Safety Certification

MTA Safety Certification Practice

Vern Hartsock
Overview

Safety and Security Certification – Definition
Authorization – FTA Mandate
Roles and Responsibilities
MTA System Safety Program Plan (SSPP)

**MTA Safety & Security Certification Process**
- Design Phase
- Construction / Commissioning Phase
- Fully Executed Safety and Security Verification Report
- System Modifications
The series of processes that collectively verifies the safety and security readiness of a project for public use.

Addresses conditions that could result in harm whether unintentional (safety) or intentional (security).

Safety and security promotes an informed management decision making process in project design, construction, testing and into revenue service.
FTA Mandate

The MTA is mandated by the Federal Transit Administration (FTA) for its Heavy Rail, Light Rail, Commuter Rail, Bus, and Paratransit operations to develop, implement, and administer a comprehensive and coordinated System Safety Program.

The MTA maintains a thorough and proactive system safety policy consistent with these mandates and industry best practices.

The program is defined in the MTA annual publication of the System Safety Program Plan (SSPP)
State Safety Oversight

**MDOT State Safety Oversight (SSO) - George Goode**

- Oversees the system safety and security aspects of the MTA’s light rail, commuter and heavy rail operations in accordance with 49 CFR Part 659, Rail Fixed Guideway Systems; State Safety Oversight.
- Participates in audits of MTAs transportation services work practices.
Roles and Responsibilities

MTA Office of Safety Quality Assurance and Risk Management (OSQARM)

*Chief Safety Officer - Bernadette Bridges*

- Prepares and updates the System Safety Program Plan (SSPP)
- Participates in all Safety and Security Certification activities for Capital Projects and System Modifications
- Approves all Safety and Security Certification Plans (SSCP)
Roles and Responsibilities

MTA Engineering / MTA Construction

• Ensures projects are Safety and Security Certified per the SSPP
• Ensures program technical spec requirements are met by the contractor
• Participates as a member of Safety Committee and provides technical assistance
• Ensures completion of safety certifiable test program
• Coordinates contractor hazard resolution activities
Roles and Responsibilities

MTA Engineering  QA / QC
• Monitors the development and execution of the Safety and Security Certification Plan for all capital projects

Contractor
• May provide information to support the Certification (i.e. for proprietary systems)
• Provide analysis of hazards/resolution for products/systems as required (i.e. furnishing locomotives or signaling system, etc.)

MTA Administrator
• Provides final approval of all Safety and Security Certification Plans

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MTA System Safety Program Plan (SSPP)

The SSPP communicates MTA’s specific system safety goals and objectives, and documents and defines the safety responsibilities, activities, and capabilities established by the MTA to promote and improve system safety throughout all operations and services.

The SSPP is written in accordance with the guidelines specified by:

- The APTA manual for development of System Safety Program Plans for Commuter Railroads
The SSPP is reviewed annually and revised as necessary under the direct authority of the MTA Administrator, to:

- Ensure it remains accurate, effective, and consistent with MTA Management goals and objectives
- Ensure compliance with the most current State, Federal, and local regulations and industry guidelines
The System Safety Program Plan establishes mechanisms for identifying and addressing hazards associated with MTA operations and services.

Section 8 of the SSPP (Safety and Security Certification Program, SSCP) provides a means of ensuring that proposed system design, construction and modifications are implemented with thorough evaluation of their potential effect on safety and security.
SSCP Process

- Evaluates safety and security-critical elements or equipment with vital functions affected by additions, deletions, substitutions, rebuilding, replacement, modification, or new design associated with the project to identify and resolve potential hazards and vulnerabilities through a hazard elimination/reduction process.
- Ensures each element of the system and each component of those elements conforms with safety and security design requirements, safety and security criteria, and specification requirements.
- Implements a systematic review of testing, analyses, inspections.
- Documents tests, analyses, inspections, or reviews that clearly displays the successful completion of the project for presentation to the Administrator, MDOT, or other interested agencies or individuals.
- Documents all safety and security-critical items and potential hazards and vulnerabilities.
SSCP Process Overview

