



Massachusetts Bay Transportation Authority

CAPITAL PROGRAMS USER GUIDE:

**CONSTRUCTION NONCONFORMANCE AND
CORRECTIVE ACTION REPORTING (NCR)**

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1.0 Policy

The Nonconformance and Corrective Action Reporting (NCR) Process is a controlled and documented process for evaluating, resolving, and tracking material or work that does not comply with the requirements of contract documents, and it cannot be corrected through the normal course of work included in the contract.

Contract documents comprise the conformed drawings and specifications used for the delivery of a project. Materials or work determined not to conform to contract documents, but can be corrected within the current scope of the contract, will not require an NCR, but shall be tracked through Inspection and Testing Status procedures.

All Capital Programs, including Capital Delivery, Transformation, and Expansion construction contracts, and any Transit-Oriented Development projects that construct MBTA assets, shall follow this Nonconformance Reporting Process. This process does not apply to the design process.

2.0 Purpose

The purpose of the NCR Reporting Process is to encourage first-time quality and to discourage dispositions that do not fully meet contract document requirements by quickly identifying and isolating any material or work that does not fully meet contract document requirements to prevent the inadvertent use or installation of those items.

Any request by the Construction Contractor to accept work that does not fully meet the requirements of contract documents requires that the Office of the Chief Engineer (OCE) verify conformance to the Basis of Design for characteristics such as scope, schedule, cost, durability, maintainability, and operations performance incorporated in the contract documents.

The Office of the Chief Engineer shall review changes affecting safety, budget, schedule, and quality to ensure review by parties with the appropriate level of authority.

The MBTA shall not be liable for any delay associated with the review of proposed work that does not fully meet the requirements of the contract documents.

The NCR process will generate data that will help identify trends that require improvement to produce high quality deliverables.

3.0 Responsibilities

All groups participating in delivery of Capital Programs projects shall report nonconforming work to their respective quality managers when identified. The order of precedence for responsibility of initiating the Nonconformance Report is:

- ❖ The Construction Contractor's Quality Control Manager
- ❖ Design Team Project Manager

- ❖ MBTA Resident Engineer; (may be drafted by Field Inspector)
- ❖ A member of the MBTA Capital Support QA/QC group

3.1 Construction Contractor, Subcontractor, of Fabricator (Construction Contractor QC Manager)

- 3.1.1 Controls nonconforming work to ensure it does not become part of the permanent work.
- 3.1.2 Determines the root cause of nonconformance.
- 3.1.3 Proposes corrective action for nonconformance, and executes when the proposal is approved.
- 3.1.4 Develops a specific set of actions to prevent or reduce the reoccurrence of the nonconformance (preventive action plan).
- 3.1.5 Executes the plan when it is approved.
- 3.1.6 Is responsible for any delay related to review and correction of nonconforming work.

3.2 Design Team (Project Manager)

- 3.2.1 Create NCR if not initiated by Construction Contractor (See section 3.1).
- 3.2.2 Review proposed resolution for conformance with the design intent.
- 3.2.3 Determine if Safety Certification Plan will be impacted by resolution.
- 3.2.4 If consistent with design intent, recommends acceptance.
- 3.2.5 If inconsistent with design intent, specifies additional/alternate material or work as required to meet the design intent.
- 3.2.6 Reviews the preventive action plan and advises the Project Office and MBTA QA/QC.
- 3.2.7 Tracks nonconformance to completion.

3.3 MBTA Project Office (Project Manager)

- 3.3.1 Comprises of the Project Manager and assigned Project Coordinator, Budget Analyst and Project Controls staff, and the Resident Engineer during the construction phase.
- 3.3.2 Verifies the accuracy of the NCR.
- 3.3.3 Coordinates the Quality review of proposed corrective action with QA/QC and, when required, with the Office of the Chief Engineer both formally and informally as required to expedite the process as applicable.
- 3.3.4 Reviews, and accepts or rejects the proposed disposition.

3.3.5 Negotiates credit for work accepted that does not comply with contract documents or Basis of Design.

3.4 MBTA Office of the Chief Engineer (OCE) or Designee

3.4.1 Coordinates review with Operations, Engineering and Maintenance.

3.4.2 Determines, within five working days of receipt, whether review is required. Complex evaluations, as determined by the OCE, may require additional time for review.

3.4.3 If review is required, advises Project Office if resolution is acceptable as proposed, or if modification is required.

3.5 MBTA Field Office (Resident Engineer)

3.5.1 Creates NCR if not initiated by Construction Contractor or Design Team (See 3.1) .

3.5.2 Monitor the initiation of the NCR process described in 3.1.

3.5.3 Reviews NCR to confirm accuracy.

3.5.4 Inspect/witness testing, and document results to verify corrective action completed in accordance with approved plan.

