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Project Quality Corrective and Preventative Action Procedure

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Table of Contents

1.0 PURPOSE

The purpose of this procedure is to describe the process for correcting noncompliant conditions or activities identified. In many cases these noncompliant conditions or activities are observed during Quality Assurance audits and surveillances. Additionally, this procedure describes the preventative action process that is used to eliminate causes of potential nonconformities in the future. This procedure does not apply to nonconforming field installation conditions that are typically identified during the Construction phase of a project and will be managed through the Control of Nonconforming Items process to document and track these conditions to resolution.

This procedure applies to the management and control of activities performed on all Infrastructure projects across the Kingdom of Saudi Arabia.

This procedure specifies the corrective action requirements applicable to personnel who manage, perform, verify or review work affecting quality of the project, whether employed directly or indirectly by the projects at all work locations.

The applicable requirements of this procedure shall be passed on to all suppliers and subcontractors to ensure that the desired quality of products and services are being provided.

2.0 SCOPE

Deficiencies discovered on project activities and in processes shall be identified, documented and corrected. Controls will be put in place to prevent the occurrence (or reoccurrence) of activities that are not in conformance with the project's quality requirements.

The project quality organization is dedicated to ensuring that the project objectives are met, and that services are coordinated and executed consistent with the Quality Management System (QMS) throughout the project's lifecycle.

The project quality organization is comprised of the Quality Assurance (QA) Department that includes the Project Quality Manager (PQM) and QA Engineers. The project QA Department has the overall responsibility for assuring project activities are performed in accordance with the project's approved policies, procedures, and instructions. This may be accomplished through the performance of reviews, monitoring, quality audits and surveillances of activities, including suppliers and subcontractors.

3.0 DEFINITIONS

Definitions	Description
AR	Auditee's Representative
Corrective Action (CA)	Form used for documenting and closing quality audit and quality surveillance findings. The management of the NCRs process is defined in the Quality Corrective and Preventative Action procedure.
Non-Conformance Report (NCR)	A form used to document a deficiency, nonconformity or any other undesirable current or potential situation
Controlling Document	The document (e.g. drawing, procedure, work instruction) used to control the work being performed
ECMS	Enterprise Content Management System
Entity	A Saudi Government organization which is responsible for the delivery of government funded infrastructure construction projects.
Nonconformity	A defect, deficiency or other condition adverse to quality. A structure, system, component or product that does not conform to specified requirements. Non-conformances identified during

Definitions	Description
	quality assurance audits are recorded as Non-Conformance Report's.
EXPRO	Government Expenditure & Projects Efficiency Authority
PQM	Project Quality Manager
Preventative Action	Action taken to eliminate the cause of a potential nonconformity or other undesirable condition
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 Management System	A system to ensure the quality is embedded into a project's work execution activities
Stop Work Order	A formal stoppage of work due to a safety, quality, environmental or other issue that could cause harm to personnel or equipment

4.0 REFERENCES

- EPM-EQ0-PR-000002 Project Quality Execution Procedure
- EPM-EQA-PR-000001 Project Quality Assurance Audit Procedure
- EPM-KCQ-PR-000006 Project Construction Control of Non-Conforming Items Procedure
- EPM-KCQ-PR-000005 Project Construction Quality Management System Procedure

5.0 RESPONSIBILITIES

5.1 Auditee (Assessee) or Auditee's Representative (AR)

- Provides information as requested by the Auditor (Assessor) to verify the nonconformity and complete the Corrective Action Notice (NCR)
- Identifies corrective actions to resolve the nonconformity
- Ensures that the root cause of the nonconformity has been identified and resolved through the corrective actions listed on the NCR.

5.2 Auditor (Assessor)

- Identifies a nonconformity
- Completes a NCR working with the Auditee and QA Department.

5.3 Project Manager

- Supports the Corrective Action (CA) process by encouraging team participation
- Provides support to the PQM in NCR validation and resolution
- Issues a Stop Work Order when a quality issue requires work to stop.

5.4 Project Quality Manager (PQM)

- PQM reports to the Project Manager

- Responsible for the overall management and oversight of quality functions and activities on the project.
- Assigns QA Engineers to support CA process
- Approves proposed NCR corrective actions
- Approves NCR completion
- Recommends the use of a Stop Work Order when required.

