1.0 Policy

The Contractor is required to employ the means and methods and quality control necessary to achieve the contractual quality requirements. The Project CM team monitors construction services and activities to assure that the Contractor is complying with the quality requirements of the Contract Documents.

Documentation of Construction Quality Management activities by the Contractor and the Project CM team are to be maintained as a part of the project record.

This SFPUC Infrastructure CM Procedure applies to all personnel working on SFPUC Infrastructure projects during construction to the extent that their work is affected by this CM Procedures and does not conflict with specific SFPUC policies or the Contract under which the Work is executed.

2.0 Description

This SFPUC Infrastructure CM Procedure defines the requirements, tasks, sequence, and responsibilities for the planning, execution, and documentation of Construction Quality Management during construction. This CM Procedure also describes how issues of deficiency or non-conformance will be managed and resolved.

The purpose of this CM Procedure is to establish a standardized Construction Quality Management process to be employed during construction.
3.0 **Definitions**

3.1 **Contractor’s Quality Contractual Obligations**

The Contractor is responsible for quality and inspection as specified in the Contract Specification General Conditions Section 00 72 00-8.02, General Requirements (Division 1) and as found in Divisions 2 through 48.

3.1.1 The Contractor shall additionally provide the necessary contractual notification of readiness for, and safe access to the work areas for the “Structural Tests and Special Inspections” as required to be carried out by the SFPUC in accordance with the requirements of Chapter 17 of the latest version of the California Building Code (CBC).

3.1.2 The Contractor shall further note that in accordance with the requirements of the latest version of the CBC Chapter 17, the referred to “Special Inspections” are “in addition to and not substitutes for” those measures made as part of the Quality Control obligations of the Contractor as part of the Contract with the SFPUC.

3.2 **Corrective Action Report (CAR)**

The CAR is one of two possible responses by the Contractor to the Nonconformance Notice (NCN). A response must be transmitted to the RE within five (5) working days of the receipt of the NCN.

3.2.1 A CAR is one possible response that describes the corrective action the Contractor intends to take to correct the non-conforming work in accordance with SFPUC Infrastructure CM Procedure No. 029, Non-Conformance Notice.

3.2.2 The second possible response by the Contractor is to reject the NCN and provide an explanation for the rejection.

3.3 **Daily Inspection Report**

The Daily Inspection Report is a report prepared by the Construction Inspector(s) at the end of each work day or shift or prior to the next shift at the beginning of the following work day. The Daily Inspection Report provides the daily record of observations of the Contractor’s progress work activities, conformance to the Contract requirements and significant events occurring at the work site. The report should include details of differing site conditions or other events that affect the Contractor’s scheduled activities.

3.4 **Contractor’s Daily Construction Report**

A report issued each work day by the Contractor, in accordance with Contract Specification General Conditions Section 00 72 00, to the RE that provides progress information, status, and results of all quality activities and applicable test results.
3.5 **Supplier Quality Surveillance (SQS) Plan**

The SQS Plan is another component of Quality Management which is performed at the supplier, manufacturer or fabrication facility in accordance with SFPUC Infrastructure CM Procedure No. 032, SQS Plan and Surveillance Process.

3.5.1 The SQS Plan is developed prior to purchase and furnishing of equipment or material for the Contract work by the SQS Manager. A typical SQS Quality Assurance Form is provided in Attachment 028–3.

3.6 **Quality Deficiency**

Quality Deficiency is defined as documentation, drawings, material, equipment or work not conforming to the specified requirements or procedures.

3.6.1 A Quality Deficiency should be communicated to the Contractor at the time it is observed and documented in the Daily Inspection Report.

3.7 **Special Inspections – CM Role**

Special Inspections will be part of the CM team’s work plan which should include the following requirements to be acceptable and successful:

3.7.1 Review the Structural Information sheets as part of the Structural Drawings for the project. The Structural Engineer has listed these Special Inspection requirements under the heading “Special Inspections”.

3.7.2 Determine the discipline, level of effort and whether the inspection(s) are periodic or continuous as defined by the code, and coordinate the performance period for the implementation in conjunction with the approved project CPM Schedule.

3.7.3 Determine the availability of the type of resources necessary to carry out the “Special Inspections" for the particular project.

3.7.4 The performance of any Special Inspection by the Owner or designated Owner’s representative in no way relieves the CM and/or the Contractor from their respective contractual responsibilities under the agreements.

3.7.5 The CM must prepare documentation of all Special Inspections, including test data, so they can be communicated to the Structural Engineer.