The safety and security certification process must include hazard identification, analysis, and mitigation elements for the five safety and security functions:

1. **System Safety** - Protection of property / system from damage
2. **Fire/Life Safety** - Protection from fire, explosion, or chemical exposure
3. **Occupational Safety** - Protection of employees / emergency response personnel
4. **Public Safety** - Protection of the general public and passengers
5. **System Security** - Control of potential threats
MTA Engineering Application of the SSPP

• Office of Engineering and Construction publishes SOP manuals for its divisions:
  – Systems Engineering
  – Resident Engineer / Construction
  – Facilities and ADA / Track and Structures / Fixed Guideways

• Each manual provides reference to the SSPP regarding the requirements for Safety and Security Certification plans.
A Safety and Security Certification Plan provides verification that:

- Safety and Security Certifiable Items list developed
- Safety and security design criteria developed
- Design checklist developed
- Construction checklist developed
- Integrated tests identified and developed
- Training classes developed and provided to MTA personnel
- O&M manuals developed and provided
- O&M personnel trained on rules and procedures
- Public Safety personnel are trained to respond to emergencies
- Emergency drills simulations, table-top exercises conducted
- Hazards and vulnerabilities identified, tracked, and resolved or accepted
- Safety and Security Certificate issued
- Safety Certification Verification Report generated and transmitted
- Project successfully complies with identified safety and security requirements
Developing a SSCP

Development of a project specific Safety & Security Certification Plan (SSCP) typically involves ten steps that are applied during a project’s life-cycle.

**Design Phase**

1. Identify Certifiable Elements (Certifiable Items List – CIL)
2. Develop Safety and Security Criteria
3. Develop and Complete Design Criteria Conformance Checklist
4. Prepare Construction Specification Conformance
5. Identify Safety and Security Test Requirements

**Construction Phase**

6. Perform testing and validation to support SSC program
7. Manage Integrated tests for the SSC program
8. Manage “Open Item” in SCC Program
9. Verify Operational Readiness
10. Conduct final readiness review and issue Safety and Security Certificate
# Sample Safety CIL

## Sample Certifiable Elements and Sub-Elements List

<table>
<thead>
<tr>
<th>Systems</th>
<th>Civil Installations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vehicle</strong></td>
<td><strong>Track and Structures</strong></td>
</tr>
<tr>
<td>- Carbody</td>
<td>- Right of Way</td>
</tr>
<tr>
<td>- Coupler</td>
<td>- Track</td>
</tr>
<tr>
<td>- Doors, Door Operators and Controls</td>
<td>- Aerial</td>
</tr>
<tr>
<td>- Trucks and Suspension</td>
<td>- At-grade</td>
</tr>
<tr>
<td>- Propulsion</td>
<td>- Underground</td>
</tr>
<tr>
<td>- Braking</td>
<td>- Barriers and Warnings</td>
</tr>
<tr>
<td>- Operator’s Cab and Controls</td>
<td><strong>Yard and Shop</strong></td>
</tr>
<tr>
<td>- Mobility Lift</td>
<td>- Vehicle Movement Provisions</td>
</tr>
<tr>
<td>- Lighting</td>
<td>- Track and Appliances</td>
</tr>
<tr>
<td>- HVAC</td>
<td>- Building (Occupancy)</td>
</tr>
<tr>
<td>- Fire/Flammability/Smoke Emissions</td>
<td>- Fire System</td>
</tr>
<tr>
<td><strong>Signals</strong></td>
<td>- Lifts/Elevator</td>
</tr>
<tr>
<td>- Interlocking Circuits/Equipment</td>
<td><strong>Stations/Parking Lots</strong></td>
</tr>
<tr>
<td>- Mainline Controls and Indications</td>
<td>- Platforms</td>
</tr>
<tr>
<td>- Yard/Mainline Interface</td>
<td>- Elevators and Escalators</td>
</tr>
<tr>
<td>- Track Signals</td>
<td>- Illumination</td>
</tr>
<tr>
<td>- LRT Signals</td>
<td>- Electrical Grounding</td>
</tr>
<tr>
<td>- Signal Indications</td>
<td></td>
</tr>
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</table>
MTA Safety Certifiable Items List