5.5 Quality Assurance (QA) Engineer

- QA Engineer repots to the PQM
- QA Engineer is independent from any other project team that they are responsible for auditing.
- Responsible for assessing all aspects of the project including engineering design, procurement, construction, and testing activities.
- Issues NCR number to Auditor upon request
- Supports Auditor's NCR initiation and development
- Provides verification that the NCR action items are complete
- Maintains the project's NCR Status Report
- Recommends the use of a Stop Work Order when required
- Ensures all relevant NCR documentation is stored in the Enterprise Content Management System (ECMS).

6.0 PROCESS

6.1 General

A flowchart of the Non-Conformance Report (NCR) process is included (**Attachment 1**).

This procedure shall be initiated when a nonconformity is identified. Nonconformities may be identified by a Quality Assurance (QA) audit or surveillance that uncovers the situation. However, any project employee may identify a nonconformity by using this process. This procedure designates all individuals that bring a quality issue to the PQM's attention as the Auditor.

Personnel that identify potential or actual adverse conditions during construction are responsible for notifying the condition to the PQM. These nonconformities will be documented and addressed in accordance with the Project Construction Control of Non-Conforming Items Procedure EPM-KCQ-PR-000006. All other construction nonconformities will be identified and resolved by using this Non-Conforming Items Procedure.

A Non-Conformance Report (NCR) shall be issued for an identified nonconformity that, if uncorrected, clearly has a potential negative impact on performance, product reliability, and reputation, compliance with contractual/regulatory commitments, safety (personnel, public or environment), schedule, or budget.

Examples of nonconformities for which a NCR shall be issued include, but are not limited to:

- Incomplete implementation of regulatory requirements and codes
- Non-fulfillment of contractual obligations including engineering, construction, environmental, safety & health requirements, as documented in drawings, specifications, work plans, etc.
- Non-compliance with quality program requirements
- Non-adherence to approved procedures
- Breakdowns or inadequacies in procedural systems required to produce the desired results in project deliverables (e.g. ineffective procedural interfaces)
- Procedural ambiguities requiring resolution.

6.2 Identification and Validation of Adverse Condition

During the identification phase, a potential nonconformity is discussed by the Auditor with the assigned Auditee's Representative (AR) as part of the discovery process which could be audits or surveillances.

This discussion will ensure that:

- the condition is based upon factual evidence
- the condition is understood
- the AR understands the condition
- The AR agrees (or otherwise) that a nonconformity exists.

During these discussions, new information may be provided by the Auditee's organization to determine if the nonconformity is accurate and valid.

During a QA Audit and prior to any Post-Audit Meeting, Auditors are responsible for coordinating with the QA Engineer to check that potential finding results they have recorded are consistent (or otherwise) with information provided or findings recorded by the rest of the Audit Team.

When it is confirmed by the Auditor that a nonconformity exists, the Auditor shall record the finding on a Non-Conformance Report (NCR) template (**Attachment 2**).

When there is any dispute or uncertainty over whether a nonconformity exists by those involved, the Auditor shall then refer the matter to the PQM who is considered the arbitrator relative to the nonconformity. The PQM's decision as to whether a condition is considered a nonconformity is to be taken as final.

When the QA Engineer determines that a nonconformity is of significant impact that should stop work from proceeding, they shall refer the matter to the PQM. The PQM shall determine the appropriate course of action to be taken consulting with the Project Manager. The most extreme measure would be to issue a formal Stop Work Order or other work suspension method that can only be imposed by the Project Manager.

6.3 NCR Initiation and Issuance

The Auditor completes the NCR (**Attachment 2**), listing the Controlling Document Title, Section, Revision and the NCR response Due Date as discussed and agreed to by the AR. Typical Controlling Documents are quality control plans, contracts, drawings, specifications, procedures, etc.

The Auditor transcribes the requirement from the relevant Controlling Document(s) and describes the nonconformity (i.e. the finding) based on the factual conditions obtained in the QA Audit or any other nonconformity observation identified by project personnel.

