



Eskom

Standard

Technology

Title: **PROCEDURE FOR THE
REQUEST FOR MODIFICATION
ON PREPAID METERS**

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Compiled by

Approved by

Authorized by

SIGNED

SIGNED

SIGNED

**Edison Makwarela
Senior Consultant**

**Amelia Mtshali
Manager: Metering, DC &
Security Tech. (Acting)**

**Richard Mccurrach
Senior Manager PTM&C**

Date:

Date:

Date:

Supported by SCOT/SC

SIGNED

**Reginald Brooks
M&M SC Chairperson**

Date:

PCM Reference: **Perform PTM&C Systems Engineering**

SCOT Study Committee Number/Name: **Measurement and Metering Study Committee**

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1. Executive summary

This document describes Eskom's Request for Modification (RFM) process. The document guides both Eskom and Prepayment Meter Manufacturers to follow a standard, well documented and traceable process when either party initiate requests to modify approved Prepayment Meters.

2. Introduction

None

3. Supporting Clauses

3.1 Scope

This document describes Eskom's Request for Modification (RFM) process. The standard RFM form is given in Appendix C. The standard correspondence and RFM numbering schemes that apply to electricity prepayment meters are given in **4.1.4 , a) and b)**.

3.1.1 Purpose

None

3.1.2 Applicability

This document shall apply throughout Eskom Holdings Limited Distribution Division.

3.2 Normative/Informative References

Parties using this procedure shall apply the most recent edition of the documents listed below:

3.2.1 Normative

- [1] 240-75660815: Common base and standard passive units for single-phase 230V service connections.
- [2] 240-76619479: Procedure for producing software process assessment documents.
- [3] 240-76625601: Standard for particular requirements for Prepayment Meters
- [4] 240-76627071: Standard for information on Electricity Dispensers dispatched form/to manufacturers to/from Eskom
- [5] ISO 9001:2000 Quality Management Systems NRS 057: Code of practice for electricity metering
- [6] NRS 009-4-1: Meter Card specification. Available from the SABS
- [7] NRS 009-4-2: Meter Number specification. Available from the SABS
- [8] NRS 009-6: Sections 6 to 9 STS encryption algorithm specifications. Available from the SABS
- [9] SABS 1524-0: Glossary and system overview. Available from the SABS
- [10] SABS 1524-1: Specification for prepayment meters (this specification refers to the IEC 61036 specification for many tests) Available from the SABS.

3.2.2 Informative

None

3.3 Definitions

3.3.1 General

Definition	Description
Gatekeeper	Eskom representative responsible for the processing of all prepayment meter RFMs
Prepayment Meter	Prepayment Meter for the purpose of this procedure includes the Electricity Dispenser, Energy Control Unit and Split Meters
Stakeholders	Eskom representative from different departments or sections that could possibly be affected by the RFM. This includes Engineering and Technical, Software Quality Assurance, Quality Assurance, Commercial and Field Services.

3.3.2 Disclosure Classification

Controlled disclosure: controlled disclosure to external parties (either enforced by law, or discretionary).

3.4 Abbreviations

Abbreviation	Description
ALT	Accelerated Life Testing
CDU	Credit Dispensing Unit
CMP	Configuration Management Plan
ECO	Engineering Change Order
ECP	Engineering Change Proposal
ECU	Energy Control Unit
ED	Electricity Dispenser
H/W	Hardware
RFM	Request for Modification
S;/W	Software

3.5 Roles and Responsibilities

None

3.6 Process for monitoring

None

3.7 Related/Supporting Documents

None

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4. Procedure for the Request for Modification on Prepaid Meters

