



Specification

Nuclear Operating Unit

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Content

	Page
1. Introduction.....	4
2. Supporting Clauses	4
2.1 Scope.....	4
2.1.2 Applicability.....	4
2.1.3 Effective Date	5
2.2 Normative / Informative References	5
2.2.1 Normative.....	5
2.2.2 Informative.....	5
2.3 Definitions	5
2.4 Abbreviations	7
2.5 Roles and Responsibilities	8
2.6 Process for Monitoring.....	8
2.7 Related/Supporting Documents.....	8
3. Quality Requirements	8
3.1 Quality Assurance Requirements	8
3.2 Quality Planning	9
3.3 Access to supplier's facilities	10
3.4 Non-Conforming Outputs.....	10
3.5 Application for Concession and / or Deviation Permits.....	10
3.6 Quality Records.....	11
3.6.1 Discarding of Quality Record.....	11
3.6.2 Supplier's Proprietary Records	11
3.7 Supplier's Inspection	11
3.8 Product Quality Release.....	12
3.9 Packaging and Shipping.....	12
3.10 Preservation of Product Quality and Delivery	12
3.11 Documentation Submissions to Eskom	12
3.11.1 Proposal / Quote/ Offer/ Tender stage.....	12
3.11.2 During Contract or Purchase Order Award	13
3.11.3 During the execution of the contract or purchase order	13
3.11.4 On completion of the contract or purchase order	13
4. Development Team	14
5. Acceptance and Authorizations	14
6. Revision Information.....	14
Appendix A – Supplier Quality Assurance Requirements.....	16

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1. Introduction

This specification states the minimum quality general requirements for all existing and potential Eskom suppliers that are providing products and services that are graded to RD-0034 Level 3 (L3).

Eskom requires their suppliers to implement an appropriate quality management system that includes the consideration of Quality Assurance (QA) measures specified by Eskom for the particular product and service.

2. Supporting Clauses

2.1 Scope

This specification covers the Eskom quality management requirements applicable to suppliers and sub-suppliers of L3 products and services for the operation of the Nuclear Operating Unit within Eskom.

2.1.1 Purpose

The purpose of this specification is to outline the requirements according to which suppliers of L3 products and services shall:

- develop
- implement,
- maintain and
- continually improve

a quality management system based on ISO 9001, with the intention that suppliers continuously adhere to Eskom requirements.

2.1.2 Applicability

This specification is used by Nuclear Commercial within the Nuclear Operating Unit to communicate applicable quality management requirements to suppliers as part of

- Eskom Request for Tender/Offer/Quote/Proposal/Information;
- Contract or purchase order documentation and
- Execution of services and manufacture or supply of products.

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2.1.3 Effective Date

01 May 2021

2.2 Normative / Informative References

Suppliers using this document shall apply the most recent edition of the documents listed in paragraphs 2.2.1 and 2.2.2.

2.2.1 Normative

- [1] 238-210: Supplier, Quality Management, Product and Service Information
- [2] 240-119088507: Compiling a Modification Quality Assurance Data Package
- [3] ISO 9001: Quality Management Systems Requirements
- [4] RD-0034: Quality and Safety Management Requirements for Nuclear Installations

2.2.2 Informative

- [5] 238-6: Nuclear Division Document and Records Management Requirements
- [6] ISO 9000: Quality Management System – Fundamentals and Vocabulary
- [7] ISO 9004: Quality Management Systems – Guidelines for performance improvements
- [8] ISO 10005: Quality Management Systems – Guidelines for Quality Plans
- [9] ISO 10006: Quality Management System – Guideline for Quality Management in Projects
- [10] OHS Act of 1993: Occupational Health and Safety Act 85 of 1993

2.3 Definitions

2.3.1. Certificate of Conformance/Conformity (COC): a document signed or otherwise authenticated by an authorized individual certifying the degree to which products or services meet specified requirements.

2.3.2. Certificate of Interchangeability (COI): is a certificate that is supplied when an alternate and/or equivalent product is offered or proposed as a replacement to the requested or original product. A COI details that the two products are interchangeable in terms of design, function and qualification. In addition, the COI must reference the analysis document or qualification file where the conclusion has been derived to indicate that the alternate or equivalent product is interchangeable with the original product.

2.3.3. Concession: Permission to use or release a product that does not conform to specified requirements. A concession is generally limited to the delivery of a product that has nonconforming characteristics within specified limits for an agreed time or quantity of that product.