The QA Engineer shall assign a NCR number (e.g. 2017-001) and enter the required NCR information on the Non-Conformance Report (NCR) Register Template (**Attachment 3**).

Once the top portion of the NCR has been completed and signed by the Auditor, it will be issued to the AR to provide a CA response by completing the Corrective Action Statement section of the form and signing it acknowledging existence of the nonconformity and intention to rectify the condition by implementing the corrective actions identified in the NCR. The CA Statement should clearly state the corrective action to be taken and target completion date. The AR has fifteen (15) calendar days to complete the NCR and return it to the QA Engineer for processing. Evidence of any completed action is not required at the initial submission as it is recognized that proposed corrective actions may take longer than 15 days to perform. However, the intent of the proposed corrective action must be described in full on the NCR within 15 days. Furthermore, consideration of determining the root cause of the nonconformity should be given and applied to the corrective actions listed in the NCR.

If applicable, the Auditor shall issue the NCR to the Auditee's organization as part of the audit /surveillance reporting process. In other situations, the NCR will be issued upon its completion.

The QA Engineer shall ensure that a copy of the approved NCR is stored in the ECMS.

6.4 Corrective Action Implementation

The Auditee is responsible for completing the NCR's action items by the target date. Any delays to the completion date should be communicated to the QA Department so that the target completion date can be amended on the NCR Status Report.

Once the actions are completed, the AR completes the 'Corrective Action Verification' portion of the NCR form (see **Attachment 2**), and submits it to the QA Engineer for review and verification of the completed actions.

6.5 Non-Conformance Report Statement Verification

The QA Engineer is responsible for performing a review of the NCR (submitted by the organization responsible for the corrective action) and verifying completion of the corrective actions.

In determining whether the response to a NCR is satisfactory, the QA Engineer may carry out one or both actions:

- Perform a document review to assess if the information provided is sufficient to enable close-out of the NCR
- Perform a verification visit to the Auditee's project/premises to physically examine evidence and/or obtain statements from those involved.

In assessing responses to NCR solution submissions by the AR, the QA Engineer should consider if corrective actions undertaken by the Auditee have led to a detailed review of the nonconformity to ensure that a proper root cause analysis has occurred with the goal of preventing recurrence. If not, the NCR should not be closed until the proper analysis is performed.

If the NCR evaluation is found satisfactory by the QA Engineer:

- The Corrective Action Verification block is completed and signed by the PQM and the NCR is closed-out
- Copies of the closed NCR are sent to the Auditee's organization and filed in the ECMS.

If the QA Engineer finds the NCR response unacceptable, only partially acceptable or unsatisfactory, it is returned to the AR for additional action and subsequent re-submittal to the QA Engineer.

The QA Engineer shall update the Corrective Action Verification section of the NCR template indicating the date of the review and provide commentary on the reason why the NCR was not closed-out and what further evidence is required to support NCR close-out.

6.6 Non-Conformance Report Status Report

The PQM is responsible for reviewing the NCR Status Report each month. This report resides in the ECMS. A copy of the Status Report is typically finished at the end of each calendar year and a new NCR Status Report is started at the beginning of the next calendar year. Any incomplete NCRs will be added to the new Status Report for the next year in order to track them to completion.

The PQM shall determine and agree in conjunction with the relevant Auditor and members of department management on a suitable course of action for any NCR response or corrective action item that is overdue by more than 90 calendar days.

The responsible Auditee is ultimately responsible for ensuring that all NCR's under their jurisdiction are issued and closed-out in a reasonable time based on the nonconformity's severity of impact and urgency of resolution as determined by the PQM and Project Management.

6.7 Preventative Action

The organization responsible for completing the corrective action is also responsible for corrective action follow-up and verification to ensure that corrective actions remain effective over time and that all agreed preventive actions are implemented.

The QA Engineer monitors implementation of agreed preventive actions during successive audits or surveillances. Where preventive action has not been fully successful, the Auditor should pursue a further course of Corrective Action with the Auditee.

6.8 Preventative Action Process

The PQM is responsible for identifying and eliminating the causes of potential nonconformities with the objective of preventing their recurrence.