3.8 **Quality Non-Conformance Documentation**

Quality Non-Conformance is a quality deficiency that the Contractor has not or cannot correct within a reasonable period of time. Quality Nonconformance requires written notice from the RE to the Contractor.
3.9 **Construction Management Information System (CMIS)**

The Construction Management Information System (CMIS) is an on-line management tool for the processing of contract documents based on established SFPUC Infrastructure CM Business Processes. It serves as a tool for effective storage and retrieval of various documents generated during a construction project. Processing of Quality Management documents will utilize the CMIS.

4.0 **Responsibilities**

4.1 **Contractor**

The Contractor is responsible for providing the Work to meet all of the requirements of the Contract. The Contractor is responsible for Quality Control and Material Testing (as required by the Contract), and for providing verification that the products and services meet these requirements.

4.2 **Construction Management Bureau (CMB) Manager**

The CMB Manager manages the Construction and Closeout Phases of all Projects.

4.2.1 The CMB Manager can authorize third party participation for Supplier Quality Surveillance of Contractor materials and equipment.

4.3 **Lead Construction Inspector**

The Lead Construction Inspector assists the RE with planning for inspections and resources, assesses performance of the Contractor in accordance with the Contract, reviews and compiles Daily Inspection Reports and monitors resolution and closeout of deficiencies and nonconformance.

4.4 **Construction Inspectors**

The Construction Inspectors assure that the construction work is performed and completed in accordance with the Contract Documents and conduct periodic observations and inspections of the work, monitor the Contractor’s quality progress, and coordinate field sampling and verification testing for quality.

4.4.1 Various specialty discipline inspectors will be assigned as needed for the specific work activities. Disciplines may include special inspection, civil, piping, welding, mechanical, coatings, electrical/ instrumentation, and process SCADA/ automation. Construction Inspectors report to the Lead Construction Inspector.

4.4.2 Construction Inspectors are responsible for preparing Daily Inspection Reports and for entering data into the CMIS Daily Inspection Report module.
4.4.3 The Construction Inspectors are NOT the independent third party SQS Surveillance personnel performing quality assurance services at the Vendor’s fabrication facilities.

4.5 **Resident Engineer (RE)**

The RE manages the construction contract, verifies that the construction work is completed in conformance to the Contract Documents, and determines when contractual action is necessary to bring the Contractor into compliance. The RE is the single point of contact with the Contractor and is the designated “City Representative” as defined by the Contract Documents.

4.6 **Project Engineer (PE)**

The PE oversees the development of the technical specifications and the quality requirements specified therein. The PE is also responsible for defining the quality and performance requirements for vendors providing SFPUC purchased and furnished materials and equipment, the storage requirements, and the requirements for acceptance and verification by the Contractor.

4.6.1 The PE participates in final inspections, as requested by the RE, and serves as the primary point of contact with the Engineer(s) of Record for the project.

5.0 **Implementation**

5.1 **Inspection and Non-Compliances**

5.1.1 Construction Inspectors will provide inspection of their respective portions of the work and prepare Daily Inspection Reports utilizing the CMIS. The Construction Inspectors will collect and organize test results, take progress digital images, and record observations about the execution of the work. Construction Inspectors are required to document all quality deficiencies in the Daily Inspection Reports and notify the Contractor of same.

5.1.2 Deficiencies are noted in the Daily Inspection Report by the Construction Inspector on the day they are observed. If the Contractor corrects the deficiency, the Construction Inspector re-inspects the work, enters the results in a subsequent Daily Inspection Report.

5.1.3 When a deficiency is not corrected within a reasonable time or when it is expected that the progress of the work will be impacted, the RE will issue a NCN to the Contractor through the CMIS. A NCN records a breach of quality and as such is issued to the Contractor. The Contractor must respond with a CAR or written rejection within five (5) working days. The proposed CAR must be approved by the RE before implementation.
5.2 **Materials Testing**

The Contractor is required to perform materials testing to conform to the requirements of the Contract Documents and provide records of all tests to the RE. The Construction Inspectors may perform periodic independent materials testing to verify the results by the Contractor or when systemic quality problems dictate independent testing is needed.

5.2.1 In addition to regular testing, Construction Inspectors must take care to assure the materials being installed are the same as the tested samples.

5.3 **Verify Survey Control**

The Contractor is required to perform survey control during construction and to provide records of all surveys to the RE. The RE may establish independent control monuments and shall conduct independent surveys to verify the Contractor’s results in accordance with SFPUC Infrastructure CM Procedure No. 017, Pre-Construction and Post-Construction Site Surveys and CM Procedure No. 018, System Testing and Startup.