<table>
<thead>
<tr>
<th>Submittal No.</th>
<th>Date Received:</th>
<th>Description</th>
<th>Sent To:</th>
<th>Returned to RE:</th>
<th>Approval Status:</th>
<th>Return Date:</th>
<th>S N</th>
<th>- Safety Element or - Non-Safety Item</th>
<th>STATUS Safety</th>
<th>Status</th>
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<tbody>
<tr>
<td>02764 Section</td>
<td>1/20/2004</td>
<td>LEAD FREE REFLECTIVE THERMOPLASTIC PAVEMENT MARKINGS</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Site Utilities &amp; Parking</td>
<td>OPEN</td>
<td>OPEN</td>
</tr>
<tr>
<td>02820 Section</td>
<td>1/20/2004</td>
<td>CHAIN LINK FENCE AND GATES</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Site Utilities &amp; Parking</td>
<td>CLOS</td>
<td>CLOS</td>
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<tr>
<td>02833 Section</td>
<td>1/20/2004</td>
<td>BOLLARDS</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Facility &amp; Systems</td>
<td>OPEN</td>
<td>OPEN</td>
</tr>
<tr>
<td>02890 Section</td>
<td>1/20/2004</td>
<td>SIGNS</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Site Utilities &amp; Parking</td>
<td>CLOS</td>
<td>OPEN</td>
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<tr>
<td>02895.003</td>
<td>5/10/2004</td>
<td>Tank Monitoring System</td>
<td>Tom Karmian</td>
<td>6/14/2004</td>
<td>Approved, No Exceptions noted</td>
<td>6/14/2004</td>
<td>S</td>
<td>Site Utilities &amp; Parking</td>
<td>CLOS</td>
<td>RA</td>
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<tr>
<td>02895.004.A</td>
<td>7/16/2004</td>
<td>Stage II Vapor Recovery Piping Resubmittal</td>
<td>Will Aasen</td>
<td>8/10/2004</td>
<td>Approved, No Exceptions noted</td>
<td>8/10/2004</td>
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<td>Site Utilities &amp; Parking</td>
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<td>OPEN</td>
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<td>5/10/2004</td>
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<td>Tom Karmian</td>
<td>6/14/2004</td>
<td>Approved, No Exceptions noted</td>
<td>6/14/2004</td>
<td>S</td>
<td>Site Utilities &amp; Parking</td>
<td>CLOS</td>
<td>RA</td>
</tr>
</tbody>
</table>
Certifiable Elements/Certification Process

Certifiable Element

- Design Criteria Conformance
- Construction Specification Conformance
- Testing, Inspection Conformance
- Risk Resolution Conformance
- Rules and Procedures Conformance
- Training and Exercises Conformance

PROJECT PERFORMANCE

CERTIFICATE OF CONFORMANCE FOR EACH CERTIFIABLE ELEMENT

PROJECT SAFETY AND SECURITY CERTIFICATE

FINAL VERIFICATION REPORT
Construction / Commissioning Phase

- MTA OSQRM Reviews and approves contractor Safety Plan
- Finalization and approvals of Project Specific Safety & Security Certification Plan by OSQRM
- Approval of program test plans & hazard analysis not available during the design phase
- Verification of all activities and deliverables by RE & OSQRM (tests, training, manuals, etc.)
- Review test reports, inspection reports
- Resolve all Safety Certifiable Open Items
- Train Emergency Responders on New Equipment and Operations
- Fully Executed Safety and Security Report — Signed off by the Administrator
# Safety Certifiable Documents

