approximately 37 miles of the track is through subways and tunnels, approximately 23 miles is aerial track, and approximately 44 miles is surface track.

BART's five operational lines converge in the Oakland Wye, and 4 of 5 of the lines operate through the downtown San Francisco core at a headway spacing of up to approximately 24 trains per hour during peak periods.

The Transbay Corridor Core Capacity Program (TCCCP) is a package of strategic investments to relieve crowding and to allow for continued ridership growth by enabling BART to operate 30 ten-car trains per hour on the main trunk of the existing system, between Daly City and the Oakland Wye, thereby maximizing throughput in the most heavily used part of its system. These strategic investments fall into four major categories:

- Expansion of the rail car fleet enough to operate 30 ten-car trains in each direction during the peak demand periods;
- Expansion of the Hayward Maintenance Complex to provide storage for the additional rail cars;
- Communication-based train control (CBTC) with the capacity to handle 30 ten-car trains per hour in each direction; and
- Traction power system improvements - added Traction Power Substation (TPSS) facilities to support the overall TCCCP project.

This scope of the Safety and Security Certification Plan that is the subject of this Resolution is focused on the last of the four categories, Traction Power System Improvements Projects (TPSIP). The District conducted operational simulations to assess the electrical power requirements to operate 28-30 regularly scheduled ten-car trains through the Transbay Tube per hour in each direction, with continuing service at increased frequencies on each of the branches. The simulations assumed 30 ten-car trains per hour and included simulations of various delay scenarios that would lead to bunched trains, providing a safety factor or contingency in the analysis. It also assumed the electrical profile of BART's new vehicles as well as the CBTC system necessary to operate trains this frequently. The results of these simulations are summarized in a report entitled BART Transbay Core Capacity – Traction Power Simulation. The simulations revealed five areas along BART's mainline where the traction power requirements exceed the capacity available from BART's existing traction power system, as shown in the figure below.



Five sites have been identified for installation of new traction power substations (TPSS) to support the traction power system improvements portion of the Transbay Core Capacity Program. This effort has been divided into two projects with each project served by a separate General Engineering Consultant (GEC) Preliminary Engineering Team. One project includes the West Bay sites (M Line Civic Center Station TPSS and M Line Montgomery Street Station TPSS) and one project includes the East Bay sites (K Line Thirty Fourth Street TPSS, C Line David Avenue and Minert Road TPSS, and R Line Richmond Yard East TPSS). Both projects are monitored by a single BART Projects Manager and a GEC Design Oversight Team.

The typical footprint for an at-grade TPSS site must accommodate several pieces of equipment housed in prefabricated metal enclosures of rectangular shape approximately 12 feet in height, each with certain spatial clearances.

BACKGROUND

Commission General Order 164-E, *Rules and Regulations Governing State Safety Oversight of Rail Fixed Guideway Systems*, Section 11, requires that Rail Fixed Guideway Systems prepare a project-specific Safety Certification Plan (SCP) for each major project and ensure that all entities involved in design, construction, operation, and maintenance of the project shall comply with the requirements outlined in the SCP. The purpose of the SCP is to describe organizational authority and responsibilities, safety certification activities and processes, and documentation requirements and responsibilities. The SCP ensures that elements critical to safety are planned, designed, constructed, analyzed, tested, inspected, and implemented. The SCP also ensures that training is provided, and rules and procedures are followed. The SCP also includes consideration of security-related issues and the security of the completed and integrated project into BART's existing system.

A written Safety Certification Verification Report (SCVR) is required by CPUC General Order 164-E at the end of the project, before revenue service can begin. The SCVR shall be submitted to CPUC staff (Staff) upon project completion. The SCVR is then reviewed by Staff and, if it demonstrates compliance with the SCP and there are no remaining safety concerns, Staff will make a recommendation for an approval letter from the Rail Safety Division Director, which is sent to the transit agency allowing the project, or portions of it, to be placed into revenue service.

DISCUSSION

Commission General Order 164-E, Section 11, requires that Rail Fixed Guideway Systems prepare a project-specific SCP for all projects that initiate preliminary engineering after February 27, 2003. BART is responsible for ensuring that all entities involved in design, construction, operation, and maintenance of the entire TPSIP Project comply with the requirements of the Safety Certification process.

On May 1, 2020, BART submitted a Safety and Security Certification Plan for the TPSIP project for Staff review and Commission approval.