5.4 **Maintain Documentation and Records**

5.4.1 Implementation of Quality Management requires the generation, maintenance, and consolidation of reports, documents and records of the actions taken to verify that the quality requirements are complied with and, where needed, corrective action is taken. Responsibility for the generation of these records lies primarily with the Construction Inspectors, testing firms, and in-factory inspectors, with support from the Lead Construction Inspector and oversight by the RE.

5.4.2 Quality documentation includes the Contractor’s quality plans and reports required by the Contract, and the plans and reports of inspections, testing and audits performed by the CM team.

5.4.3 The RE is responsible for the maintenance of all project quality records and files, including results of quality audits and corrective actions.

5.5 **City Furnished Pre-Purchased Materials and Equipment**

5.5.1 Quality requirements for Vendors providing City furnished and pre-purchased materials and equipment will be defined by the PE in each Purchase Order. These requirements shall include site storage, acceptance inspection and verification by the Contractor per the Contract Documents in accordance with SFPUC Infrastructure CM Procedure No. 015, City Furnished Materials and Equipment and SFPUC Infrastructure CM Procedure No. 032, SQS Plan and Surveillance Process.

5.5.2 The PE is responsible for defining the requirements for the Quality Plan required from each supplier.
5.5.3 If independent third party Factory Acceptance Testing of City furnished materials or equipment is required, the PE will define the scope and the requirements, and secure the resources.

5.5.4 SQS personnel will inspect the City furnished materials and/or equipment materials and equipment at the Vendor’s fabrication facility in accordance with the SQS Plan, and will then prepare the SQS Report.

6.0 **Other Procedural Requirements**

None

7.0 **References**

7.1 **Technical Specifications**

Section 00 72 00 General Conditions
Section 00 73 00 Supplementary Conditions
Section 01 33 00 Submittal Procedures
Section 01 45 00 Quality Control
Section 01 69 50 Shutdowns
Section 01 75 60 Test and Start-Up

7.2 **SFPUC Infrastructure CM Procedures**

No. 015 City Furnished Materials and Equipment
No. 017 Pre-Construction and Post-Construction Site Surveys System Testing and Startup
No. 018 System Testing and Startup
No. 019 Shutdown/Specific Condition Coordination
No. 020 Project History, Lessons Learned
No. 029 Non-Conformance Notice (NCN)
No. 030 Daily Inspection Reports
No. 032 SQS Plan and Surveillance Process

7.3 **Others**

Construction Management Plan
Supplier Quality Surveillance (SQS) Plan (for each project)
California Building Code, California Code of Regulations Title 24, Chapter 17 Structural Tests and Special Inspections
8.0 **Attachments**

028 - 1  Supplier Quality Surveillance (SQS) Plan – *Sample*

028 - 2  Document Distribution List for CMP No. 028

028 - 3  Revision Control Log
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<PPP CM QA Inspector> number of trips based on number of manufactures

Name City and/or Eng.

Number of trips based on number of manufactures

WSIP
SUPPLIER QUALITY SURVEILLANCE PLAN

Date Prepared: 3-7-09
Date Updated: ______

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SFPUC Infrastructure CM Procedure No. 028, Revision 0, Page 10 of 14
### Supplier Quality Surveillance (SQS) Plan – Sample

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#### Surveillance Assignment/Note

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- (Certified NAICE Coatings Inspector)
- Number of trips based on number of manufacturers

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**Estimated Budget** (Person) & $ Estimate

- **Number of Items:**
- **Number of Part:**
- **Total estimated budget:** $0

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**Total Estimated Budget** (Persons) & $ Estimate

- **Number of Items:**
- **Number of Part:**
- **Total estimated budget:** $0
The following personnel listed (by project position or responsibility) for Documents Distribution is a general guideline for specific CM Procedure. It is the responsibility of the ADCS to confirm and as necessary revise this list as appropriate for the specific project needs. The OE shall approve these distribution changes.

The guidelines for hardcopy document distribution is as follows:

1. Individuals, without CMIS access, who attended a specific project meeting.
2. Individual, without CMIS access, who was mentioned or designated for action in a specific project meeting.
3. Individual, without CMIS access, who has management oversight responsibilities to ensure the implementation or completion of project action.

REPORTS:
- Daily Inspection Reports
- Daily Reports
- Supplier Quality Surveillance (SQS) Reports

DISTRIBUTION:

Project Field Personnel – Information Only, Not Distribution
- RE, Lead Construction Inspector, ADCS

Construction Management Bureau
- Construction Manager

Project Management Bureau
- PM (SQS Reports only)

Engineering Management Bureau
- PE (SQS Reports only)
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