## Safety Certification Check List
Charles Center

<table>
<thead>
<tr>
<th></th>
<th>Initial</th>
<th>Date Received</th>
<th>Completed</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>JG</td>
<td>2/16/10</td>
<td>✓</td>
</tr>
<tr>
<td>2.</td>
<td>JG</td>
<td>7/30/10</td>
<td>✓</td>
</tr>
<tr>
<td>3.</td>
<td>JG</td>
<td>1/19/10</td>
<td>✓</td>
</tr>
<tr>
<td>4.</td>
<td>JG</td>
<td>5/25/10</td>
<td>✓</td>
</tr>
<tr>
<td>5.</td>
<td>JG</td>
<td>7/30/10</td>
<td>✓</td>
</tr>
<tr>
<td>6.</td>
<td>JG</td>
<td>1/19/10</td>
<td>✓</td>
</tr>
<tr>
<td>7.</td>
<td>JB</td>
<td>1/14/10</td>
<td>✓</td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>JG</td>
<td>6/3/10</td>
<td>✓</td>
</tr>
<tr>
<td>10.</td>
<td>JB</td>
<td>5/18/11</td>
<td>✓</td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Safety Certifiable Artifacts

---

**Letter of Transmittal**

**To:** Howard Oregon
AECOM
4200 Old Court Road
Baltimore, MD 21209
Ph: (410)577-1738

**Subject:** Submittal

**WE ARE SENDING YOU**

- Attached
- Under separate cover via None the following items:
  - Shop drawings
  - Prints
  - Plans
  - Samples
  - Change order
  - Specifications
  - Submittal

**Document Type** | **Copies** | **Date** | **No.** | **Description**
--- | --- | --- | --- | ---
Submitted | 6 | 13600-40 Rev A | Ledgton Market FMS Testing Documentation

**THese ARE TRANSMITTED as checked below:**

- [ ] For approval
- [ ] For your use
- [ ] As requested
- [ ] For review and comment
- [ ] FOR RDS DUE
- [ ] PRINTS RETURNED AFTER RDS TO US

<table>
<thead>
<tr>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Copy To:**

**From:** Nick Noor (Gill Simpson Inc.)

**Signature:**

**RECEIVED**

AUG 11 2010

AECOM

---

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Safety Certifiable Artifacts

### SUBMITTAL REVIEW COMMENTS

**Reviewer:** A. JAFIR  
**Reviewer’s Organization:** SCM  
**Contract No.:** T-0457-0240  
**Contract Title:** Metro Fire and Security Management System  
**Submittal Status:** Reviewed, Exceptions Noted, Resubmittal Required  
**Submittal Name:** Charles Center FMS Testing - Record of Completion  
**Submittal No.:** 13850-041  
**Review Date:** 7/15/2010  
**Sheet 1 of 1**

<table>
<thead>
<tr>
<th>Comment</th>
<th>Dwg # or Spec Section</th>
<th>Comment</th>
<th>Code No*</th>
<th>*Response By/Designer’s Notes</th>
<th><strong>Verified/By</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>13850-41</td>
<td>Provide address/telephone number of the “Authority Having Jurisdiction”.</td>
<td></td>
<td>Will comply</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>13850-41</td>
<td>Fill all items left blank on “Record Of completion”. Indicate “Not Applicable” (N/A) on lines for items those do not apply.</td>
<td></td>
<td>Will comply</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>13850-41</td>
<td>Item 1. Type(s) of System Service- Under this item for Remote Station, in addition to the phone numbers, include name and address of the organization receiving alarm.</td>
<td></td>
<td>Will comply</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>13850-41</td>
<td>Item 2. “Record of System installation” - After “Inspected by” write name of the individual in addition to the company name GILL – SIMPSON.</td>
<td></td>
<td>Need signature from installer</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>13850-41</td>
<td>Write individual’s name and signature next to line noted as Signed.</td>
<td></td>
<td>Need signature from installer</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>13850-41</td>
<td>Item 2. “Record of System installation” - Indicate the year of NFPA 70 &amp; NFPA 72 that are referred with the chapters and article number. Also sign and date the line noted as “Signed”.</td>
<td></td>
<td>NFPA 72 2007 Edition was added Need signature from installer</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>13850-41</td>
<td>Item No. 8 c - Provide quantity and type of the horns installed.</td>
<td></td>
<td>No audible devices were installed</td>
<td></td>
</tr>
</tbody>
</table>
Safety Certifiable Artifacts