3.5.5 Verify and document continued implementation of preventive action.

3.5.6 Notify Construction Contactor of lapses in preventive action.

3.6 MBTA QA/QC (Director of Construction QC or PM/CM Quality Manager as applicable)

3.6.1 Creates NCR if not initiated by Construction Contractor, Design Team, or MBTA field Office (See 3.1) .

3.6.2 Verifies QC processes proposed as part of resolution are appropriate.

3.6.3 Audits future work to verify preventive action has been implemented.

3.6.4 Audits and reports trends of nonconforming work to aid process improvement.

3.6.5 Develops lessons learned and shares with Project Controls.

3.7 MBTA QA/QC Construction Quality Audit Manager (when PM/CM Quality team is used)

3.7.1 Audits PM/CM Quality team to verify compliance with section 3.7.

3.8 PMIS Team

3.8.1 Provides data for lessons learned for all NCRs.

3.8.2 Works with QA/QC and Project Controls to report lessons learned in a format that provides organized, useful, and easily available information.

4.0 Instructions

Please navigate to the [PMIS Quick Reference & User Guides](#) if you need further assistance.

4.1 Initiation

- 4.1.1 The party that detects the nonconforming material or work will immediately notify the Construction Contractors Quality Manager to prevent it from becoming part of the final work.
- 4.1.2 The Construction Contractor shall segregate or clearly mark nonconforming item(s) to ensure it is not incorporated into the work.
- 4.1.3 The General Contractor's Quality Manager shall initiate the MBTA Nonconformance Report within 24 hours of detection of the nonconformance.
- 4.1.4 Each party identified in section 3.1 shall have 24 hours to initiate a draft NCR, after which the next party in order of precedence shall become responsible.
- 4.1.5 The Field Office (Resident Engineer) will monitor nonconforming work to ensure responsible parties initiate NCRs within the proscribed timeframe.
- 4.1.6 If the initiator is a party other than the Construction Contractor, they shall
 - ❖ Include a description of the nonconforming element with reference to the contract documents, code and or standards that specify the acceptance criteria.
 - ❖ Forward the draft NCR to the Project Manager for the Construction Contractor disposition proposal.

4.2 Evaluation of Corrective Action

- 4.2.1 The Construction Contractor QC Manager shall investigate the root cause of the nonconformance, propose both a corrective action plan and a propose a specific preventive action plan to minimize potential for reoccurrence, and document them in the NCR.
- 4.2.2 The Construction Contractor QC Manager shall send the NCR to the Project Manager for Design Team review ONLY when it contains both proposed corrective actions to address the nonconformance AND proposed preventive actions to minimize the potential for reoccurrence.
- 4.2.3 The Construction Contractor's corrective action plan shall propose one of the following:
 - ❖ **Accept As-Is** – The work does not meet contract document requirements but an engineering evaluation has determined it may be used without impact to Basis of Design. This requires OCE notification.

- ❖ **Rework** – The work can be corrected or completed and brought into full compliance with contract documents using additional, but previously approved, methods. Examples include re-machining, re-installation, or reassembly. This requires Project Office approval.
- ❖ **Remove and Replace (Reject)** – The work is deleted and replaced in accordance with the contract requirements. This requires Project Office approval.
- ❖ **Repair** – Construction work or material can be made to conform to Basis of Design but will not fully comply with original contract requirements. This requires OCE notification.

4.2.4 The Design Team shall then review the Construction Contractor’s proposed actions within 5 business days unless otherwise mutually agreed upon by the Design Team and MBTA Project Office and shall provide recommendations for MBTA approval.

- ❖ If the proposed actions do not comply with contract documents or project Basis of Design, the Design Team shall forward the NCR to the PM who will return the NCR to the Construction Contractor for revision.
- ❖ If the proposed actions do meet the contract documents or Basis of Design, the Design Team shall send the NCR to the Project Office.

4.2.5 The Project Office shall review the NCR.

- ❖ If the Project Office agrees the proposed actions comply with contract documents or Basis of Design, they will coordinate review with OCE, or forward to MBTA QA/QC if OCE review is not required, as defined in 4.2.3.
- ❖ If the OCE rejects the NCR, the Project Office will return the NCR to Design Team to coordinate revision.

4.2.6 The Project Office shall negotiate credit for work accepted that does not fully meet the contract document requirements.

4.2.7 The Design Consultant shall update the Safety Certification Plan, if required.

4.3 Preventive Action

4.3.1 MBTA QA/QC (or PM/CM Quality Team) shall review the proposed actions.

- ❖ If the QC procedures associated with the proposed actions are consistent with contract document requirements and approved quality control plan, the NCR is sent to the MBTA PM for action.

- ❖ If the QC procedures associated with the proposed actions are not consistent with contract requirements or approved quality plan, the NCR is returned to the MBTA PM to coordinate revision by the Design Team.

- 4.3.2 The Construction Contractor coordinates inspection of the executed corrective action with the MBTA Field Office.
- 4.3.3 When the approved corrective action is complete and has been verified through QC inspection/testing of repair/rework, the Construction Contractor QC Manager and MBTA Resident Engineer sign the report to close the NCR.
- 4.3.4 The MBTA Field Office monitors and verifies Construction Contractor's implementation of preventive action.
- 4.3.5 MBTA QA/QC performs audit and inspection to verify compliance with Construction Contractor's implementation of preventive action.

5.0 Exceptions

No exceptions.

6.0 Document History

Document Owner: Capital Programs Support – Quality Assurance/Quality Control (QA/QC)

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7.0 Appendices

7.1 Templates

- ❖ N/A

7.2 Reference Documents

- ❖ [Federal Transit Administration Quality Management System Guidelines Element 11 Nonconformance, and Element 12 Corrective Action](#)