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Volume 11, Chapter 5

Quality Control Procedure

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1.0 PURPOSE

The purpose of this procedure is to identify the approach to quality for operations and maintenance at existing government facilities, including quality control (QC) activities, and assigned responsibilities for its achievement.

For the purposes of this procedure, the Project Management Company is the EPMO (Entity Project Management Organization) appointed by the Entity.

2.0 SCOPE

This procedure applies to work performed at all Government facilities throughout the Kingdom of Saudi Arabia. Furthermore, it applies to management, control, approval and conformance of all facility related activities as outlined in their respective contract documents.

3.0 DEFINITIONS

Definitions	Description
Enterprise Content Management System (ECMS)	An information management and collaboration platform for managing and controlling Project documents and Entity records
Entity	A Saudi Government organization which is responsible for the delivery of government funded infrastructure construction projects.
EPMO (Entity Project Management Organization)	An Entity Project Management Organization, this is an integrated team that comprises the Entity and its Project Management Company responsible for managing all the Entity's projects.
Facility Quality Department	Department within the Facility Management Company that provides the approval of and subsequent monitoring of the Construction Contractor's Quality Management Plan. This involves necessary checks of Quality Assurance processes and approvals of Quality Control inspections and tests in accordance with the Construction Contractor's approved Inspection and Test Plan
Facility Contracts Department	Department within the Facility Management Company that is responsible for administrating Contracts.
Facility O&M Department	Department within Facility Management Company that is responsible for Operations & Maintenance activities/operations.
Facility Engineering Department	Department within the Facility Management Company that is responsible for Engineering or design activities/operations.
Independent Testing Laboratory (ITL)	Provides independent third party evaluation of the Works to confirm the contract quality standards are met. The ITL reports directly to the Facility Quality Department.
Inspection and Test Plans (ITPs)	A document that outlines specific inspection and testing requirements relevant to a specific process, which is used to monitor the work installation quality. The ITP identifies the items, materials and work to be inspected or tested; by whom, and at what stage or frequency; as well as Hold (H) and Witness (W) points, and references to relevant standards.
O&M	Operation and Maintenance
Quality Assurance (QA)	Part of quality management focused on fulfilling quality requirements. Quality assurance is a way of preventing errors and avoiding problems when delivering solutions or services to customers.
Quality Control (QC)	Part of quality management focused on fulfilling quality requirements. Typically, quality control activities include the physical inspection of systems, structures, and components, during fabrication, installation and turnover regardless of the performing organization

Definitions	Description
Quality Management Plan (QMP)	A facility document that includes specific contract quality requirements and governing quality codes and standards. It defines the quality assurance processes and quality control monitoring and inspection that will be implemented to achieve verification of the required contract quality standards.
RFI	Request for Inspection
Surveillance	The act of monitoring, witnessing or observing to verify whether items or activities conform to specified requirements. As used in this procedure, 'surveillance' is an audit of a portion of a contractor's operation. A surveillance examines a smaller number of items than a total system audit.

4.0 REFERENCES

- EPM-KCE-PR-000002 - Project Construction Technical Query Procedure
- EPM-KCE-PR-000003 - Project Construction Field Change Document Procedure
- EPM-KCQ-PR-000006 - Project Construction Control of Non-Conforming Items Procedure
- EPM-KCM-PR-000001 - Project Construction Field Material Management Procedure
- EPM-KCQ-PR-000004 - Project Construction Control of Material Testing Procedure
- EPM-KCC-PR-000003 - Project Construction Completions and Turnover Procedure
- EOM-EQA-PR-000001 - Quality Assurance Audit Procedure
- EOM-EQA-PR-000002 – Non-Conformance and Corrective Action Procedure

5.0 RESPONSIBILITIES

5.1 Facility Contractor

The Facility Contractor is responsible for the preparation of a facility specific Quality Management Plan (QMP) to manage Project Quality Assurance (QA) and Quality Control (QC) activities in accordance with the defined requirements of the contract and the relevant specifications and drawings of the facility.

The Facility Contractor must submit a QMP to the Facility Quality Department for approval before Operation & Maintenance (O&M) works commence at the facility.

The Facility Contractor is responsible for administering the O&M of the facility in accordance with the QMP and for the retention of relevant documentation in line with the quality management requirements.

5.2 Facility Quality Department

The Facility Quality Department is responsible for the approval of the Facility Contractor's QMP. The contents of a QMP are identified in Section 6.1.2 below and the Facility Quality Department shall ensure that all these components are detailed in the QMP submitted for approval by the Facility Contractor.

The Facility Quality Department is responsible for the overall quality program and for initiating an audit plan for the facility.

The Facility Quality Department shall ensure that O&M quality control requirements, as detailed in the contract specification, are emphasized in the O&M work so that the Facility Contractor provides for qualified Quality Control personnel at the facility.