### Software Change Control Form

**Section A**

<table>
<thead>
<tr>
<th>Project</th>
<th>MTA Metro Fire</th>
<th>Change Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlled Item</td>
<td>Phase V Updates</td>
<td>Revision Version</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MetroFire Phase V</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mar.18,2010</td>
</tr>
</tbody>
</table>

**System to be Changed**

For Onboard give section number / page number
For Software give Module, Screen or Report name
AIM – Host A and all Workstations

**Change Details**

Change Requests: See attached CRs.

**Requested By:**

Anna Taylor

**Date:** 03/18/2010

**Section B**

**Reason for Change**

Address schedule issues.

Impact give details of other items affected

See Change Details.

**Section C**

<table>
<thead>
<tr>
<th>Pre Test</th>
<th>Date Scheduled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Post Test</th>
<th>Date Scheduled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Regression Test</th>
<th>Date Scheduled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Section D**

**Change Approved**

GSA Project Manager

[Signature]

Date: 3/14/2010

SCM Construction Manager

[Signature]

Date: 3/24/10

MTA Operations Manager

[Signature]

Date: 3/22/10

MTA Safety Manager

[Signature]

Date: 3/24/10

**Section E**

**Completed**

Date:               

**Open Items**

Date:               
## Safety Certifiable Artifacts

### TEST RECORD

<table>
<thead>
<tr>
<th>Test Procedure Name: FMS 24 Hour Battery Test</th>
<th>Test Date: 6-9-10 - 6-10-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Results: Passed ___ Failed ___</td>
<td>Test Type: Demonstration</td>
</tr>
<tr>
<td>Test Duration: 24 hrs + 15 minutes</td>
<td>Test Location: Charles Center Station</td>
</tr>
<tr>
<td>Start Time: / / 15 am 6-9-10</td>
<td>End Time: / / 3:00 am 6-10-10</td>
</tr>
<tr>
<td>Equipment Under Test:</td>
<td></td>
</tr>
<tr>
<td>Fire Alarm Control Panel (1)</td>
<td></td>
</tr>
<tr>
<td>Fire Management Panel (1)</td>
<td></td>
</tr>
<tr>
<td>Notification Appliance Control Panels (7)</td>
<td></td>
</tr>
<tr>
<td>Digital Alarm Communicator Transmitter (1)</td>
<td></td>
</tr>
<tr>
<td>Digital Voice Controller (1)</td>
<td></td>
</tr>
<tr>
<td>Intelligent Field Devices</td>
<td></td>
</tr>
<tr>
<td>Visual Notification Appliances</td>
<td></td>
</tr>
</tbody>
</table>

### Test Objectives:

To insure fifteen minutes of audible / visual notification of an alarm, after all systems mains power has been removed and systems have been powered by batteries for a period of 24 hours.

### Test Setup:

- Notify OCC of the 24 hour test. OCC personnel will contact the Central Station Monitoring Co. and place the account on test for troubles only.
- Switch the FMS mains breakers to the off position, lock and tag out breakers.
- Verify all FMS panels have switched to battery power.
- Record the time that the breakers were switched off.
- At the end of the 24 hour period initiate Station EVAC for a period of 15 minutes.
- While in EVAC, verify proper operation of audible and visual notification devices.
- At the end of the 15 minutes of EVAC testing, return the FMS mains breakers to the on position.
- Verify all FMS panels are operating on normal mains power.
- Notify OCC that the test is completed and to place the account back on line.
Supplemental Inspection Report

Date: 6/8/10

Fire Safety Inspection

On Tuesday, June 8, 2010, the Office of the State Fire Marshal conducted inspection on the fire alarm system for Charles Center Station location of the MTA-Subway. The following issues need to be corrected on the fire alarm system.