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- 2.3.4. Contract Quality Management Plan (CQMP):** A supplier document specifying which processes, procedures and associated resources of their Quality System will be applied by whom and when to meet the requirements of a specific contract or purchase order, project, product or process to ensure compliance with these, and their own internal requirements. If more than one activity is involved in the project, then an integrated CQMP for the entire project is compiled. This document relates to the management system and controls for the project or contract.
- 2.3.5. Deviation Permit:** Permission to depart from the originally specified requirements of a product prior to realisation. A deviation permit is generally given for a limited quantity of product or period, and for a specific use.
- 2.3.6. Document:** Information and its supporting medium on which it is contained e.g. a record, specification, procedure document, drawing, report or standard. The medium can be paper, magnetic, electronic or optical computer disc, photograph or master sample, or a combination thereof. A set of documents, for example specifications and records, is frequently called "documentation". Some requirements (e.g. the requirement to be readable) relate to all types of documents, however, there can be different requirements for specifications (e.g. the requirement to be revision controlled) and records (e.g. the requirement to be retrievable).
- 2.3.7. Hold Point:** A predetermined stage beyond which work shall not proceed without written authorisation of an Eskom representative or Eskom inspection authority or agency whichever is applicable.
- 2.3.8. Inspection Agency:** An organisation or person appointed by Eskom for the purpose of performing quality assurance/quality control, monitoring or inspection services.
- 2.3.9. Nonconformity:** non-fulfilment of a requirement
- 2.3.10. Nuclear Safety Level 3 (L3):** Relates to quality requirements applicable to products of no importance to nuclear safety. Suppliers of L3 products and services shall have implemented Quality Assurance measures that are appropriate for the scope of work and are compliant to ISO 9001 or equivalent standard.
- 2.3.11. Product:** The term "product" in addition to the ISO 9000 definition shall be interpreted as also meaning commodities, items of plant, equipment, material, services, etc. It includes SSCs, material, and services associated with SSCs. It is the result of a material or non-material process including services.
- 2.3.12. Quality Assurance:** Part of quality management focussed on providing confidence that quality requirements will be fulfilled.
- 2.3.13. Quality Assurance Data Package (QADP):** An indexed file containing all applicable records, documentation, certificates, and other data applicable to the works.
- 2.3.14. Quality Assurance Programme:** A supplier document defining a set of processes, activities, resources and events serving to implement quality management of an organisation.

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2.3.15. **Quality Control Plan (QCP):** A document specifying the work or production activities to be inspected throughout the execution of the project inclusive of test methods, procedures and acceptance criteria. Eskom will indicate on the QCP their quality inspection Hold and Witness Points.

Note 1: The QCP is sometimes referred to as the Quality Inspection Plan (QIP) or Inspection and Test Plan

2.3.16. **Quality Management:** Management with regard to quality.

2.3.17. **Repair:** Action on a non-conforming product or service to make it acceptable for the intended use.

Note 2: The process of restoring a nonconforming characteristic to a condition so that the capability of a product or service to function reliably and safely is unimpaired, even though that product still does not conform to the original requirement. Repair dispositions require Eskom acceptance.

2.3.18. **Rework:** Action on a non-conforming product or service to make it conform to the specified requirements.

2.3.19. **Services:** Output (results of a process) of an organisation with at least one activity necessarily performed between the organisation and the customer.

2.3.20. **Special Process:** A process, the results of which are highly dependent on the control of the process or the skills of the operators, or both, and in which the specified quality characteristics cannot be readily determined by inspection or test of the product.

2.3.21. **System:** A set of interrelated or interacting elements.

2.3.22. **Use-As-Is:** A disposition permitted for a nonconforming product when it can be established that the product is satisfactory for its intended use. Use-As-Is dispositions require Eskom's acceptance.

2.3.23. **Witness Point:** A predetermined stage in the quality control plan beyond which work may proceed provided Eskom or their inspection agency has been notified.

2.4 Abbreviations

Abbreviation	Description
AIA	Approved Inspection Agency
COC	Certificate of Conformance/Conformity
COI	Certificate of Interchangeability
CQMP	Contract Quality Management Plan
ISO	International Organisation for Standardisation
PER	Pressure Equipment Regulations
QA	Quality Assurance
QADP	Quality Assurance Data Package
QC	Quality Control

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Abbreviation	Description
QCP/QIP/ITP	Quality Control Plan/Quality Inspection Plan/Inspection and Test Plan

2.5 Roles and Responsibilities

The supplier is responsible to implement the specified requirements in this specification during contract or purchase order execution.

