Eskom	Work Instruction	Medupi Power Station Project

Title: **Corrective Action Request (CAR) Work Instruction**

Document Identifier:	**348-883554**
Alternative Reference Number:	**200-1684**
Area of Applicability:	**Medupi Power Station Project**
Functional Area:	**Quality Management**
Revision:	**7**
Total Pages:	**14**
Next Review Date:	**May 2025**
Disclosure Classification:	**Controlled Disclosure**

Compiled by	QA, Interface & Governance Review	Functional Responsibility	Authorized by
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Quality Assurance Engineer	**Quality Assurance Auditor**	**Quality Manager**	**Project Quality Manager**
Date: 16.05.2022	Date: 17/05/2022	Date: 17.05.2022	Date: 18.05.2022

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1. Introduction

The Medupi Power Station project promotes the identification of nonconformities, potential nonconformities and opportunities for improvement from all personnel. Nonconformities are managed through various Team Medupi (TM) Quality Management System (QMS) work instructions and/or through the Corrective Action Request (CAR) process. The CAR process is managed electronically on the SAP QIM and/or WISPA systems. In case where the two electronic systems cannot be accessed for whatever reasons, a manual process will be adopted.

2. Supporting Clauses

2.1 Scope

2.1.1 Purpose

The purpose of this work instruction is to establish the requirements, responsibilities, and authorities for the implementation of correction and corrective action processes. The aim of the process is to address nonconformities and to ensure that action is taken to control and correct the nonconformities.

2.1.2 Applicability

This procedure is applicable to nonconformities detected at the following areas:

a) Team Medupi departments
b) Contractors
c) Subcontractors and
d) Suppliers

This Work Instruction is complimentary to other procedures used to manage nonconformities, with the following being the most commonly used:

- 348-106670 Site Quality Assurance, Control and Verification Procedure
- 348-890104 Control of Nonconforming Outputs
- 348-80423 Quality Management System Audits Procedure

2.1.3 Effective date

The effective date is the last date of authorisation.

2.2 Normative/Information References

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

2.2.1 Normative

[1] ISO 9001 Quality Management Systems - Requirements

[2] ISO 9000 Quality Management Systems – Fundamentals and Vocabulary

2.2.2 Informative

[3] 348-961711 Project Execution Plan

[4] 348-883902 Project Quality Plan

[5] 348-883808 Document and Record Management Procedure

[6] 348-890104 Control of Nonconforming Outputs

[7] 348-653867 Development and Change of Medupi QMS Documents

2.3 Definitions

Term	Definition
Non-conformity	Non-fulfilment of a requirement
Correction	Action to **eliminate** a detected nonconformity
Corrective Action	Action to **eliminate the cause** of a detected nonconformity or other undesirable situation and to prevent recurrence, where recurrence refers to repetitive nonconformities
CAR	Corrective Action Request
Team Medupi	The project management team representing the Owner
Process Owner	Refers to TM Departmental Manager or Contractor

2.4 Abbreviations

Abbreviation or Acronym	Definition
CAR	Corrective Action Request
DQM	Discipline Quality Manager
EA	Engineering Assistant
FMEA	Failure Mode and Effect Analysis
GM	General Manager
KPA’s / KPI’s	Key Performance Areas /Key Performance Indicators

PQM	Project Quality Manager
QA	Quality Assurance
QMS	Quality Management System
RACI	Responsible, Accountable, Consult, Inform
SPO	Smart Plant Enterprise Owner Operator
TM	Team Medupi
RCA	Root Cause Analysis
WISPA	Web Integrated System of Processes and Applications
NoD	Notice of Defects
LDE	Lead Design Engineer

2.5 Responsibilities and Authorities

a) Responsible

Those who do the work to achieve the task. There is at least one role with a participation type of responsible, although others can be delegated to assist in the work required.

b) Accountable (also approver or final approving authority)

The one ultimately answerable for the correct and thorough completion of the deliverable or task, and the one who delegates the work to those responsible. In other words, an accountable must sign off (approve) work that responsible provides. There **must** be only one accountable specified for each task or deliverable.

c) Consulted (sometimes counsel)

Those whose opinions are sought, typically subject matter experts; and with whom there is two-way communication.

d) Informed

Those who are kept up-to-date on progress, often only on completion of the task or deliverable; and with whom there is just one-way communication.