The submitted SCP describes the processes, responsibilities, documentation, and procedures needed for certification. The intent of the SCP is to define the safety certification management including organizational authority and responsibilities, safety certification activities, processes and procedures. Additionally, it provides a framework for ensuring that appropriate safety-related activities are performed and documented to support each Certificate of Compliance that will be issued.

The SCP objectives are to ensure that the following safety requirements have been satisfied:

1. Facilities, systems, and equipment have been designed, constructed, installed, inspected, and tested in accordance with applicable codes, standards, criteria, and specifications.
2. Plans, procedures, rules, and other documentation have been adequately developed, or reviewed and modified as necessary.
3. BART Operations and Maintenance personnel have been trained and are certified to perform their respective functions.
4. Emergency response agencies have been adequately prepared and drilled to respond to emergency situations on the system.
5. Identified safety hazards and security vulnerabilities have been eliminated or controlled to acceptable levels.
6. Construction work has been analyzed and hazards associated with the work identified.
7. Appropriate mitigating safety measures, rules, and procedures have been developed to address the identified hazards.
8. Mitigating safety measures, rules, and procedures are incorporated into appropriate contract documents.
9. Ensure that system safety and security decisions are made by appropriate Project Managers, committees, and responsible contractors.

The SCP identifies the certifiable elements of the project, as well as the roles and responsibilities of each party (BART, its contractors, and CPUC Staff) involved throughout the project. Subsequent to Commission approval, the SCP may be revised and expanded as the project progresses with Staff's review and approval.

The project is a design-bid-build project, BART will have the primary responsibility for implementation of the SCP. BART will be responsible for project safety certification and submittal of the SCVRs to Commission Staff.

As the project will be conducted in phases, SCVRs will be submitted based on each of the five site's completion. BART will submit certification documents and a SCVR for each site, seeking approval to place the new TPSS in revenue service as the project progresses. Additionally, a final SCVR will be submitted to notify the Commission of the conclusion of the project.

The BART Project is selecting a contractor and will be issuing a Notice to Proceed on the Project in 2020. Staff from the Rail Transit Safety Branch of CPUC will conduct continuous and ongoing oversight and inspections of the project and SCP implementation as the project progresses.

Staff reviewed and analyzed the content of the project SCP in accordance with General Order 164-E Section 11, Requirements for Safety Certification Plan and the Rail Transit Safety Branch Program Management Standard Procedures Manual, State Safety and Security Oversight of Rail Fixed Guideway Systems (Program Standard), Section 9. Staff finds that BART's Traction Power System Improvements Projects Safety and Security Certification Plan is in compliance with General Order 164-E and the RTSB Program Standard. Although BART submitted the SCP later in the process than desirable and experienced delays in attaining all signatures on the SCP, traction power facilities are facilities familiar to Staff, so Staff was able to conduct its review and timeliness of the submittal was not a concern relative to Staff's review and project schedule.

Based upon the results of the Project's SCP review, Staff recommends that the Commission grant approval of the BART TPSIP SCP.

NOTICE

On June 13, 2020, this Resolution was published on the Commission's Daily Calendar.

COMMENTS

The draft resolution of the Rail Safety Division in this matter was mailed in accordance with Section 311 of the Public Utilities Code and Rule 14.2(d)(1) of the Commission's Rules of Practice and Procedure.

No comments were received.

FINDINGS

Findings and explanations here

1. On May 1, 2020, BART submitted its SCP for the TPSIP project for Staff review and Commission approval.
2. The TPSIP project is an improvement to BART's existing traction power system. BART will install additional traction power substations for five selective sites within its system.
3. This SCP identifies the process by which the project will be certified as meeting the established safety and security criteria and standards to operate in revenue service.
4. Staff reviewed and analyzed the content of the SCP and found it to be in accordance with General Order 164-E, Section 11 and the Rail Transit Safety Branch Program Management Standard Procedures Manual, State Safety and Security Oversight of Rail Fixed Guideway Systems, Section 9.

THEREFORE, IT IS ORDERED THAT:

1. The request of the San Francisco Bay Area Rapid Transit District for approval of the Safety and Security Certification Plan for its Traction Power System Improvements Projects is granted.
2. San Francisco Bay Area Rapid Transit District shall submit the Safety Certification Verification Reports to CPUC Staff upon project milestones as outlined in the Safety Certification Plan, and one at the project completion.
3. This resolution is effective today.

I certify that this resolution was adopted by the Public Utilities Commission at its regular meeting held on July 16, 2020. The following Commissioners voting favorably thereon:

ALICE STEBBINS
Executive Director