2.6 Process for Monitoring

The implementation of this specification will be monitored by PQE during periodic supplier audits and surveillances.

2.7 Related/Supporting Documents

Appendix A of this specification will be completed by an Eskom Nuclear Commercial Quality representative who will identify the specific quality assurance requirements that the supplier shall meet.

238-210 (Supplier, Quality Management, Product and Service Information) will be issued to the supplier to complete and return when responding to an Eskom invitation to submit information / proposal / tender / offer / quote.

3. Quality Requirements

3.1 Quality Assurance Requirements

- 3.1.1. Full details and justification of deviations from this specification shall be submitted to Eskom in writing for clearance prior to design, development, manufacture and supply of the products and services.
- 3.1.2. Full details of all deviations from these requirements must be submitted to Eskom in writing for clearance as exceptions during the supplier's tender/offer/quote stage.
- 3.1.3. Deviations after contract or purchase order award should be treated as Deviation or Concession permits.
- 3.1.4. The supplier shall have a documented, authorised and implemented quality assurance programme that, as a minimum, meets the requirements as identified in Appendix A of this specification as appropriate.

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- 3.1.5. The supplier shall be responsible for ensuring that all subcontractor quality assurance measures applicable to the subcontractor scope of work or supply comply with this specification.
- 3.1.6. The supplier must provide a description of the processes and supporting information that reflects how work is prepared, reviewed, carried out, recorded, assessed and improved during the supplier's tender/offer/quote stage.
- 3.1.7. The supplier shall inform Eskom of any changes to the quality assurance programme or personnel that will affect the quality assurance measures relating to the implementation of the Eskom scope of work.

3.2 Quality Planning

- 3.2.1. The supplier shall prepare a contract quality management plan (CQMP) as identified in Appendix A of this specification or on the order, which shall address the quality practices and interfaces with Eskom applicable to the contract or purchase order. In addition, the Eskom specific quality requirements which are not fully covered by the suppliers' documented quality system shall be addressed in this contract quality plan.
- 3.2.2. The supplier shall prepare Quality Control Plans (QCP) as identified in Appendix A of this specification or on the order. This QCP shall identify the sequential operations, indicate the inspection and test points and areas where reports and records are required.
- 3.2.3. QCPs shall be prepared for each uniquely identified product and shall be traceable to the work performed (Appendix A refers).
- 3.2.4. QCPs shall be reviewed by Eskom or its inspection authority or agency and they shall allow for the insertion of Eskom specific requirements, including hold and witness points prior to the commencement of work (Appendix A refers).
- 3.2.5. Subsequent changes to the Eskom approved quality plans shall require Eskom's agreement prior to the commencement of work involving an activity affected by such changes.
- 3.2.6. The supplier shall notify Eskom timeously, through agreed arrangements on dates and logistic regarding inspections and other quality activities.
- 3.2.7. Notification regarding intervention (hold / witness) points shall include the following information as applicable:
- Order or contract number;
 - Products involved;
 - QCP operation number;
 - Location of operation;
 - Time and date of operation;
 - Contact person's name and telephone number.

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- 3.2.8. The supplier shall submit the following management system documents within thirty days after the contract start date, for acceptance by Eskom, prior to the commencement of work;
- One copy of the CQMP, which indicates how the supplier will execute works for the contract
 - One copy of the QCP, to be accepted prior to the commencement of any work
 - Method statements for works (describing how work will be conducted) to be accepted prior to the commencement of any work.

3.3 Access to supplier's facilities

Eskom or its inspection authority or agency where appropriate, shall be afforded access to supplier and sub-contractor's premises and facilities at reasonable times to conduct quality audits, surveillance or inspections to verify compliance with the contract or order. The level of monitoring may vary during the contract or order depending on the demonstrated performance and Eskom's degree of confidence.