4.1 Requirements

4.1.1 Request for Modification Process

- a) Either Eskom or the developer may choose to modify the product. The intention of either party to modify the product shall result in a formal request for modification (RFM) made by the developer. Eskom may initiate a modification to the product by issuing a written request for the developer to produce a request for modification.
- b) The RFM and change management processes shall be formally documented in the developer's configuration management plan.
- c) The developer and Eskom shall both nominate a Gatekeeper. It shall be the Gatekeeper's responsibility to ensure that all intended modifications to the product are managed within the RFM process.
- d) All requests for modifications shall be made on Eskom's standard RFM form (Annex C). The developer shall submit completed RFM forms to Eskom's Gatekeeper by e-mail or facsimile transmission.
- e) Eskom's Gatekeeper shall evaluate the RFM in terms of risk, cost and benefit and make a Go/No-Go decision based on this evaluation.
- f) The RFM may be circulated between the developer and Eskom until consensus on the modification has been reached. Consensus shall be deemed to have been reached when the Eskom Gatekeeper has issued a Go decision that the developer agrees to. If the Eskom Gatekeeper issues a Go decision that the developer does not agree to, or if the Eskom Gatekeeper issues a No-Go decision, then the RFM shall be revised or withdrawn.
- g) No RFM shall be allowed to proceed to the production stage without the explicit approval of the developer's internal engineering change control management and Eskom's appointed Gatekeeper. Approval shall be deemed to have been granted once all the relevant sections of the RFM form have been completed and signed off / authorised.
- h) An RFM shall be produced for all proposed modifications, no matter how minor or trivial.
- i) The Eskom Gatekeeper shall evaluate the magnitude of the consequences of the proposed modification. Proposals for minor modifications shall elicit prompt responses.
- j) Eskom shall submit all RFM responses to the developer's appointed Gatekeeper.
- k) The "Document Reference No." field on the RFM form shall specify a number that is generated by Eskom or the developer according to the standard RFM numbering scheme.
- l) The developer shall use the "Optional ECP No." field to cross reference.

4.1.2 RFM Approval Gatekeeper Process

(Refer to diagram in Annex B)

- a) The RFM and additional information must fully define the change including the risks involved.
- b) If it is discovered at any point in the process (Annex B), that there may be additional risks attached to the modification, such risks must be defined before proceeding.
- c) If any of the processes in the flow diagram (Annex B) fail, the RFM must be modified to make it acceptable to the relevant parties, or the approval of the RFM must be denied and the modification may not be implemented.
- d) Supplier Development shall keep an index of all RFM forms (Annex C) and to inspect the implementation of the RFM during normal visits.

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- e) For complex modifications: Technical review meetings shall be arranged, with the manufacturer, at various points during the development cycle and milestones checked.

4.1.3 Additional Requirements

- a) If, at any time, there are any modifications to the specification, hardware or resident (ROM) software of a particular type and model of meter, it shall be regarded as a new model and then require repeat type tests to be satisfactorily carried out before it may be considered to be certified. Where the modifications affect only part of the device, it may be sufficient to perform only limited tests on the characteristics affected by the modifications. The extent of such tests shall be decided by the accredited test laboratory that carries out the type tests.
- b) In the event where an RFM is initiated by an Eskom Region or by an individual in the region, the RFM shall be sanctioned and submitted by the Technology and Quality Department (T & Q) in that region.

4.1.4 Standard Numbering Scheme for Documentation and RFM's relating to Prepayment Meters

- a) Document reference number

A common numbering system will be followed for all correspondence that needs to be tracked. This system will replace the existing system although the sequence numbers will continue from the previous system. The only additional requirement is that the contract number must be included in the number if it is available and relevant. If no contract number is used, the correspondence number will be identical to the previous system.

Examples:

From Eskom to Actaris (on the latest ED contract).	ESK/001/AEG - EDS400
Second correspondence to Actaris (on previous contract).	ESK/002/AEG - EDS200
Third correspondence to Actaris (on unknown contract).	ESK/003/AEG -
From Eskom to CONLOG (on the latest ED contract).	ESK/001/CON - EDS600
Second correspondence to CONLOG (on CDU contract).	ESK/002/CON - CDU001
From Eskom to Landis & Gyr (on the latest ED contract).	ESK/001/EML - EDS500
Second correspondence to Landis & Gym (on the latest ED contract).	ESK/002/EML - EDS500
From Actaris to Eskom (on the latest ED contract).	AEG/001/ESK - EDS400
From CONLOG to Eskom (on the latest ED contract)	CON/001/ESK - EDS600
From Landis & Gyr to Eskom (on the latest ED contract).	EML/001/ESK - EDS500

Correspondence that follows will have a sequence number of 002 regardless of the contract number used.