1. Need to repair the voice evacuation speakers to the fire alarm system because the volume was too low and there was static. Barely could hear the instructions for the evacuation when the alarm system activated.

Other issues found during the fire alarm inspection:

1. Need to remove trash throughout the mechanical areas of the station.
2. Need to have the Fire Extinguisher service/inspected in the following areas: Room 110 ancillary mechanical, Room 114 Elect/Battery, Stairway to 351 Vent Shaft transfer level, Cabinet FD stairway/room 305 ancillary mechanical, Room 305, 301, 309, 501, and 551.
3. Replace/Repair sprinkler piping in the hallway between the Fire alarm panel and Room 362. The sprinkler piping is rusted.
4. Electrical panel WE1 in Room 114 the cover plate is off.
5. Electrical panel EP1 Room 101 the cover plate is off.

Received: print signature
Inspector: Brian Quick #8542 Brian Quick #8542

Sent to: Office of the State Fire Marshal
15 East Main Street, Ste 220
Westminster, MD 21157
(410) 871-3050, FAX: (410) 871-2478

SFMP 011 (REV 1/04)
MFSMS SYSTEM

COMPLETION OF 30DOT

Pursuant to Contract No. MTA-T-0457-0240 of ARINC Incorporated the undersigned hereby certifies that the MFSMS System has successfully completed Thirty Day Operational Test (30DOT) for Charles Center as of July 7, 2010. No failures were reported. Any anomalies have been identified and are being tracked with a punch list.

[Signatures and dates]
Safety Certifiable Artifacts

MTA SAFETY AND SECURITY CERTIFICATION
FOR THE
METRO FIRE & SECURITY MANAGEMENT SYSTEMS

CERTIFICATE OF CONFORMANCE

****Phase I Cutover****

Based on the documentation presented, Phase I Cut-Over is certified for Revenue Operations.

RESTRICTIONS –

APPROVED BY:

METRO Construction Manager: [Signature] Date: 11/24/05

MTA Executive Director, OSQARM: [Signature] Date: 11/24/2009
## MFSMS Safety Open Items List