The purpose of the preventive action process is to pro-actively eliminate the causes of potential nonconformities to prevent their occurrence. The degree to which this is implemented is dependent on the potential effects of the observed problems. Normally NCRs are not issued for preventive action. The potential nonconformity is resolved through formal communication made to the responsible organization requesting actions be taken.

The main sources of information for assessing preventive action requirements are the outputs from the Entity Quality Management System such as:

- NCR Status Report reviews and NCR report analysis
- Supplier Bulletins, Technical and Quality Control documentation submittal reviews
- Project performance trends recorded in Quality Dashboards
- Key Performance Indicators
- Monthly Project Reports
- Area Project Review and Program Review meetings and results
- EXPRO Functional Reviews
- Feedback from the Entity
- Lessons Learned reviews.

When a potential nonconformity is identified, the PQM shall determine an appropriate course of action which may result in one or more of the following activities:

- Increased focus by QA Engineer on potential problem areas during audits or surveillances
- Increased surveillance by the QA Engineer (e.g. project-specific site visits to address or investigate the issue)
- Training and/or briefing programs by or to the QA Engineer and/or line management or the Auditee
- Issue of formal internal/external communications by the PQM (e.g. Monthly Quality Meetings, Bulletins, Email notifications)
- Introduction of new or revised project procedures.

The PQM or designee shall monitor implementation of preventive actions taken and where not fully effective will determine and pursue another suitable course of action.

6.9 Records

The following records shall be maintained in the ECMS by the QA Engineer:

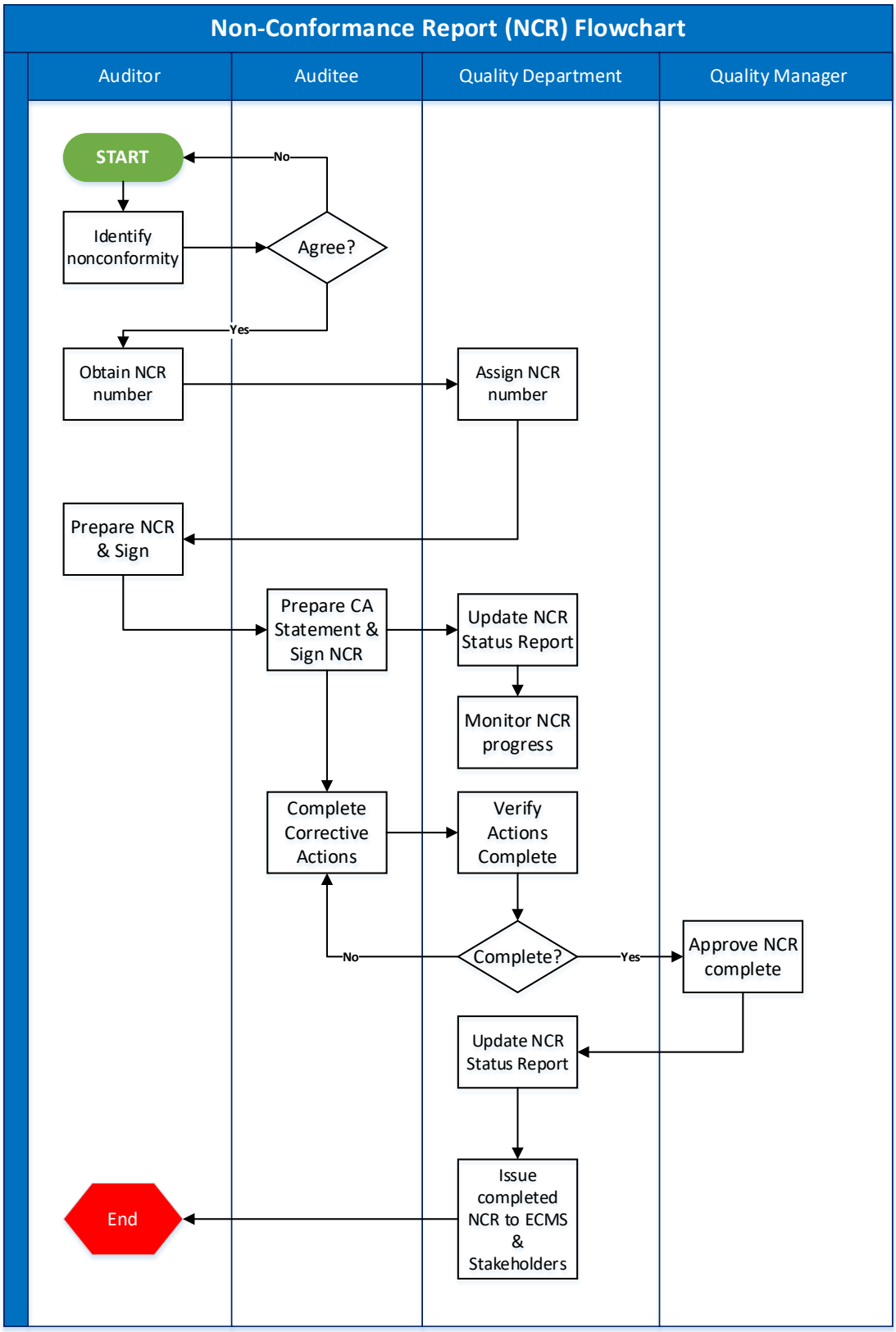
- Approved NCRs with required signatures
- NCR Summary Report (current year and past years)