The Facility Quality Department shall:

- Undertake the routine duties of monitoring the Facility Contractor's QC activities for compliance with the drawings, specifications and the approved Facility Contractor's QMP.

- Monitor the implementation of the Facility Contractors QMP including:

a. All technical decisions related to the acceptability of materials and work methods are incorporated into the final O&M work product.
b. The assurance that all relevant resources are properly trained and familiarized with standard project procedures, applicable specifications and testing requirements. Verify that they understand their responsibilities in applying these to their work assignments.
c. The use of the Inspection and Test Plans (ITPs) and Facility Inspection Checklists based on the contractor's scope for a specific project.
d. Inspection and release of hold points established in the Facility Contractor's Method Statements and the QMP.
e. Coordination of the activities of the contracted Independent Testing Laboratories (ITL), if applicable, to confirm the Facility Contractor's test results for materials incorporated into the O&M activities.

5.3 Facility O&M Department

The Entities' Facility O&M Department is responsible for providing any necessary support to the Facility Quality Department, particularly in respect to inspection of the works upon receipt of a Request for Inspection (RFI) from the Facility Contractor.

6.0 PROCESS

6.1 General

6.1.1 General

The Facility Contractor is responsible for delivering O&M to the quality standards specified in the contract requirements. To ensure the requirements are consistently met, the Facility Quality Department will undertake a system of checks and balances during facility O&M to provide assurance that the specification requirements will be met.

All concerns noted during routine quality activities are expected to be resolved at the lowest level of authority possible. Issues that cannot be resolved at a lower supervisory level will be referred to the Facility Contractor's senior management by the Facility O&M Department. The respective party will resolve these issues in accordance with the terms of the contract, including using a Stop Work Order, if necessary.

6.1.2 Quality Management Plan

The QMP defines the acceptable contract quality standards and describes how this level of quality of deliverables and work processes will be achieved. The Quality Management activities will ensure that:

- O&M work is performed to meet the required contract quality standards
- Work processes are performed efficiently and as documented
- Non-conformances found are identified and appropriate corrective actions are taken

The QMP applies to all O&M work processes. Quality Assurance activities monitor and verify that the processes used to manage the O&M are followed and are effective. Quality Control activities monitor and verify that O&M activity meet defined quality standards.

The QMP describes the following quality management components:

- Quality objectives and requirements
- Key O&M processes to be reviewed for satisfactory quality level
- Quality standards

- Quality Assurance activities
- Quality Control activities
- Quality roles and responsibilities
- Quality tools
- Plan for reporting quality assurance and control problems.

The purpose of having a QMP is to ensure Entity expectations in terms of quality are understood and it will facilitate proactive quality activity to meet those expectations.

The QMP assists the Facility Quality Department to determine if the O&M activities are being performed to an acceptable quality level and if the facility processes are effective and properly applied.

6.2 Facility Materials

6.2.1 Materials Receipt

Prior to the start of maintenance work, the Facility O&M Department shall verify that the Facility Contractor has, as a part of the approved QMP, method statements, procedures, and the necessary forms for the receipt, handling and storage of materials. These documents shall satisfy the requirements of the contract and specifications.

6.2.2 Materials Approval

Prior to placement of firm procurement orders for materials, the Facility Contractor shall submit necessary documents for approval of materials. This approval must be given by the Facility Engineering Department. The information should be submitted to Facility Document Control to be recorded in the Enterprise Content Management System (ECMS) and distributed to the Facility O&M Department and Facility Quality Department accordingly.

After material is received and delivered on site, the Facility Quality Department shall inspect materials to confirm compliance with the quality standards. A Materials Receipt Inspection Report form for the inspection of received materials can be found under **Attachment 1**- Facility Material Receipt Inspection Report Template

6.3 Facility Verification

6.3.1 Inspection and Test Plans (ITPs)

The Facility Contractor must prepare and submit Inspection and Test Plans (ITPs) for all elements of the maintenance work, prior to work commencement. Details of an ITP form and instructions on how to complete it are provided in **Attachment 3** - Facility Inspection and Testing Form Template.

ITPs shall document the quality steps that the Facility Contractor will undertake, including any hold points established and agreed with the Facility Quality Department / Facility O&M Department or any other Third Party that will be involved with the monitoring of the performance of the O&M work.

The Facility Contractor works with the Facility Quality Department to define all the verification activities to be included in ITPs as a part of the Facility Contractor's QMP.

When determining the type, timing, and frequency of inspections and tests, the Facility Quality Department / Facility O&M Department will consider the following items:

- The complexity of the scope
- The accessibility of the installation for inspections and sampling
- Timeliness of inspections and tests to avoid
- Increase safety risks

- Rework
- Negative impact on construction schedule
- Loss of accessibility for rework
- Consequential damage to other elements.