NOTE:

- 1) There are different contracts (and hence different contract numbers) for the various products supplied to Eskom over the past years.
- 2) Correspondence on products which were supplied under the previous contracts must be numbered with the original contract number as far as possible.
- 3) If the contract number is not relevant or is unknown it may be left off, but at least the contract numbers for the current contracts must be included.
- 4) The sequence number must be incremented regardless of the contract numbers used, i.e. All the correspondence numbers must still be unique if the contract number is ignored.
- 5) The same numbering system will be used by Electrification (Prepayment Development Department), Commercial, Supplier development (Quality) and Maintenance & Control (Technical)

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b) RFM Number

This is a sequential number which is generated by the manufacturer. The general rules for the correspondence number also apply to this number. This number will be used as the reference to a particular modification and must be included in all correspondence relating to a particular modification.

Example:

First modification requested by Actaris (on latest product) RFM/001/AEG Second modification
requested by Actaris (on old product) RFM/002/AEG

Third modification requested by Actaris (on latest product) RFM/003/AEG

First modification requested by CONLOG (on latest product) RFM/001/CON Second modification
requested by CONLOG (on CDU) RFM/002/CON

First modification requested by Landis & GYR (on latest product) RFM/001/EML Notes:

- 1) A manufacturer must be able to link all future modifications to a unique RFM number and also to a start meter serial number if required.
- 2) There are no different RFM numbers for correspondence from Eskom to the manufacturers.
- 3) The manufacturer must maintain a tracking system to determine at any time exactly which RFMs are applicable to what meters. The information may be required under two conditions:
 - When looking at a meter with a particular serial number, the supplier must be able to identify which RFMs have been implemented in this meter.
 - When looking at a specific RFM, the supplier must be able to identify from which meter serial numbers (or ranges of numbers), the particular RFM has been implemented and which ranges do not have this RFM.

c) Optional ECP Number

This is an internal reference number which may be used by manufacturers to reference the RFM to their Engineering Change Proposals (ECP).

4.1.5 Disclaimer

The disclaimer below shall form part of all approval letters and faxes sent to all suppliers:

“The approval in terms of this letter is subject to the conditions set out below:

The supply of the equipment to Eskom shall be governed strictly in accordance with the provisions of any such contract and Eskom shall incur no liability, express or implied, from this notification or any error or inaccuracy in the reports.

Eskom shall not be liable for any damages; whether direct or special, which may be suffered because of the supply, manufacturing, non-performance or rejection of the above-mentioned equipment. The non-liability for damages as set out in the aforementioned, shall also apply in respect of any efforts of Eskom to assist to ensure compliance with the requirements set out in certain specifications or because of the suggestion of certain tests to be carried out to obtain favourable reports in respect of compliance of the equipment.

Any modifications to the equipment will require further approval before any such modified products are supplied to Eskom. This approval does not constitute a recommendation for the equipment described herein.”

5. Authorisation

This document has been seen and accepted by:

Name and surname	Designation
R Mccurrach	Senior Manager: PTM&C

Name and surname	Designation
A Mtshali	Metering, DC & Security Technologies Manager (Acting) – PTM&C
R Brooks	Metering and Measurements Study Committee Chairperson

6. Revisions

Date	Rev.	Compiler	Remarks
Nov 2014	1	M E Makwarela	No change in content, change in format only. This document supersedes document number DPC_34-1466
March 2010	2	M E Makwarela	Second Revision of the document, Documents issued for comments
Jun 2006	1	M E Makwarela	First Revision of the document and publication
Nov 2003	0	M E Makwarela	First issue and publication