Table 1: RACI Matrix

Process Step/Activity	**EA/Functional Manager**	**Process Owners**	**DQM**	**QMS Engineer**	**Project Quality Manager**	**LDE**	**TM Employee**
CAR initiation	R	R	R	R	A	R	R
Corrective Action Review Meeting	I	C	R	R	A	I	R
Registration and Issue of CAR's	R	R	R	R	A	R	R
Determine cause of nonconformities and potential nonconformities	R	R	R	R	A	R	R
Identify appropriate correction or corrective action to be undertaken to correct or eliminate the nonconformity	R	R	R	R	A	R	I
Review correction/corrective action measures			R	R	A	R	
Implement the necessary identified correction/corrective action measures	R	R		R	A	R	R
Review of correction/corrective action completed	I	I	R	R	A	R	I
Monthly review of corrective action effectiveness	I	I	I	R	A	I	I
Maintenance of records	R	R	R	R	A	R	R
Notification of CAR status / trends to Management	I	I	I	R	A	I	I
Log, document and communicate as Lessons Learned	I	I	I	R	A	I	I

2.6 Related/Supporting Documents – use SPO Numbers

Documents superseded by the procedure

[1] 348-883554 Corrective Action Request procedure Rev 6

Forms and Templates

[2] 348-655890 Document Self–Assessment Template

[3] 348-9916300 Non-conformance Request (NCR) Register

Records

The following records are considered applicable to this procedure

[4] Corrective Action Reports (CAR`s)

The retention and storage of records generated as a result of this document shall follow the process defined in the Procedure 200-1680 Document and Record Management"

3. Document Content

3.1 Structure, Formant and Content of Corrective Action Request (CAR)

The “Correction” is based on eliminating an actual nonconformity that has occurred, “Corrective Action” is based on eliminating the cause of nonconformity and to eliminate the cause of a potential nonconformity or other undesirable situation, as such is a key element in TM’s Quality Management System (QMS) focused on continual improvement and customer satisfaction.

The strategy employed by TM toward nonconformities is to:

a) Determine action to eliminate the causes of potential nonconformities,

b) Document detected potential and recurring nonconformities via Corrective Action Request (CAR),

c) Implement correction measures to eliminate nonconformity,

d) Implement corrective action measures to eliminate the cause of nonconformity,

e) Issue Corrective Action Requests both internally to TM and to Contractors, and

f) Evaluate the effectiveness of actions taken.

The Corrective action shall be initiated as a result of, but not limited to, the following:

a) Action items from Management Review Meetings,

b) Internal process nonconformities identified during:
   - Self-assessment reviews
   - Construction supervision, commissioning, taking over and handing over phases
   - Customer complaints/surveys

c) Identification of repetitive nonconformity such as:
   - Closure of NODs
   - Data book nonconformities identified during reviews.
   - Configuration nonconformities
   - Identification of process nonconformity.
   - Identification of test failures.

d) Identification of trends identified during **EA / DQM** analysis on the following:
   - Defect management process,
   - Audit management process,
   - Inspection management process,
   - QMS Health Checks Score card process, and

- Contractor and sub-contractor non-conformance reports and audit reports.

Once a Corrective Action Request is issued, the relevant Process Owner is responsible to determine the causes of the nonconformities and the potential nonconformity. The Process Owner shall identify the appropriate correction or corrective action to be undertaken to eliminate the nonconformity or the cause of nonconformity by responding via WISPA/SAP QIM/manually through e-mail to the CAR within seven (7) working days.