3.4 Non-Conforming Outputs

- 3.4.1. All non-conforming products and services that affect form, fit or function as specified by the contract or purchase order, referenced standard, technical specification, Eskom approved drawing, procedure and quality control plans or which affect interchangeability or maintenance, shall be reported to Eskom.
- 3.4.2. Eskom shall be informed of non-conforming products and services as soon as such non-conformances are recognized by the supplier. The supplier shall implement the respective processes which must adequately reflect Eskom involvement.
- 3.4.3. If the process of rework involves new special processes (i.e. welding, heat treatment, non-destructive examination procedures that has not yet been approved or accepted by Eskom or Eskom's inspection authority or agency) or will have an effect on form, fit or function of other acceptable products, materials, components, equipment, structures or systems, then such nonconformities shall be reported to Eskom or Eskom's appointed inspection authority or agency.
- 3.4.4. For nonconformities that require recalls, the supplier shall evaluate deviations, defects and failures associated with substantial safety hazards as soon as practicable and report it to the Eskom.

3.5 Application for Concession and / or Deviation Permits

- 3.5.1. Non-conforming products and services shall be rejected by the supplier or Eskom, or Eskom's inspection authority or agency. In exceptional cases, if considered suitable for repair, or if it may be used "as is", non-conforming products and services shall be the subject of a concession permit application. Such application shall be submitted directly to Eskom, or Eskom's inspection authority or agency for review and acceptance.

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3.5.2. The accepted / rejected concession permit shall form part of the quality assurance data package.

3.5.3. A departure to a specified requirement due to non-availability, mechanical properties, chemical composition or similar problems, shall be the subject of a deviation permit before production or service provision commences.

3.6 Quality Records

3.6.1 Discarding of Quality Record

No quality records applicable to Eskom scope of work shall be destroyed or discarded by the supplier without prior written consent by Eskom.

3.6.2 Supplier's Proprietary Records

Whenever Eskom and the supplier mutually agree that the supplier retains certain quality records that the supplier considers proprietary information, the supplier shall ensure that:

- Records and documentation are kept suitably protected against deterioration and/or damage for an agreed period;
- Eskom is granted due access to such records and documentation, on request; and
- Records and documentation are properly indexed and readily retrievable at all times.

3.7 Supplier's Inspection

3.7.1. The supplier shall ensure that all work has been fully inspected, accepted and documented prior to requesting any inspection by Eskom.

3.7.2. Final dimensional checks and those before machining as applicable must be included in the final Quality Assurance Data Package that accompanies the product.

3.7.3. All inspections and tests required by the Technical Specification or defined in the order must be documented and included in the final Quality Assurance Data Package that accompanies the product.

3.7.4. The Supplier shall comply with the Pressure Equipment Regulations (PER) under the South African Occupational Health and Safety Act 85 of 1993, during the design, manufacture, construction, erection, commissioning, maintenance, repair, testing and certification of Pressure Equipment.

3.7.5. The Approved Inspection Authority (AIA), the final selection of which is subject to Eskom approval, shall perform these duties when required either in accordance with the provisions of the Occupational Health and Safety Act 85 of 1993 or the works information. The supplier

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shall submit any information and documents requested by Eskom or the appointed Approved Inspection Authority.

- 3.7.6. The supplier shall complete and submit a QADP to Eskom for the Pressure Equipment containing a certificate issued by the equipment manufacturer and containing a verification signature by the Approved Inspection Authority, which certifies that the pressure equipment is designed and manufactured in accordance with the applicable health and safety standard (Appendix A refers).

3.8 Product Quality Release

- 3.8.1. No product covered by this specification may be dispatched to site, unless it has been released by Eskom or Eskom's agency through an Eskom product quality release unless otherwise agreed by Eskom in writing. The supplier shall ensure that one copy of the product quality release is shipped with the product to site.
- 3.8.2. Release of site work: No product covered by this specification shall be placed into service unless it has been inspected and released by Eskom.

3.9 Packaging and Shipping

All Packaging, Shipping, Receiving, Storage, and Handling of products shall conform to the procurement specification or works information of the contract or purchase order where specified by Eskom. Any deviation requests shall be formally applied for with Eskom.

3.10 Preservation of Product Quality and Delivery

- 3.10.1. The supplier shall specify at the time of delivery any special requirements for safe handling, storage, protection from environmental degradation, shelf life and utilisation.
- 3.10.2. Confirmation of delivery of products by Eskom personnel, by signing the delivery note, should not be interpreted as acceptance of the products.
- 3.10.3. Products shall be accepted or rejected only after completion of the receipt inspection process. Receipt inspection involves inspection of the products and review of the quality assurance data package to verify their conformance to procurement requirements.

3.11 Documentation Submissions to Eskom

3.11.1 Proposal / Quote/ Offer/ Tender stage

The following documents shall be submitted:

- Appendix A – (Supplier Quality Assurance Requirements): Accepted, signed and returned,
- 238-210 – (Supplier, Quality Management, Product and Service Information): Completed and returned.