7. Development team

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

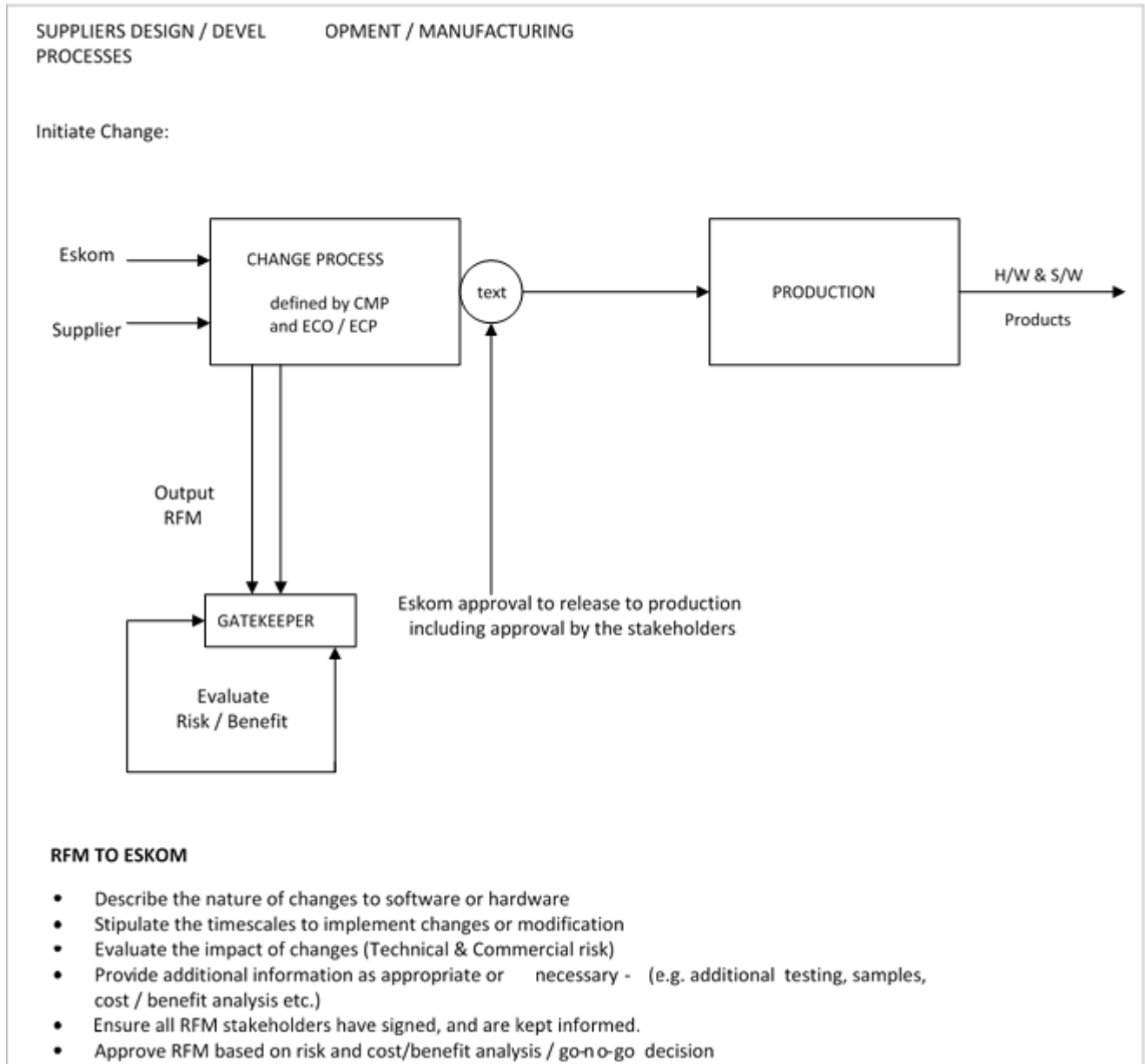
- J O’Kennedy PTM & C – Chief Engineer
- E Makwarela PTM & C – Senior Consultant