Upon Quality Department (DQM & QMS Engineer) and the LDE approval of the proposed corrective action measures, the Process Owner shall implement the agreed proposal in a timeframe based on perceived risk i.e.

- **High Risk** - response within seven (07) working days + implementation within seven (07) working days
- **Medium Risk** - response within seven (07) working days + implementation within fourteen (14) working days
- **Low Risk** - response within seven (07) working days + implementation within twenty one (21) working days

If conditions exist that prevent the aforementioned, the Process Owner shall propose an alternative corrective action measure implementation date.

3.2 Corrective Action Request Processing

3.2.1 Initiation

Initiation of CAR shall be via completion of the Corrective Action Request Form in WISPA, SAP QIM or Manual CAR form in case there is a breakdown on WISPA or SAP QIM and completion of non-conformance register by TM Employee.

3.2.2 Review Meeting, Registration and Issue

Where an opportunity to eliminate the cause of a potential nonconformity or a need for corrective action is identified, a Corrective Action Review meeting shall be convened wherein the CAR shall be discussed with the Process Owner and accepted or rejected. If the Corrective Action Request is accepted by the Process Owner, the Quality Assurance Department shall register the CAR and issue it to the responsible parties for actioning.

If the Corrective Action Request is rejected, the Initiator shall be informed and no further action is required.

3.2.3 Identify Correction Action, Nonconformity Cause Determination and Proposed Corrective Action by Process Owner

Where corrective action is required, the process owner shall:

- Determine nonconformity cause
- Determine corrective action measures to eliminate the cause of nonconformity
- Determine action to eliminate the cause of potential nonconformities
- Determine the effectiveness of the action taken to address the risk and opportunity

The Process Owner shall also determine the timeframe for completion if the prescribed risk protocol (see paragraph 3.2) completion times cannot be achieved

3.2.4. Root Cause Analysis (RCA)

Root cause analysis may be carried out for all the identified nonconformities or potential nonconformities, however for Medium and High Risk Non conformities, detailed RCA shall be carried out at all times.

These are some of the recommended RCA tools for analysing a problem. One or more tools can be used simultaneously as appropriate to the problem, but not limited to the following:

- Pareto chart.
- The five whys.
- Fishbone diagram.
- Scatter diagram.
- Failure mode and effects analysis (FMEA)

The responsible person performs this process manually and the results shall be recorded and captured on the appropriate system.

3.2.5 Reviewing and Acceptance of Proposed Corrective Action

The DQM/Quality Engineer and Senior QMS Engineer along with LDE shall review proposed corrective action and determine its acceptability in eliminating nonconformity or a cause of nonconformity.

If unacceptable the CAR form shall be returned to the Process Owner requesting revision of proposed corrective action/correction measures.

3.2.6 Corrective Action Implementation and Verification

The Process Owner shall, upon receipt of accepted corrective action proposal, implement the required corrective action measures and inform Medupi Quality Department when complete. Medupi DQM and QA Team shall coordinate verification of completed corrective action.

3.2.7 Review of effectiveness of Corrective Actions Implemented

The DQM / QA Team and the LDE shall evaluate the implemented correction and corrective action measures and their effectiveness in line with proposed action completion dates and by default, monthly and / or at time of subsequent audits.

Where CAR's are actioned correctly and effectively they shall be:

a) Closed-out by DQM / Quality Engineer / Senior Quality Engineer;
b) Recorded as closed in WISPA/SAP/SharePoint and identified as such to Process Owner; and filed as a project record in SPO/SharePoint.

CAR actioning status, age analysis and defect analysis of CAR's shall be provided periodically to:

a) Contract Managers, Process Owners and Quality Manager by DQMs for review and actioning; and
b) Senior QMS Engineer /QMS Engineer for oversight and discussion on a weekly basis via QUALITY Weekly Report for Senior TM Management.