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The following documents shall be submitted as applicable to the requirements specified as part of the Functional Evaluation Criteria when quality management system is required:

- Latest structure/organogram of the organisation;
- Copy of the contract quality management plan (including QCP's) from a similar project executed by the tenderer less than three years ago. If none exists, then one provisional (draft) copy of the CQMP (including a signed quality policy);
- A CV of the supplier's individual who has the responsibility for quality assurance and /or quality control;
- Copy of last Management Review report reflecting quality performance and measures;
- Sample of a completed non-conformity report;
- Copy of latest internal audit schedule and audit report;
- A method statement for the evaluation and selection of suppliers.

Note 3: *Evaluation of the supplier's quality assurance capabilities will be based on the above submissions as well as their existing record of performance.*

3.11.2 During Contract or Purchase Order Award

The following documents shall be submitted to Eskom for review and acceptance on contract or purchase order award and prior to commencement of work (Appendix A refers) as applicable:

- copy of the quality manual or, documented information regarding policy and statements of intent regarding quality;
- copy of QCP and;
- copy of the CQMP.

3.11.3 During the execution of the contract or purchase order

The following documents shall be submitted to Eskom during the execution of the contract or purchase order:

- Quality records index of all quality control inspection and test records as well as any statutory documentation such as high pressure vessels that are governed by Pressure Equipment Regulations (PER)]. The retention period and location shall be indicated against each record type in the index. Eskom, or Eskom's inspection authority or agency, will review the index for acceptance;
- Concessions or deviation permits.

3.11.4 On completion of the contract or purchase order

A copy of the approved Quality Assurance Data Package (QADP) shall be included with the shipment of products for delivery to site.

The QADP shall be indexed to show the entire contents and shall contain as applicable:

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- a certificate of conformance verifying that technical and QA and/or QC requirements have been satisfactorily completed and all quality control plans have been “signed off”;

Note 4: *The Certificate of Conformance must indicate the Eskom Order Number, Supplier’s name and address, identification marks, cast or batch numbers and/or serial numbers, description of material, quantity, specification/drawings, including revision, test report numbers or reference to test report, and signed by authorised individual of management;*

- certificates of interchangeability where alternate or equivalent product is supplied;
- completed quality control plans for each uniquely identified product;
- inspections, test reports and certificates identified in the quality control plans;
- valid certificates of NDT personnel;
- NDT reports;
- material certificates;
- concessions and / or deviation permits;
- any additional information as referenced in 240-119088507 (Compiling a Modification Quality Assurance Data Package), when applicable.

4. Development Team

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

- Meeuwssen Edmonds

5. Acceptance and Authorizations

This document has been seen and accepted by:

Name	Designation
Luren Chetty	Quality Manager- Nuclear Project Management

6. Revision Information

Date	Rev.	Compiler	Remarks
April 2021	2	S Brown	Full Review

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Date	Rev.	Compiler	Remarks
July 2018	1	PS Xotyeni	New document as the Revision 0 was blocked for implementation. Amended the document to correct minor and formatting changes and to reflect the expansion of the Nuclear Operating Unit to accommodate Nuclear New Build Programme
July 2015	0	H Zakarian	RD-0034 Level 3 supplier requirements

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Appendix A – Supplier Quality Assurance Requirements

Enquiry No:

Station/BU:

TITLE:

QUALITY LEVEL:

Tick (✓) as applicable

YES

NO

ISO 9001	Quality Management System - Certified.	<input type="checkbox"/>	<input type="checkbox"/>
ISO 9001	Quality Management System - Compliance.	<input type="checkbox"/>	<input type="checkbox"/>
Quality Assurance	Formal Quality Assurance and inspection Programme accepted by Eskom- such formal control shall consist of the appropriate work procedures (e.g. procurement, receipt inspection, storage, handling processes, etc.)	<input type="checkbox"/>	<input type="checkbox"/>

Documents which shall be prepared on implementing quality programme requirements:

- 1) Contract Quality Management Plan (ISO 10005)
- 2) Quality Control Plans (ISO 10005)
- 3) Data books for boilers, pressure vessels and alloy and high pressure/temperature pipe work systems

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Documents which shall be consulted on implementing the works:

- 1)
- 2)
- 3)
- 4)

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Compiled by (Eskom):Date.....

Accepted by (Supplier): Date.....

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