8. Acknowledgements

None

Annex A – : Request for Modification and Change Management Control

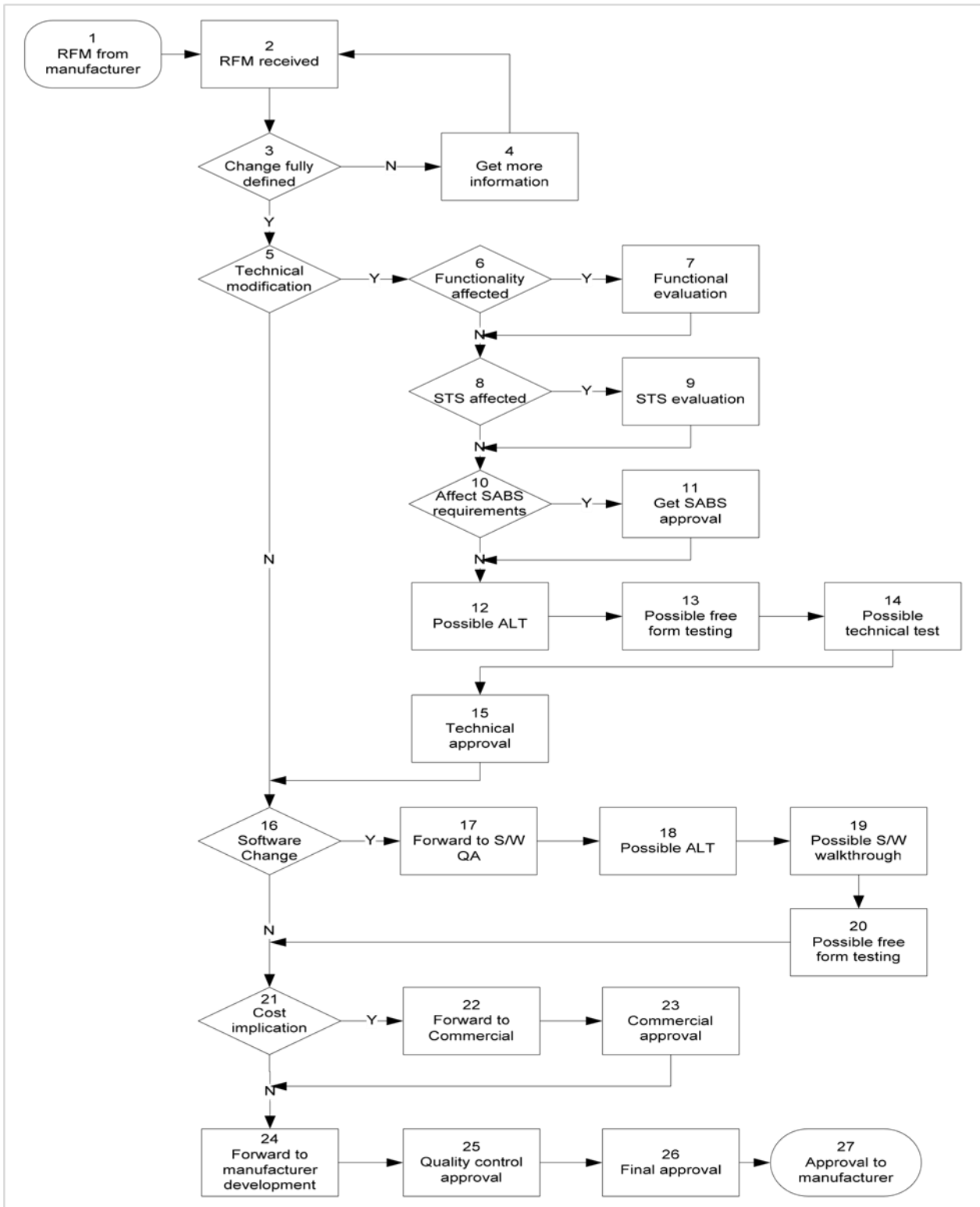
(Normative)



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Annex B – : RFM Approval Gatekeeper Process

(Normative)



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Annex C – : Request for Modification Form

	REQUEST FOR MODIFICATION		PROCEDURE QA22 VERSION 2.
	(To be completed by RFM initiator)		
DOCUMENT REFERENCE No:			COMPANY:
RFM No:	DATE:	NAME:	
PRODUCT NAME & TYPE:			Optional ECP No:
Additional Product Description: (If applicable)			
DETAIL OF CHANGE: (What? In general terms)			
ED Model/ Version Number Current: New:			
Software Version Current: New:			
Will new version supersede current version?:		Estimated implementation date:	
MOTIVATION FOR CHANGE: (Why?)			

Originator	:	Date:
Signature:		

AUTHORIZED: (To be completed by RFM Board)

	Routing	Req.	Authorized	Date
1	Engineering & Technical			
2	Software Q/A			
3	Quality Assurance			
4	Commercial			
5	Field			

Final approval of proposal

.....

Name

Designation

.....