4. PROCESS FOR MONITORING

4.1 Key Performance Areas and Indicators

The following Key Performance Areas / Indicators (KPAs / KPIs) shall be measured, analysed and reported. The Process Owner shall be accountable and assign the responsibility at the frequency as indicated below, documented as part of the QMS measurement, analysis and improvement initiative.

Table 2: KPAs/KPIs

Key Performance Area	Key Performance Indicator	Target	Measure Frequency	Responsibility
Quality Management System	Repeat Audit Findings	0	Weekly	QA Team
Quality Management System	Overdue AFR's/CAR's (> 90 days)	0	Weekly	QA Team

4.2 Document Review and Checklist for Self-Assessment

4.2.1 Document Self –Assessment

The "Process Owner" of this document along with departmental personnel and the project Quality Assurance Manager shall undertake a "self-check" review of the process defined in this document six monthly commencing from the effective date of this document, to check:

- The process / procedure operational integrity,
- Process efficiency, and
- The level of stakeholder knowledge.

Participants and results of the "self-check" review shall be documented by the Process Owner in the "Self-Assessment Checklist" *(Template No. 348-655890)* included as an Appendix to this procedure which shall be submitted via SharePoint to Medupi Documentation Department Help Desk by the Process Owner once completed.

Process Owner shall proceed with any revision requirements in line with Medupi Procedures, 348-653867 "Development and Change of Medupi QMS Documents" and 348-883808 "Document and Record Management".

4.2.2 Review Period

All QMS documents shall undergo a 3-yearly compulsory revision.

4.3 Training Requirements

This process is incorporated into WISPA and SAP QIM, therefore all project personnel shall be required to implement the process documented in this procedure will be trained in the WISPA, SAP QIM and the manual Corrective Action Process.

5. Acceptance

This documents has been seen and accepted by:

Name	Designation
B Mgidlana	Project Quality Manager
E Memela	Senior QMS Engineer
Rofhiwa Nemutandani	Project Engineering Manager
Dr Andre Venter	FIDIC Engineer

6. Revisions – Make use of only 3 latest Revisions

Date	Rev.	Compiler	Remarks
Mayl 2022	7	P.Lubisi	• To align the document with the current Practice as an outcome of the recently conducted self-assessments
March 2021	6	R Tshotheli	• Revised to incorporate the use of SAP QIM, the non-conformance Register and Manual Form in Case there is a breakdown on WISPA and SAP QIM
October 2017	5	J Mathebula QMS Auditor	• Aligned contents of the procedure with the new document template • Aligned with the ISO 9001:2015

7. Development Team

The following people were involved in the development of this document:

- Sharon Kekana
- Moses Sinobolo
- Phephile Lubisi
- Eugine Memela

Appendix A – Process Self-Assessment Checklist

Discipline: **Quality Management**	Applicable Document No.:	Self Assessment Date: / /

Item No	Ref Section	Self-Assessment Question	Compliant			Comment
			Yes	Part	No	
1	3.2	Are system nonconformities being identified by personnel other than those in the Quality Department?				
2	3.2	Are nonconformities being documented via Corrective Action Request Form				
3	3.2	Is DQM/QMS Engineer identifying whether correction or corrective action is required?				
4	3.2	Is DQM/QMS Engineer assigning a risk category to CARs				
5	3.2	Is required action completion date consistent with risk				
6	3.2	Are Process Owners responding with a correction/corrective action proposal to QUALITY Department within 7 working days?				
7	3.2	Are Process Owners Actions actioning correction/corrective within risk protocol timeframes?				
8	3.3.5	Is verification of completed actions occurring as planned?				
9	4.1	Are KPAs/KPIs reported monthly?				
10	4.3	Are personnel trained on WISPA/SAP QIM/Manual CAR process?				
11	4.4	Is the NCR register up to date with all NCR's recorded as well as NCR status correctly updated?				

Comments:

Self-Assessment by:	Name:	Position:	Revision Required? (Yes / No)	Planned Revision Date:
Attendees:				