ITPs submitted for review and acceptance should include a checklist for each step, containing the information detailed as shown in **Attachment 3** - Facility Inspection and Testing Form.

6.3.2 Inspections

Where the ITP defines Witness or Hold Point inspections, the Facility Contractor shall prepare and submit a Request for Inspection (RFI) form. **Attachment 4** - Facility Inspection Request Form Template provides an illustration. RFI Forms should be submitted through the ECMS within seven calendar days, or per the contract, prior to the inspection.

Note: Planned inspections by the Facility Quality Department / Facility O&M Department for all routine activities should take place after the Facility Contractors internal inspection has been completed. The Facility Contractor should only submit the RFI after it has undertaken its own initial successful inspection

The Facility Quality Department may arrange for an independent testing agency, if required, to participate with inspection, sampling, or testing.

6.3.3 Surveillance

The Facility Quality Department will perform surveillance of field activities by recording quality observations daily, weekly, monthly, upon completion of work, or as determined to ensure compliance with Facility Contractor's Quality Assurance. This surveillance does not require the issue of a RFI from the Facility Contractor. A Facility Surveillance Report form is shown in **Attachment 2** – Facility Surveillance Report Template.

As part of their surveillance activities, the Facility Quality Department will review the Facility Contractor's records for completeness during the O&M activities. Such records may include:

- Document control processes
- Certification compilations
- Non-conformance Reports (NCRs)
- Technical Queries (TQ)
- Field Change Documents (FCDs)
- Training activities
- Warehouse/storage control
- Handling and storage of materials

6.4 Punch List

The Facility O&M Department shall prepare and maintain a Punch List for outstanding work and actions, as the O&M work is performed. The Facility O&M Department shall follow the requirements of Procedure EPM-KCC-PR-000003 - Project Construction Completions and Turnover Procedure when maintaining the facility Punch List.

6.5 Records Control System

As a part of the Quality Assurance process, the Facility Quality Department will undertake reviews of the Contractor's QMP, Procurement Plans, ITPs and other quality related documents.

The Facility Quality Department will carry out a program of audits and surveillances to the above documents to verify compliance by the Facility Contractor and provide feedback to the Facility O&M Department on the status of compliance in accordance with facility procedures.

The Facility Quality Department will ensure that the Facility Contractor's Quality Control activities and Inspection and Test Plans are implemented effectively to ensure required contract quality standards

The Facility Quality Department shall confirm the effective operation of the Quality Assurance and Quality Control systems by establishing and maintaining a "Records Control System" to provide evidence of conformity to the above requirements. All quality-related records shall be stored in the ECMS. (e.g. ITPs, RFIs, Surveillance Reports, Material Receipt Inspection Reports, etc.)

7.0 ATTACHMENTS

1. EOM-EQC-TP-000001 - Facility Material Receipt Inspection Report Template
2. EOM-EQC-TP-000002 - Facility Surveillance Report Template
3. EOM-EQC-TP-000003 - Facility Inspection and Testing Form Template
4. EOM-EQC-TP-000004 - Facility Request for Inspection Form Template

Attachment 1 - EOM-EQC-TP-000001 - Facility Material Receipt Inspection Report Template

Receipt No.	Receipt Date:	PO No.	
Vendor:		PO Title:	
Notes:			

Package No.	Item No.	Material Code	Tag No.	Item Description	Supplier Part No.	UoM	Quantity	Location of Storage	Remarks

Received by:

(Print Name) Facility Quality Department	(Signature) Facility Quality Department	(Print Name)Facility Construction Department	(Signature)Facility Construction Department

Attachment 2 - EOM-EQC-TP-000002 – Facility Surveillance Report Template

SITE SURVEILLANCE REPORT

CONTRACTOR:	JOB No.	DATE:
REPORT No.	REF. SPEC. / PROC. / DWGS:	SHEET: OF

DESCRIPTION OF ACTIVITY BEING MONITORED:

LOCATION:

OBSERVATIONS / COMMENTS:

NCR GENERATED: ☐ YES ☐ NO NCR No. ____________________

REPORT Prepared by:

(Print Name) Facility Quality Department	(Signature) Facility Quality Department	(Date)

REVIEWED by:

(Print Name) Facility Quality Department	(Signature) Facility Quality Department	(Date)

Attachment 3 - EOM-EQC-TP-000003 - Facility Inspection and Testing Form Template

(Attachment 3 - Page 1 of 3)

Logo 1		Title/Description: 2	ITP No. 3 Rev. No. Page of
Unit/Area: 4	Discipline: 5	Description: 7	Equipment/Tag No. 6