Signature

Date

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Annex D – : Impact assessment

1. Guidelines

- All comments must be completed.
- Motivate why items are N/A (not applicable)
- Indicate actions to be taken, persons or organisations responsible for actions and deadline for action.
- Change control committees to discuss the impact assessment, and if necessary give feedback to the compiler of any omissions or errors.

2. 2 Critical points

2.1 Importance of this document. E.g. is implementation required due to safety deficiencies, statutory requirements, technology changes, document revisions, improved service quality, improved service performance, and optimised costs.

Comment: Technology changes, document revisions, improved service quality

2.2 If the document to be released impacts on statutory or legal compliance - this need to be very clearly stated and so highlighted.

Comment: Not Applicable

2.3 Impact on stock holding and depletion of existing stock prior to switch over.

Comment: Not Applicable

2.4 When will new stock be available?

Comment: Not Applicable

2.5 Has the interchangeability of the product or item been verified - i.e. when it fails is a straight swop possible with a competitor's product?

Comment: Not Applicable

2.6 Identify and provide details of other critical (items required for the successful implementation of this document) points to be considered in the implementation of this document.

Comment: Not Applicable

2.7 Provide details of any comments made by the Regions regarding the implementation of this document.

Comment: Not Applicable

3. 3 Implementation timeframe

3.1 Time period for implementation of requirements.

Comment: Immediately.

3.2 Deadline for changeover to new item and personnel to be informed of DX wide change-over.

Comment: Not Applicable

4. 4 Buyers Guide and Power Office

4.1 Does the Buyers Guide or Buyers List need updating?

Comment: Not Applicable

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4.2 What Buyer's Guides or items have been created?

Comment: Not Applicable

4.3 List all assembly drawing changes that have been revised in conjunction with this document.

Comment: Not Applicable

4.4 If the implementation of this document requires assessment by CAP, provide details under 5

4.5 Which Power Office packages have been created, modified or removed?

Comment: Not Applicable

5. 5 CAP / LAP Pre-Qualification Process related impacts

5.1 Is an ad-hoc re-evaluation of all currently accepted suppliers required as a result of implementation of this document?

Comment: Not Applicable

5.2 If NO, provide motivation for issuing this specification before Acceptance Cycle Expiry date.

Comment: Not Applicable

5.3 Are ALL suppliers (currently accepted per LAP), aware of the nature of changes contained in this document?

Comment: All suppliers are aware of this procedure. No changes were made in the revised document.

5.4 s implementation of the provisions of this document required during the current supplier qualification period?

Comment: Not Applicable

5.5 If Yes to 5.4, what date has been set for all currently accepted suppliers to comply fully?

Comment: Not Applicable

5.6 If Yes to 5.4, have all currently accepted suppliers been sent a prior formal notification informing them of Eskom's expectations, including the implementation date deadline?

Comment: Not Applicable

5.7 Can the changes made, potentially impact upon the purchase price of the material/equipment?

Comment: Not Applicable

5.8 Material group(s) affected by specification: (Refer to Pre-Qualification invitation schedule for list of material groups)

Comment: Not Applicable

6. 6 Training or communication

6.1 State the level of training or communication required to implement this document. (E.g. none, communiqués, awareness training, practical / on job, module, etc.)

Comment: Not Applicable

6.2 State designations of personnel that will require training.

Comment: Not Applicable

6.3 Is the training material available? Identify person responsible for the development of training material.

Comment: Not Applicable

6.4 If applicable, provide details of training that will take place. (E.G. sponsor, costs, trainer, schedule of training, course material availability, training in erection / use of new equipment, maintenance training, etc).

Comment: Not Applicable

6.5 Was Training & Development Section consulted w.r.t training requirements?

Comment: Not Applicable

7. 7 Special tools, equipment, software

7.1 What special tools, equipment, software, etc will need to be purchased by the Region to effectively implement?

Comment: Not Applicable

7.2 Are there stock numbers available for the new equipment?

Comment: Not Applicable

7.3 What will be the costs of these special tools, equipment, software?

8. 8 Finances

8.1 What total costs would the Regions be required to incur in implementing this document? Identify all cost activities associated with implementation, e.g. labour, training, tooling, stock, obsolescence

Comment: Not Applicable

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Impact assessment completed by:

Name: Edison Makwarela

Designation: Senior Consultant