<table>
<thead>
<tr>
<th>Item #</th>
<th>Description</th>
<th>Location</th>
<th>Date-Entered</th>
<th>Status</th>
<th>Verified By</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR 23284</td>
<td>Phase III - Damper breakers &amp; main breakers are showing tripped when MCCs and Dampers are functional</td>
<td>WCS</td>
<td>12/22/2009</td>
<td>Closed</td>
<td>ARINC</td>
<td>12/22/2009</td>
</tr>
<tr>
<td>CR 23462</td>
<td>West Cold Spring TC&amp;C temp: air pressure and Battery are hard to read.</td>
<td>WCS</td>
<td>12/28/2009</td>
<td>Closed</td>
<td>ARINC</td>
<td>1/8/2010</td>
</tr>
<tr>
<td>CR 23606</td>
<td>Zones are incorrect for ND1 L2 D001 and D002 @ WCS</td>
<td>WCS</td>
<td>1/15/2010</td>
<td>Closed</td>
<td>ARINC</td>
<td>1/15/2010</td>
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<tr>
<td>CR 23608</td>
<td>Fire Points ND1 L1 M041 and M042 need to be added for WCS</td>
<td>WCS</td>
<td>1/15/2010</td>
<td>Closed</td>
<td>ARINC</td>
<td>1/15/2010</td>
</tr>
<tr>
<td></td>
<td>Regression Test need to be re-scheduled</td>
<td>WCS</td>
<td>1/13/2010</td>
<td>Open</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cutover SCADA Interface Verification (No indication of Pass or Fail, not all signatures or date)</td>
<td>WCS</td>
<td>1/19/2010</td>
<td>Open</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P.L.E. 01</td>
<td>PLC01 - No B4 for Telefast Cables and power cables which are just hanging</td>
<td>WCS</td>
<td>4/7/2010</td>
<td>Closed</td>
<td>MM</td>
<td>4/7/2010</td>
</tr>
<tr>
<td>P.L.E. 03</td>
<td>PLC01- CAT5 cable labeled PLC01/FACP not connected to switch.</td>
<td>WCS</td>
<td>4/7/2010</td>
<td>Closed</td>
<td>MM</td>
<td>5/7/2010</td>
</tr>
<tr>
<td>P.L.E. 04</td>
<td>PLC01- Power terminals for PLCs are not secured.</td>
<td>WCS</td>
<td>4/7/2010</td>
<td>Closed</td>
<td>MM</td>
<td>3/31/2010</td>
</tr>
<tr>
<td>P.L.E. 05</td>
<td>PLC01- First duplex outlet does not have ampe labeled.</td>
<td>WCS</td>
<td>4/7/2010</td>
<td>Closed</td>
<td>MM</td>
<td>3/29/2010</td>
</tr>
<tr>
<td>P.L.E. 08</td>
<td>FDP01 - Jacket of fiber jumpers was cut short and is about to fall off connector grommet</td>
<td>WCS</td>
<td>4/7/2010</td>
<td>Closed</td>
<td>MM</td>
<td>4/12/2010</td>
</tr>
<tr>
<td>P.L.E. 09</td>
<td>PLC01 - Tape with EP1-6 and EP1-10 need permanent labels.</td>
<td>WCS</td>
<td>4/7/2010</td>
<td>Closed</td>
<td>MM</td>
<td>4/12/2010</td>
</tr>
<tr>
<td>P.L.E. 10</td>
<td>TPSSS-F- Surgelogic has replace module for B phase.</td>
<td>WCS</td>
<td>4/7/2010</td>
<td>Open</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The System modification review and approval process applies to the following as referenced in Section 7 of the SSPP and in procedure MTA-GP-04-02:

- Changes in safety-critical processes or functions
- New construction projects or modifications to existing facilities limited in scope
- Equipment acquisitions or modifications/overhauls of existing equipment
- Proposed system expansions including new routes or operating territories
- Projects not requiring a formal Safety and Security Certification Program
System Modifications Approval Process

The safety risks are assessed and a Safety Risk Management Report (SRMR) is generated which contains the following:

- Description of system modification
- Identification of potential hazards
- Estimated level of safety risk based on MTA Hazard Risk Assessment Matrix
- Description of existing or initial hazard mitigation plan commensurate with level of safety risk
- The SRMR is reviewed and evaluated and approved
System Modifications Approval Process

- Hazard Risk Assessment is performed on the proposed systems and System Modification Authorization Request generated.
- The Project Manager ensures that the impacts of proposed system modifications are thoroughly evaluated prior to implementation.
- Ensure that system modifications do not create new hazards by performing:
  - Preliminary Hazard Analysis (PHA)
  - Subsystem Hazard Analysis (SSHA)
  - Detailed System Hazard Analysis (DSHA)
  - Operating Hazard Analysis (OHA)
- Hazard Assessment Report generated and reviewed.
- Safety and Security Certification Plan generated.
- Train Emergency Responders on new equipment and operations.
Certification Benefits

- Ensures hazards and vulnerabilities are identified, assessed and documented
- Ensures adherence to applicable codes, guidelines and conformance to design
- Ensures systems / facilities are designed, constructed, tested and operated safely
- Ensures safety plans, operating procedures and rules are developed for operations
- Ensures proper training is developed for operations and emergencies
NOTES