- NCR Summary Report Qualitative / Quantitative Analyses
- Other related Qualitative / Quantitative Analyses performed by the project (e.g. Engineering metrics/reports, Construction metrics/reports, Project Controls performance reports).

7.0 ATTACHMENTS

1. Non-Conformance Report (NCR) Flowchart
2. EPM-EQ0-TP-000004 - Non-Conformance Report (NCR) Template
3. EPM-EQ0-TP-000005 - Non-Conformance Report (NCR) Register Template

Attachment 1 - Non-Conformance Report (NCR) Flowchart



Attachment 2 - EPM-EQ0-TP-000004 - Non-Conformance Report (NCR) Template

Non-Conformance Report (NCR)			
NCR Number :			
Department:	**Audit / Surveillance Ref#** (As Applicable) :	**Issuance Date: …../…../…..**	
		Expected Completion Date: …../…../…..	
Non-Conformance Report (NCR) Title:			
Assesse/Auditee:		**Assessor/ Auditor:**	
CONTROLLING REFERENCES(s)			
Number	**Rev**	**Title**	**Section**
FINDING:			
Signature (Assessor / Auditor):	**Name:**	**Date:**	
ROOT CAUSE:			
ACTION PLAN: *			
LESSON LEARNED NEEDED? ☐ **YES** ☐ **NO** **CORRECTION:** **CORRECTIVE ACTION STATEMENT:**			
Auditee Name:	**Signature:**	**Date:**	
CORRECTIVE ACTION VERIFICATION:**			
Verifier Name:	**Signature:**	**NCR Close-out Date:**	

**Provide a Corrective Action response, or an Action Plan with completion dates, to the QM/Auditor/Issuer by the NCR Response Date shown above. The Corrective Action Plan should describe the actions to be taken to correct the NCR, actions to be taken to prevent the finding from recurring, and an expected completion date for fully implementing the Corrective Actions. (When the Corrective Actions result in new or revised documents or procedures (such as a change or addition to the Contractor's Quality Control Plan) it is recommended to approach the Quality team to review the revised document prior to formal submittal.*

***(Quality Department/Auditor/Issuer will schedule a follow-up audit to verify that the response actions have been effectively implemented. With these verifications, this NCR will be closed.*

Attachment 3 - EPM-EQ0-TP-000005 - Non-Conformance Report (NCR) Register Template

OPEN = NO RESPONSE OPEN = RESPONSE RECEIVED, NOT ACCEPTED OR NOT VERIFIED CLOSED = VERIFIED AND CLOSED

Non-Conformance Report Register													
Audit Report No. or N/A	**A** or **S** or **O**	**Contract No.**	**Area**	**A/S/O Date**	**NCR No.**	**Contract Requirement No.**	**Description of NCR**	**Expected Response Date**	**NCR Status** OPEN / CLOSED	**Target Date to Close**	**Days Open**	**Date Closed**	**Auditor**

A = Audit, S = Surveillance, O = Other