Activity No.	Activity Description	Inspection/Test Requirements		Reference Documentation		Method of Verification (see Legend)			Demonstrated Evidence Report/Checklist Reference No
		Test or Inspection Performed	Stage/Frequency	Code/Spec/Etc.	Acceptance Criteria	Construction Contractor QC	Construction Contractor	Site Quality Department	
8	9		10		11		12		13

SAMPLE

14 **Legend**: **I** – Inspection; **T** – Test; **W** - Witness Inspection Point; **H** - Mandatory Hold Point For Inspection; **R** - Document Review

Facility Contractor (Date & Signature/Stamp No.)	**Facility Quality Department** (Date & Signature /Stamp No.)	**Other (Customer, Third Party)** (Date & Signature/Stamp No.)
	15	

Attachment 3 - EOM-EQC-TP-000003 - Facility Inspection and Testing Form Template

(Attachment 3 - Page 2 of 3)

Instructions for Completing ITP Forms Template

The following list refers to the annotation numbers illustrated on the ITP Form (Page 1 of 3 above).

Number	Description
1.	Standard header for ITPs. Appropriate logo and Facility Name to be shown here
2.	Title or description of the activity covered by the ITP, e.g., "Installation and Testing of Concrete"
3.	Refers to the following: • ITP No. • Revision No. • Page No.
4.	The unit or area number the ITP belongs to
5.	The applicable disciplines, e.g., Civil, Structural, Piping, etc.
6.	The equipment or tag number the ITP belongs to.
7.	A description of the item, equipment, placement type, etc. number(s)
8.	A sequential number starting with 1.0
9.	A brief description of the construction activity to be performed, e.g., Pre-pour activities
10.	The inspection/test activity to be performed, e.g., installation of rebar, forms, survey, slump test, etc., and frequency
11.	The document that requires the activity, e.g., code, standard, specification, procedure and the number and acceptance criteria
12.	Facility Contractor QC, Facility Contractor, Facility Quality Department inspection/test points (refer to Legend #14).
13.	Specific inspection/test/checklist forms associated with this ITP Inspection/test. Reference the form report number
14.	Legend defining the various inspection points (see page 3 of 3)
15.	Signatures by responsible parties signifying that all inspection and tests associated with this ITP activity have been identified

Attachment 3 - EOM-EQC-TP-000003 - Facility Inspection and Testing Form Template

(Attachment 3 - Page 3 of 3)

Inspection and Test Plan Template

C.1	The Facility Contractor has the primary responsibility for performing verification activities for their scope of work.
C.2	The Facility Contractor, Facility Quality Department, Facility O&M Department, Others can assign Hold and Witness points and the verification method to ITPs to provide objective evidence that the project requirements were met. H and W points are normally assigned when verification cannot be performed due to subsequent work processes.
C.3	When an **H point** is identified on the ITP, the Facility Contractor **cannot** proceed with the relevant activity until documented approval is provided on the associated form. A minimum **7-days notification, or per contract,** is required in advance of reaching the H point.
C.4	When a **W point** is identified on the ITP, the Construction Contractor **cannot** proceed with the relevant activity until documented approval is provided on the ITP (Refer to **Attachment 4** - Facility Request for Inspection Form Template). A minimum **7 calendar days notification, or per contract,** is required in advance of reaching the W point unless approved by the inspector.

HOLD POINT AND WITNESS POINT	
Hold (**H**)	Hold **points are designated as** "**H**" **plus the verification method.**
Witness (**W**)	Witness **points are designated as** "W" **plus the verification method.**
VERIFICATION METHODS	
Review (**R**)	**Review** is designated as **"R."** Review is the act of verifying that documentation is in compliance with project requirements.
Inspect (**I**)	**Inspect** is designated as **"I."** Inspection is the act of verifying (such as, examining, measuring, observing, reviewing, recording, etc.), that activities are in conformance with project requirements.
Test (**T**)	**Test** is designated as **"T."** Testing is the act of verifying (such as, Compaction, Non-Destructive Examination (NDE), Hydrostatic, Megger, etc.), to pre-defined values that activities are in compliance with project requirements.

Attachment 4 - EOM-EQC-TP-000004 - Facility Request for Inspection Form Template

REQUEST FOR INSPECTION FORM

RFI No.	REV No.	DATE:
CONTRACTOR NAME:		CONTRACT No.
AREA:	REFERENCE DOC/DWG No.	ITP NO. & ACTIVITY No.
ITEM TO BE INSPECTED:		
LOCATION:		
TYPE OF INSPECTION:	WITNESS:	HOLD:
ADDITIONAL INFORMATION/COMMENTS:		

REQUESTOR:

(Print Name) Facility Contractor | (Signature) Facility Contractor | (Date)

RECEIVED by: