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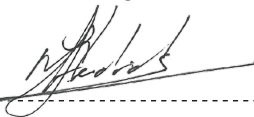
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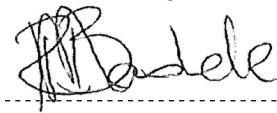
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1. Executive Summary

In accordance with the license application, Eskom needs to provide the National Nuclear Regulator (NNR) with progress feedback on the readiness of Koeberg Nuclear Power Station (KNPS) for Long Term Operation (LTO). This report provides an update on the progress made in completing the safety improvement actions since the last status report.

There are several actions that are not linked to a 40-year life limitation but included in the LTO safety case preparation plan and continue to be prioritised.

Following the approval of the licence change request, LCR 1979 to separate the operating timelines of Koeberg unit 1 and unit 2, the following are noted as the outstanding actions to be completed before 21 July 2024:

- Implementation of the masonry block wall strengthening modification.
- Implementation of PMs and AMPs onto SAP.

It is concluded that all the actions for safe LTO have been identified, most of the actions have been completed, and the remaining outstanding actions do not present a risk for entry into LTO. The outstanding actions are on track to be completed prior to the unit 1 license expiry date.

All the required submissions to the NNR to satisfy the commitments in the LTO IPP have now been completed. There are no outstanding commitments that require NNR submission prior to LTO.

Therefore, Eskom is of the view that KNPS is ready for LTO.

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2. Introduction

This report provides the latest update on the progress of all the preparation activities identified in Appendix A of the LTO safety case 331-618 rev 3, 'Safety Case for Long-Term Operation of Koeberg Nuclear Power Station' [2], ((Long Term Operation Integrated Implementation Plan (LTO IIP)). The status updates provide the NNR with an overview on the progress of the preparation activities listed in the LTO IIP and a technical basis for Eskom's readiness for safe LTO.

The NNR approved LCR 1979 and issued a new licence, NIL-01 (Variation 20) which reflects that unit 1 can operate until 21 July 2024 and unit 2 until 9 November 2025. This change reduces the risk of unit 2 activities which are no longer required prior to 21 July 2024.

In contrast to the previous status report which provided a status on each of the safety assessments, this report will focus on the LTO IIP (Appendix A of 331-618 rev. 3, [2]) to prevent duplication and provide a more concise summary.

3. Scope

The scope includes the progress made on completing the preparation activities as contained in the LTO safety case IIP to satisfy the requirements in NNR's interim guide, RG-0027, 'Interim Regulatory Guide Ageing Management and Long-Term Operations of Nuclear Power Plants' [3].

3.1 Purpose

The purpose of this document is to provide an update on the progress of activities identified in the LTO safety case that support the safe long-term operation of Koeberg and demonstrate that Eskom is ready for LTO based on the progress made.

3.2 Effective date

This document is effective from the date of authorisation.

3.3 Normative/Informative references

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

3.3.1 Normative

- [1] 240-157754316: Structure and Content of the LTO Safety Case;
- [2] 331-618: Safety Case for Long-Term Operation of Koeberg Nuclear Power Station;

3.3.2 Informative

- [3] NNR RG-0027, Interim Regulatory Guide Ageing Management and Long-Term Operations of Nuclear Power Plants;

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- [4] Department of Mineral Resources and Energy (DMRE), R.266, Regulations on the Long-Term Operation of Nuclear Installations.

4. Supporting Clauses

4.1 Definitions

Term	Definition
Ageing management programme (AMP)	A programme that manages the effects of ageing on structures and components so that the intended functions will be maintained in accordance with the current licensing basis for the period of extended operation.
Long-term operation (LTO)	Operation of the plant beyond an established time frame set forth by, for example, licence term, design, standards, licence or regulations, which has been justified by safety assessment, with consideration given to life-limiting processes and features of SSCs.
Risk	The effect of uncertainty on objectives (in accordance with 32-391 'Integrated Risk Management Standard'). In the context of this document, "No Risk" means that there is a high confidence that the action/issue/activity will be completed prior to LTO, or where applicable, the activity is not required prior to LTO. It also implies that the technical risk associated with the activity is low so that it is unlikely to impact the schedule and hence LTO.
Safety aspects of long-term operation (SALTO)	The IAEA peer-reviewed safety assessment focused on the safety aspects of long-term operation for nuclear power plants planning on extending plant life into long-term operation.

4.2 Abbreviations

Abbreviation/Trigram	Definition
AADQ	Annual Authorised Discharge Quantity
AM	Ageing Management
AME	Ageing Management Evaluation
AMM	Activity Migration Model
AMP	Ageing Management Programme
C&I	Control and Instrumentation

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Abbreviation/Trigram	Definition
CAMP	Cable Ageing Management Programme
CN	Change Notice
CRE	Control Room Envelope
DEC	Design Extension Condition
DSSR	Duynefontyn Site Safety Report
EAF	Environmentally Assisted Fatigue
EP	Emergency Plan
EPTB	Emergency Planning Technical Basis
EQ	Equipment Qualification
I&C	Instrumentation and Control
IAEA	International Atomic Energy Agency
ICCP	Impressed Current Cathodic Protection
IGALL	International Generic Ageing Lessons Learned
IIP	Integrated Implementation Plan
ILRT	Integrated Leak Rate Test
IPP	Integrated Preparation Plan
KNPS	Koeberg Nuclear Power Station
LLWB	Low-Level Waste Building
LTO	Long-Term Operation
NNR	National Nuclear Regulator (the Regulator)
NOU	Nuclear Operating Unit
PM	Preventive Maintenance
POC	Program Oversight Committee
PSHA	Probabilistic Seismic Hazard Analysis
PTHA	Probabilistic Tsunami Hazard Analysis
PWSCC	Primary Water Stress Corrosion Cracking
RCP	Reactor Coolant Pressure System

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Abbreviation/Trigram	Definition
RG	Regulatory Guide
RIC	In-core Flux Monitoring System
RPV	Reactor Pressure Vessel
RRA	Residual Heat Removal System
SALTO	Safety Aspects of Long-Term Operation
SAR	Safety Analysis Report
SG	Steam Generator
SMOC	SALTO Management Oversight Committee
SN	Service Note
SSC	System, Structure, Component
SSHAC	Senior Seismic Hazard Analysis Committee
TLAA	Time-Limited Ageing Analysis
TPA	Tsunami Probabilistic Analysis
USNRC	United States Nuclear Regulatory Commission's

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5. LTO Safety Case IPP – Appendix A

5.1 Appendix A.1 (LTO IPP Progress Summary – Activities Required Prior to LTO)

Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description	Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Organisation and Management					
SAR updates for LTO	Appendix B in 331-618 Rev.3 (LTO Safety Case) for a list of SAR updates for LTO	Refer to section 6.1 - Table B-1 : SAR updates required prior to LTO.	Refer to section 6.1: Table B-1	Complete	Refer to section 6.1 - Table B-1 : SAR updates required prior to LTO
Compile and submit the final SALTO Ageing Assessment Report (Final)	SALTO project to submit final ageing management report for LTO to the NNR.	SALTO final report submitted to NNR for review.	Dec-23	Complete	NNR review process. Eskom submission: K-29929-E
Update the design classification database with in-scope SSCs that are subject to ageing management requirements in accordance with RG-0027	Update the classification database.	Design database is updated with the in-scope SCCs.	Sep-22	Complete	N/A
	Institute a governance procedure for the database of in-scope SSCs.	Governing procedure is authorised.			

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description		Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Review of EPTB	Reviewing of EPTB to include multi-unit events.		EPTB submitted to NNR via, K-29288-E. Eskom addressed the NNR review comments from letters k29603N and k29702N and submitted via, K-29768-E.	Mar-23	Complete	NNR review process. Eskom submission: K-29768-E
Mechanical TLAA's						
Environmentally Assisted Fatigue	Reactor coolant pumps	Complete reanalysis of TLAA	TLAA complete. NNR review in progress. Eskom submission, K-29903-E.	Jan-24	Complete	NNR review process. Eskom submission: K-29903-E
Environmentally Assisted Fatigue	Reactor pressure vessel internals	Complete reanalysis of TLAA	TLAA complete. NNR reviewed Eskom submission, K-29903-E.	Jan-24	Complete	Eskom addressing NNR comments, k29903N
Environmentally Assisted Fatigue	Pressuriser	Complete reanalysis of TLAA	TLAA complete. NNR review in progress. Eskom submission, K-29903-E.	Dec-23	Complete	NNR review process. Eskom submission: K-29903-E

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description		Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Environmentally Assisted Fatigue	Main coolant lines	Complete reanalysis of TLAA	TLAA complete. NNR review in progress. Eskom submission, K-29903-E.	Jan-24	Complete	NNR review process. Eskom submission, K-29903-E.
Environmentally Assisted Fatigue	Auxiliary lines	Complete reanalysis of TLAA	TLAA complete. NNR reviewed Eskom submission, K-29903-E (EA-23-170).	Jan-24	Complete	Eskom addressing NNR comments, k29903N
Environmentally Assisted Fatigue	Control rod drive mechanism	Complete reanalysis of TLAA	TLAA complete. NNR review in progress. Eskom submission, K-29903-E.	Jan-24	Complete	NNR review process. Eskom submission, K-29903-E.
Environmentally Assisted Fatigue	Pressuriser heater sleeves	Complete reanalysis of TLAA	TLAA complete. NNR reviewed Eskom submission, K-29903-E (EA-24-001).	Dec-23	Complete	Eskom addressing NNR comments, k29903N

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description		Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Crack growth analysis of flaws detected in service -AND-Fatigue and thermal ageing analysis of manufacturing flaws and flow tolerance	Pressuriser spray nozzles	<ul style="list-style-type: none"> · Complete reanalysis of TLAA · Update SAP if required · Complete additional associated TLAA actions if required. 	TLAA complete. NNR reviewed Eskom submission, K-29903-E.	Jan-24	Complete	Eskom addressing NNR comments, k29903N
Reactor pressure vessel internals – thermal ageing and neutron embrittlement	RPV Internals	Develop TLAA (Fast Fracture Analysis)	TLAA complete. NNR reviewed Eskom submission, K-29903-E.	Jan-24	Complete	Eskom addressing NNR comments, k29903N
Reactor pressure vessel internals – vibration	RPV Internals	Complete reanalysis of TLAA	TLAA no longer required. Refer to Engineering justification, EA-23-143. NNR reviewed Eskom submission, K-29836-E. Eskom addressed NNR comments, k29836N and submitted via, K-30058-E.	Dec-23	Complete	NNR review process. Eskom submission: K-30058-E

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description	Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status	
Mechanical – New Ageing Management Programmes						
Selective leaching (AMP120)	Various	Implementation of AMP requirements on SAP (creation of service notifications and update of the working procedures & scheduling for execution)	Development of AMP and SAP updates is complete. Refer to Appendix A.	Jun-24	Complete	N/A
One-time inspections (AMP119)	Various	Implementation of AMP requirements on SAP (creation of service notifications and update of the working procedures & scheduling for execution)	Development of AMP and SAP updates is complete. Refer to Appendix A.	Jun-24	Complete	N/A

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description		Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
One-time inspections class 1 SB piping (AMP121)	Piping	Implementation of AMP requirements on SAP (creation of service notifications and update of the working procedures & scheduling for execution)	Development of AMP and SAP updates is complete. Refer to Appendix A.	Jun-24	Complete	N/A
Primary pressuriser (AMP154)	Pressuriser	Development and Implementation of AMP requirements on SAP (creation of service notifications and update of the working procedures & scheduling for execution)	Development of AMP and SAP updates is complete. Refer to Appendix A.	Jun-24	Complete	N/A

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description		Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Inspection of internal surfaces and internal coatings and linings (AMP157 and AMP135)	Various	Implementation of AMP requirements on SAP (creation of service notifications and update of the working procedures & scheduling for execution)	Development of AMP and SAP updates is complete. Refer to Appendix A.	Jun-24	Complete	N/A
Heat exchanger programme	Various	Implementation of AMP requirements on SAP (creation of service notifications and update of the working procedures & scheduling for execution)	Development of AMP and SAP updates is complete. Refer to Appendix A.	Jun-24	Complete	N/A

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description	Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Mechanical - Existing Ageing Management Programme Update					
Preventive maintenance (PM) programme - Update the PM programme with the required ageing management activities and implement	Various	Update existing PM Programme	Update of existing PM program complete. Loading of service notes on SAP in progress. No risk to LTO because all strategies are developed or updated, and SAP implementation is tracked accordingly at the relevant committees. Refer to Appendix A for detailed update.	Jun-24	On Track
RPV Programme	RPV	Update existing AMP	Update of existing AMP complete. SAP implementation not required. Refer to Appendix A.	Jun-24	Complete
Mechanical – One-Time Inspections					
Orifice cavitation erosion inspections on downstream piping according to the SALTO scope as identified through	Orifice	Perform inspection, evaluate the results, and raise appropriate actions, if	NNR reviewed Eskom submission, K-29836-E.	Outage 126	Complete
					NNR concluded its review on Eskom submission, K-29836-E in letter k29836.1N (EA-23-102 Rev 1).

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description		Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Mechanical AME review (sample)		required, to address any findings.	In progress. The activity poses no risk to LTO.	Outage 226	On Track	
One-time inspection of cabinet bolting (sample)	Bolting (cabinets)	Perform inspection, evaluate the results, and raise appropriate actions, if required, to address any findings	Eskom submission, K-29836-E (EA-23-102 Rev 1). Eskom addressed NNR comments in letter, k29836N and submitted via, K-30058-E.	Outage 126	Complete	NNR review process. Eskom submission: K-30058-E
			In progress. The activity poses no risk to LTO.	Outage 226	On Track	
One-time inspection of the sampled components of the closed treated water systems	Various	Perform inspection, evaluate the results, and raise appropriate actions, if required, to address any findings.	Eskom submission, K-29836-E (EA-23-102 Rev 1). Eskom addressed NNR comments in letters, k29836N and k29836.1N and submitted via, K-30058-E.	Outage 126	Complete	NNR review process. Eskom submission, K-30058-E

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description		Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
One-time inspection of the sampled components of the closed treated water systems	Various	Perform inspection, evaluate the results, and raise appropriate actions, if required, to address any findings.	In progress. The activity poses no risk to LTO.	Outage 226	On Track	
One-time inspection of the mechanical components sampled from various commodity groups according to the SALTO AME	Various	Perform inspection, evaluate the results, and raise appropriate actions, if required, to address any findings.	Eskom submission, K-29836-E (EA-23-102 Rev 1). Eskom addressed NNR comments in letters, k29836N and k29836.1N and submitted via, K-30058-E.	Outage 126	Complete	NNR review process. Eskom submission, K-30058-E
One-time inspection of the mechanical components sampled from various commodity groups according to the SALTO AME	Various	Perform inspection, evaluate the results, and raise appropriate actions, if required, to address any findings.	Execution for balance of activities is in progress. Some inspections were completed in outage 125 and 225. The activity poses no risk to LTO.	Outage 226	On Track	

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description	Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status	
Mechanical Component Replacements						
Refurbish SG snubbers on unit 1	Snubbers on 1 RCP 001 GV 1 RCP 002 GV 1 RCP 003 GV	Refurbish SG snubbers on unit 1	SG snubbers completed during outage 126.	Outage 127	Complete	N/A
Mechanical – Modifications						
Steam generators – unit 1	1 RCP 001 GV 1 RCP 002 GV 1 RCP 003 GV	Steam generators replaced during outage 126.	Steam generator replaced in outage 126.	Outage 126	Complete	N/A
Steam generators – unit 2	2 RCP 001 GV 2 RCP 002 GV 2 RCP 003 GV	Replace steam generators	In progress. The activity poses no risk to LTO.	Outage 226	On Track	

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description	Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Electrical - Equipment qualification replacements (TLAA 201)					
Equipment qualification – EQ Components on Unit 1	Replacement of the following equipment performed on unit 1: <ul style="list-style-type: none"> · 1 KRT 022 MA · 1 KRT 023 MA · 1 RCP 001 PO (140/141 MC) · 1 RCP 002 PO (240/241 MC) · 1 RCP 003 PO (340/ 341 MC) · 1 DVK 100 MP · 1 DVK 101 MP 	All these EQ components were replaced during outage 126.	Outage 126	Complete	N/A
Equipment qualification –EQ Components on Unit 2	Replacement of the following equipment on unit 2: <ul style="list-style-type: none"> · 2 KRT 022 MA · 2 KRT 023 MA · 2 ETY 201 MP · 2 ETY 202 MP – · 2 RCP 001 PO (140/141 MC) · 2 RCP 002 PO (240/241 MC) · 2 RCP 003 PO (340/341 MC) · 2 VVP 127 VV -EL 1/2 · 2 VVP 128 VV – EL 1/2 · 2 VVP 129 VV EL1/2 · 2 DVK 100 MP · 2 DVK 102 MP 	In progress.	Outage 226	On Track	

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description		Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Equipment qualification – requalification of qualified cables	Qualified cables	Perform the re-qualification of EQ cables for LTO.	TAA 331-665 Rev 1 submitted to NNR for review under K-29732-E. Eskom addressed NNR comments in letter k29732N and submitted via, K-30033-E.	Jun-24	Complete	NNR review process. Eskom submission: K-30033-E.
Equipment qualification – EQ Rotork actuators (for MOVs on both units)	Rotork valve actuators	Perform the overhaul of the qualified Rotork Actuators to renew qualification for LTO	Rotork actuators are replaced for unit 1 in outage 126.	Outage 126	Complete	N/A
			In progress.	Outage 226	On Track	
Equipment qualification – MV Cables on RRA Motors on Unit 2	2 RRA 001 MO and 2 RRA 002 MO	Replace the Medium Voltage Cables connected to 2 RRA 001 MO and 2 RRA 002 MO prior to LTO.	In progress.	Outage 226	On Track	

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description		Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Equipment qualification – 10RO renewal of the RPN power range detectors and connection plates	1 RPN 010 MA 1 RPN 020 MA 1 RPN 030 MA 1 RPN 040 MA	Renew the RPN power range detectors and connection plates: · 1 RPN 010 MA · 1 RPN 020 MA · 1 RPN 030 MA and · 1 RPN 040 MA		Outage 126	Complete	N/A
	2 RPN 010 MA 2 RPN 020 MA 2 RPN 030 MA 2 RPN 040 MA	Renew the RPN power range detectors and connection plates: · 2 RPN 010 MA · 2 RPN 020 MA · 2 RPN 030 MA and · 2 RPN 040 MA	In progress.	Outage 226	On Track	

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description	Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status	
Electrical - New Ageing Management Programmes						
Environmental condition monitoring programme (AMP210)	Qualified cables and qualified equipment	Implementation of AMP requirements on SAP (creation of service notifications and update of the working procedures & scheduling for execution)	Development of AMP manual is complete. SAP implementation not required. Refer to Appendix A.	Jun-24	Complete	N/A
Ageing Management Programme for the Electronic Equipment Whiskers and Capacitors (AMP218 and AMP213)	Electronic components	Implementation of AMP requirements on SAP (creation of service notifications and update of the working procedures & scheduling for execution)	Development of AMP manual and refinement is complete. Loading of notifications and service notes on SAP is in progress. No risk to LTO because the AMP is developed, and SAP implementation is tracked accordingly at the relevant committees. Refer to Appendix A for detailed update.	Jun-24	On Track	

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description		Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Ageing Management Programme for Lightning Protection and Grounding Grid at KNPS (AMP220)	Lightning protection systems and grounding systems	Implementation of AMP requirements on SAP (creation of service notifications and update of the working procedures & scheduling for execution)	Development of AMP manual and AMP refinement complete. SAP implementation not required. Refer to Appendix A.	Jun-24	Complete	N/A
Ageing Management of Switchboards Associated Switchgear Components and their Metal Enclosures (AMP212 and AMP215)	Switchgear and cabinets	Implementation of AMP requirements on SAP (creation of service notifications and update of the working procedures & scheduling for execution)	Development of AMP manual and refinement complete. SAP implementation not required. Refer to Appendix A.	Jun-24	Complete	N/A

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description	Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Electrical - Existing Ageing Management Programme Updates					
Cable ageing management programme (CAMP)	Implementation of updated AMP requirements on SAP (creation of service notifications and update of the working procedures & scheduling for execution)	Inspection and testing of cables have been completed in outages 125 and 225 and results evaluated. Update of existing AMP requirements is complete and AMP manual is authorised. CAMP implementation strategy has been developed and issued to the line groups. Implementation of SAP IMPs is in progress. Refer to Appendix A for detailed update.	Jun-24	On Track	
Equipment qualification programme	Implementation of updated AMP requirements on SAP (creation of service notifications and update of the working procedures & scheduling for execution)	SAP implementation actions have been raised to align requirements with updated AMP. Update of existing AMP requirements is complete and AMP manual is authorised. SAP implementation is in progress and tracked accordingly at the relevant committees. Refer to Appendix A for detailed update.	Jun-24	On Track	

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description		Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Technological Obsolescence Programme	Implementation of the proactive Technological Obsolescence Programme.			Jun-24	Complete	Complete
Electrical - One-Time Inspections						
One-time inspection (internal and external visual inspection) of electrical cabinets and control boxes on a sample basis	Sampled scope including electrical cabinets (AR) and control boxes (CR)	Perform inspection, evaluate the results, and raise appropriate actions, if required, to address any findings.	Inspections and evaluations are complete. Evaluation report EA-22-141, submitted to NNR under K-29836-E. Eskom addressed comments in NNR letter k29836N and submitted via, K-30058-E.	Outage 126	Complete	NNR review process. Eskom submission: K-30058-E
			Inspections are all complete. Evaluations are in progress.	Outage 226	On Track	

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description		Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
One-time inspection (internal visual inspection) to identify the presence of whiskers on the electronic components, printed circuit boards and transmitters	Sampled scope including Electronic Cards (ZO, CA, XU) and Transmitters (MN, MD, MP)	Perform inspection, evaluate the results, and raise appropriate actions, if required, to address any findings.	Inspections and evaluations are complete. Evaluation report, EA-22-141 submitted to NNR under K-29836-E. Eskom addressed comments in NNR letter k29836N and submitted via, K-30058-E.	Outage 126	Complete	NNR review process. Eskom submission: K-30058-E
			Inspections are all complete. Evaluations are in progress.	Outage 226	On Track	
Civil Ageing Management Issues – Ageing of Aseismic Bearings						
Ageing and Testing of Aseismic Bearings	Aseismic Bearings	Perform characterisation of the aseismic bearings.	331-645 Rev 2 was submitted to NNR under K-29620-E. Eskom addressed NNR comments in letter, k29620N and submitted via, K-29905-E.	Jun-24	Complete	NNR review process. Eskom submission: K-29905-E.

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description	Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Civil – New Ageing Management Programmes					
Civil Ageing Management Programme Requirements Manual (CAMPRM) - (AMP306)	Implementation of AMP requirements on SAP (creation of service notifications and update of the working procedures & scheduling for execution)	Requirements developed and AMP manual authorised. No new service notes or SAP implementation is required. Refer to Appendix A.	Dec-23	Complete	N/A
Non-metallic liners (AMP309)	Implementation of AMP requirements on SAP (creation of service notifications and update of the working procedures & scheduling for execution)	AMP authorised and refinement of tasks complete. No new service notes or SAP implementation is required. Refer to Appendix A.	Dec-23	Complete	N/A
Ageing management programme for aseismic bearings	Develop and implement an AMP. (Creation of service notifications and update of the working procedures & scheduling for execution)	An overview of the AMP is developed for the aseismic bearings (331-675). Submitted to the NNR via K-29620-E for review. No new service notes or SAP implementation is required.	Jan-24	Complete	NNR review: 331-675 Eskom submission: K-29620-E

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description	Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Civil – Existing Ageing Management Programme Updates					
Civil monitoring programme	Implementation of AMP requirements on SAP (creation of service notifications and update of the working procedures & scheduling for execution)	AMP authorised. Two programme procedures (KAU-030 and KAA-671) approved by NNR (Ref no. NAPP11B086 – 7 Feb 23).	Dec-23	Complete	NNR Approved
		Loading of service notes on SAP in progress. Refer to Appendix A for detailed update.		On Track	
Civil – One-Time Inspection					
Perform a one-time inspection of the fibre-reinforced polymer vent stack to ascertain the condition w.r.t ageing effects, change in material properties, cracking due to UV radiation, loss of mechanical properties due to elevated temperature, oxygen,	Perform inspection of 9HNA000BG, evaluate the results, and raise appropriate actions, if required, to address any findings		Dec-23	Complete	Eskom submission: K-29836-E NNR reviewed: EA-23-150 Rev 1

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description	Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
<p>and alternating loads or ozone. The results of the one-time inspection will inform further action</p> <p>1) Auxiliary buildings chimney fibre-reinforced polymer room outdoor</p>					
<p>To check for soundness, perform a one-time inspection of the post-installed threaded fasteners, bolts, studs, nuts, washers, and screws (without ECS code). Refer to the following commodity spreadsheets attached for locations.</p> <p>1) Auxiliary buildings, any civil room controlled</p>	<p>Perform inspections of the following, evaluate the results, and raise appropriate actions, if required, to address any findings</p> <ul style="list-style-type: none"> · 38-1HKA000BG · 38-2HKA000BG · 38-9HLX000BG · 38-9HNA000BG · 38-2HLX000BG · 38-1HLX000BG · 38-1HWX000BG · 38-2HWX000BG 		Dec-23	Complete	<p>Eskom submission: K-29836-E NNR reviewed: EA-23-150 Rev 1</p>

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description	Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
2) Auxiliary buildings, any civil room indoor temp hot 35°C					
Perform a one-time inspection of 5% of embedded frames linked to ageing commodities (33, 33a, 34, 34a, 35 and 36) for general corrosion, chloride-induced corrosion, and the effect of "loss of material" which will inform any additional action to be taken. Refer to the following commodity spreadsheets attached for locations. 1) Auxiliary buildings penetrations room controlled 2) Auxiliary building penetrations room indoor temp hot 35°C	Perform inspections of the following, evaluate the results, and raise appropriate actions, if required, to address any findings. <ul style="list-style-type: none"> · 38-1HLX000BG · 38-2HLX000BG · 38-9HLX000BG · 38-1HKA000BG · 38-2HKA000BG · 38-9HNA000BG · 38-1HRX000BG · 38-2HRX000BG · 38-6HQB000BG · 38-1HDA000BG · 38-2HDA000BG · 38-1HDB000BG · 38-2HDB000BG 		Dec-23	Complete	Eskom submission: K-29836-E NNR reviewed: EA-23-150 Rev 1

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description	Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
3) Auxiliary buildings penetrations room indoor uncontrolled 4) Auxiliary buildings penetrations room outdoor 5) Any civil penetrations room controlled 6) Any civil penetrations room indoor temp hot 35°C 7) Anti-seismic area penetrations room outdoor					
Perform one-time inspections of the post-installed threaded fasteners like bolts, studs, nuts, washers, and screws (without ECS codes) to check for soundness/integrity	Perform inspections of the following, evaluate the results, and raise appropriate actions, if required, to address any findings · 38-1HRX000BG · 38-2HRX000BG		Dec-23	Complete	Eskom submission: K-29836-E NNR reviewed: EA-23-150 Rev 1

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description	Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
<p>Perform a one-time inspection of bolting and supports of the pre-cast concrete elements to check for soundness/integrity. Refer to the following commodity spreadsheets attached for locations.</p> <p>1) Containment building structures concrete room controlled</p> <p>2) Containment building structures concrete room indoor temp hot 35°C</p>	<p>Perform inspections, evaluate the results, and raise appropriate actions, if required, to address any findings</p> <ul style="list-style-type: none"> · 38-1HRX000BG · 38-2HRX000BG 		<p>Dec-23</p>	<p>Complete</p>	<p>Eskom submission: K-29836-E NNR reviewed: EA-23-150 Rev 1</p>

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Table A.1-1: Ageing management LTO preparation activities

Activity Title	Activity Description	Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Perform one-time inspections of the post-installed threaded fasteners like bolts, studs, nuts, washers, and screws (without ECS codes) to check for soundness/integrity	<ul style="list-style-type: none"> · 38-1HRX000BG · 38-2HRX000BG 		Dec-23	Complete	Eskom submission: K-29836-E NNR reviewed: EA-23-150 Rev 1
Civil – Safety Assessment					
Safety Assessment for the LLWB	Perform a detailed safety assessment for the low-level waste building to store low and intermediate level waste – short lived (LILW-SL).	LLWB safety report (NSIP04324 Rev 0) submitted to NNR, K-29293-E. NSIP04324 Rev 0 draft 2 submitted via, K-29887-E. Eskom currently addressing NNR comments, k29887N. The activity poses no risk to LTO as there is no 40-year life limit to the LLWB.	2023	Complete	Eskom submission: K-29887-E Eskom is currently addressing NNR comments in letter k29887N.

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Table A.1-2: LTO preparation activities – DSSR and interim seismic hazard analysis

Activity Title	Activity Description	Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Submit updated DSSR	Update the DSSR for KNPS.	An updated DSSR including reports on the PSHA and the PTHA was submitted to the NNR on the 15 th March 2024 via NAPP10A0069.	Mar-24	Complete	Eskom submission: NAPP10A0069
Perform the masonry wall hardening modification identified in the interim Seismic Evaluation.	The reinforcement aims to mitigate the bending mode of failure during a seismic event.	The execution of the work has started and is in progress with the unit 9 walls. This is an online modification and is targeted to be completed by July 2024. The activity is not a 40-year life limitation and poses no risk to LTO. Refer to section 7.	Jul-24	On Track	
Tsunami probabilistic analysis (return frequency study)	Determine the exceedance frequency of a potential tsunami with a magnitude that may impact the safe operations of Koeberg.	The PTHA report was submitted to the NNR on the 15 th March 2024 via NAPP10A0069.	Mar-24	Complete	Eskom submission: NAPP10A0069

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Table A.1-3: TLAA's reanalysed and processed for NNR submission

Item - IGALL Reference	Components	Description of TLAA	Progress / Readiness	Safety Case Commitment Date	Activity Status	NNR Status
1 - 106	Pressuriser	Environmentally Assisted Fatigue		Aug-22	Complete	NNR review Eskom submission: K-29903-E
2 - Additional TLAA	Reactor pressure vessel	Reactor Pressure Vessel PWSCC	Eskom responded to NNR comments in K29705N, via letter K-29823-E.		Complete	Eskom submission: K-29823-E Eskom addressing NNR comments, k29823N
3 - Additional TLAA	Reactor pressure vessel	Reactor Pressure Vessel	Eskom responded to NNR comments in K29705N, via letter K-29823-E.		Complete	NNR review Eskom submission: K-29823-E
4 -112	Reactor coolant pump flywheel	Reactor Coolant Pump Flywheel	Eskom responded to NNR comments in K29705N, via letter K-29823-E.		Complete	NNR noted and accepted Eskom's response in letter, K-29823-N
5 - 201	RIC in-core thermocouples Cables	Equipment Qualification	Eskom responded to NNR comments in K29705N, via letter K-29823-E.		Complete	NNR noted Eskom's response in letter, K-29823-N
	Rotork Valve Actuators		Eskom responded to NNR comments in K29705N, via letter K-29823-E.		Complete	Eskom submission: K-29823-E Eskom addressing NNR comments, k29823N

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Table A.1-3: TLAAs reanalysed and processed for NNR submission

Item - IGALL Reference	Components	Description of TLAAs	Progress / Readiness	Safety Case Commitment Date	Activity Status	NNR Status
	Valcor Solenoid Valves		Eskom responded to NNR comments in K29705N, via letter K-29823-E.		Complete	Eskom submission: K-29823-E Eskom addressing NNR comments, k29823N
	EBA AMRI Actuators - Type C AMRI		Eskom responded to NNR comments in K29705N, via letter K-29823-E.		Complete	Eskom submission: K-29823-E Eskom addressing NNR comments, k29823N
	Jeumont-Schneider		Eskom responded to NNR comments in K29705N, via letter K-29823-E.		Complete	NNR review Eskom submission: K-29823-E
6 - 108	Polar Crane	Polar Crane	Eskom responded to NNR comments in K29705N, via letter K-29823-E.		Complete	Eskom submission: K-29823-E Eskom addressing NNR comments, k29823N
7 - 301	Strain Gauges	Containment	Eskom submission, K-29772-E.		Complete	Eskom addressing NNR comments, k29772N
	Dynamometers		Eskom submission, K-29772-E.		Complete	Eskom addressing NNR comments, k29772N

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Table A.1-3: TLAAs reanalysed and processed for NNR submission

Item - IGALL Reference	Components	Description of TLAA	Progress / Readiness	Safety Case Commitment Date	Activity Status	NNR Status
	Pendulums		Eskom submission, K-29772-E.		Complete	Eskom addressing NNR comments, k29772N
	Temperature Gauges		Eskom submission, K-29772-E.		Complete	Eskom addressing NNR comments, k29772N
	Concrete Inspections and Repairs		Eskom submission, K-29772-E.		Complete	Eskom addressing NNR comments, k29772N

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Table A.1-4: LTO preparation activities – SAR updates for other safety-related programmes

Activity Title	Activity Description	Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
KM Implementation at Nuclear Engineering	Development of NOU KM standard and completion of risk assessments for all staff over 60-years.	NOU KM standard is authorised. The risk assessments for all staff over 60 years are complete.	Jul-24	Complete	N/A
KM Implementation at Operating Department			Jul-24	Complete	N/A
KM Implementation at Chemistry			Jul-24	Complete	N/A
KM Implementation at Maintenance			Jul-24	Complete	N/A
KM Implementation at Radiation Protection			Jul-24	Complete	N/A
KM Implementation at NPM			Jul-24	Complete	N/A

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5.2 Appendix A.2 (LTO IPP Progress Summary – Activities Planned for After July 2024)

Table A.2-1: Activities After LTO Implementation – Ageing Management

Activity Title	Activity Description		Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Mechanical Component Replacements						
Refurbish SG snubbers on unit 2	Snubbers on 2 RCP 001 GV 2 RCP 002 GV 2 RCP 003 GV	SAP notification raised for refurbishment for the current snubbers	Manufacturing of new snubbers is in progress. Installation design is in progress and planned to be completed in April 2024. Spares are planned to be available in September 2025. There is no risk to LTO since unit expiry date is November 2025.	Outage 227	On Track	
Electrical - Modifications						
PZR heater replacement	1/2 RCP 005 and 006 RS	Implement modification 13028 (EZP) – replacement of pressuriser heaters 1/2 RCP 005 and 1/2 RCP 006 RS	Implementation safety case approved by NNR. Eskom submitted TLAA 331-687 Rev 1 (K-29732-E) and addressed NNR comments, k29732.1N and submitted via, K-30035-E.	Outage 127	On Track	NNR review process. Eskom submission: K-30035-E.

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Table A.2-1: Activities After LTO Implementation – Ageing Management

Activity Title	Activity Description		Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Containment C&I penetrations	1/2 EPP 513, 515, 520, 521, 529 and 530 TW	Implement modification 16001 (RCP) – replacement of the electrical penetrations on unit 1 and unit 2	Implementation safety case approved by NNR. Eskom submitted TLAA 331-688 Rev 1 (K-29732-E) and addressed NNR comments, k29732.2N and submitted via, K-30034-E.	Outage 127 and 227	On Track	NNR review process. Eskom submission: K-30034-E.
Equipment qualification – RIC Thermocouples (TC) and TC connectors and cables on unit 1	1 RIC 001 MT – 051 MT	Replace the RIC cables and associated connector on Unit 1 with qualified cables.	The replacement of the cables and connectors are on track for outage 127. TLAA, 331-696 Rev 1 completed and submitted for review to NNR. TLAA demonstrated that the qualified life of existing cables and connectors remains valid until replaced in outage 127. Eskom addressed NNR comments in letter, k29836N and k29836.1N and submitted via, K-30058-E.	Outage 127	On Track	NNR review process. Eskom submission: K-30058-E

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Table A.2-1: Activities After LTO Implementation – Ageing Management

Activity Title	Activity Description	Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Civil – Containment Structure Testing					
Containment Integrated Leak Rate Testing (ILRT)	Perform containment ILRT test to confirm containment structural integrity.	Contract placed with EDF. Establishing the ILRT team. Finalisation of the strategy and test document in progress. There is no risk associated with this test as it is conducted in accordance with the ISI programme requirements.	Outage 127 and 227	On Track	
Civil – Modifications and Replacements					
Impressed Current Cathodic Protection (ICCP)	Implementation of the ICCP modification into the concrete of the containment buildings to neutralise the effects of chloride ingress.	Detailed design of mock-up is complete. Mock-up design awaiting approval. Eskom addressing NNR comments on detailed design, k29899N.	2025	On Track	

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Table A.2-2: Activities After LTO Implementation – PSR IIP Safety Improvements

Activity Title	Activity Description	Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Restore the control room envelope (CRE) to be within design basis limits.	CRE scope includes the unfiltered in-leakage test and radiological consequence studies. Work scope is de-linked from SGR and LTO.	The schedule has been submitted to the NNR (K-29361-E) and the target completion date is Q2 2024.	PSR IIP commitment date: June 2027	On Track	

Table A.2-3: Activities After LTO Implementation – Interim Seismic Hazard Analysis Strategy

Activity Title	Activity Description	Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Hardened Water External Connection Points (Modification 12004)	Construction of two new pipelines from the existing SEP reservoir and the new hardened water storage tanks to the relevant plant SSCs.	The safety class detailed design approval and submission to the NNR are targeted for May 2024. The civil detailed design approval and submission to the NNR is targeted for May 2024.	Online Oct-25	At Risk	
		All civil work will be performed online and targeted to start in October 2024. Procurement of material in progress. Project is on schedule to complete unit 1 online and outage-related work by the end of Outage 127. Unit 2 online and outage-related work scope will be completed by the end of Outage 227.	Outage 127 and 227	At Risk	

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Table A.2-3: Activities After LTO Implementation – Interim Seismic Hazard Analysis Strategy

Activity Title	Activity Description	Activity Progress	Safety Case Commitment Date	Activity Status	NNR Status
Hardened Water Supply (Modification 12008)	Construction of two new hardened water supply tanks to store sufficient water for cooling during a design extension condition (DEC) event.	<p>The civil detailed design was accepted by the NNR.</p> <p>The mechanical detailed design approval and submission to the NNR is targeted for April 2024.</p> <p>Civil installation safety case is planned to be submitted in April 2024.</p> <p>Mechanical installation safety case is planned to be submitted in August 2024.</p> <p>Installation contract is in progress and planned to be placed by end of March 2024.</p>	Jan-25	At Risk	
Install Primary Pump Shutdown Seals (Modification 12023)	Replace the inserts of the existing primary pump No. 1 seal with modified versions, along with the modification of the No. 2 seal runner sleeve as part of the upgrade.	<p>Installation of the seals on unit 2 is currently in progress and will be completed in outage 226.</p> <p>Installation contract for unit 1 will be placed in April 2024, and targeted for installation in outage 127.</p>	Outage 127 and 227	On Track	

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6. LTO Safety Case IPP – Appendix B

6.1 Appendix B.1 (SAR Updates Required Prior to LTO)

Table B-1: LTO preparation activities - SAR updates

This table extracts and consolidates the SAR-specific updates in [Appendix A.1](#), (*LTO Integrated Preparation Plan*).

Activity Title	SAR Chapter	Date	Status Update
Decommissioning description	I-1.2 I-4.0 I-7.0	Sep-22	Complete Eskom submission: K-28699-E (CN-315)
Update of activity migration model (AMM) as well as AADQs	II-5.1 II-5.2 II-5.3 III-4.1 III-5.1 III-5.3	Dec-23	Complete Eskom submissions: 1 st : K-29878-E (CN-335 and 336) 2 nd : K-29948-E (CN-341) 3 rd : K-30020-E (request for the review and acceptance of the AMM update supporting documents) 4 th : K-30055-E (Eskom response to NNR comments, k29948N)
Low-level waste building inclusion.	I-3.0	Jun-23	Complete Eskom submission: K-29957-E (CN-342)
Update the SAR with new site characteristics description	I-2.0	Mar-24	Complete Eskom submission: K-29947-E (CN-340)

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Table B-1: LTO preparation activities - SAR updates

This table extracts and consolidates the SAR-specific updates in [Appendix A.1](#), (*LTO Integrated Preparation Plan*).

Activity Title	SAR Chapter	Date	Status Update
Update the SAR with the description of ageing management	I-4.0 I-4.4.1 I-4.4.2 I-4.4.2.1 I-4.4.2.2 I-4.4.2.2.1 I-4.4.2.2.2 I-4.4.2.2.3 I-4.4.2.2.4 I-4.4.2.3 I-4.4.3	Dec-24	Complete Eskom submission: K-28700-E (CN-312)
Update SAR with a list of updated TLAAs	I-4.0	Jun-23	Complete Eskom submission: K-28700-E (CN-312)
Revise and update 40-year statements Note: This activity was not part of Appendix B of 331-618 rev 3 as it was envisaged to be completed before the submission of the LTO safety case rev. 3.	I-3.0 II-1.7 II-1.11 II-2.2 II-3.2 II-3.3.2 II-3.3.5 II-3.3.6 II-3.3.8 II-6.3 III-3.1 III-5.1	Feb-24	Complete Eskom submissions: 1 st : K-29958-E (CN-343) 2 nd : K-29984-E (CN-344)

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Table B-1: LTO preparation activities - SAR updates

This table extracts and consolidates the SAR-specific updates in [Appendix A.1](#), (*LTO Integrated Preparation Plan*).

Activity Title	SAR Chapter	Date	Status Update
Mechanical TLAA Updates			
EAF – Reactor coolant pumps	II-3.1.2.3 II-3.3.2 II-3.3.2.1 II-3.3.2.2 II-3.3.2.4 II-3.3.2.4.2 II-3.3.2.6	Jan-24	Complete Eskom submission: K-29946-E (CN-2001)
EAF – Reactor pressure vessel internals	II-3.1.2.1 II-3.3.1 II-3.3.1.5 II-3.3.1.11	Jan-24	Complete Eskom submission: K-29946-E (CN-2001)
EAF – Pressuriser	II-3.3.5 II-3.3.5.1.1 II-3.3.5.1.2 II-3.3.5.1.4 II-3.3.5.3 II-3.3.5.4 II-3.3.5.10 II-3.3.5.10.1 II-3.3.5.10.2	Jan-24	Complete Eskom submission: K-29946-E (CN-2001)

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Table B-1: LTO preparation activities - SAR updates

This table extracts and consolidates the SAR-specific updates in [Appendix A.1](#), (*LTO Integrated Preparation Plan*).

Activity Title	SAR Chapter	Date	Status Update
EAF – Main coolant lines	II-3.3.4 II-3.3.4.1 II-3.3.4.3 II-3.3.4.5 II-3.3.4.11 II-3.3.4.11.1	Jan-24	Complete Eskom submission: K-29946-E (CN-2001)
EAF – Auxiliary lines	II-3.1 II-3.1.2.4 II-3.3.5 II-3.4 II-4.3 II-5.1 II-5.1.2.1 II-7.1	Jan-24	Complete Eskom submission: K-29946-E (CN-2001)
EAF – Control rod drive mechanism	II-3.3.7 II-3.3.7.1 II-3.3.7.3 II-3.3.7.5	Jan-24	Complete Eskom submission: K-29946-E (CN-2001)

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Table B-1: LTO preparation activities - SAR updates

This table extracts and consolidates the SAR-specific updates in [Appendix A.1](#), (*LTO Integrated Preparation Plan*).

Activity Title	SAR Chapter	Date	Status Update
EAF – Pressuriser heater sleeves (extra)	II-3.3.5 II-3.3.5.1.1 II-3.3.5.1.2 II-3.3.5.1.4 II-3.3.5.3 II-3.3.5.4 II-3.3.5.10 II-3.3.5.10.1 II-3.3.5.10.2	Jan-24	Complete Eskom submission: K-29475-E (CN-2000)
Pressuriser spray nozzles – Crack growth analysis of flaws detected in service –AND–Fatigue and thermal ageing analysis of manufacturing flaws and flow tolerance	II-3.3.5 II-3.3.5.1.1 II-3.3.5.1.2 II-3.3.5.1.4 II-3.3.5.3 II-3.3.5.4 II-3.3.5.10 II-3.3.5.10.1 II-3.3.5.10.2	Jan-24	Complete Eskom submission: K-29946-E (CN-2001)
Reactor pressure vessel PWSCC and RPV PTS	II-3.1.2.1 II-3.3.1 II-3.3.1.5 II-3.3.1.11	Aug-23	Complete Eskom submission: K-29475-E (CN-2000) K-29984-E (CN-344) K-30049-E (supporting docs for CN-344): 11 Mar 24

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Table B-1: LTO preparation activities - SAR updates

This table extracts and consolidates the SAR-specific updates in [Appendix A.1](#), (*LTO Integrated Preparation Plan*).

Activity Title	SAR Chapter	Date	Status Update
Reactor pressure vessel wear of adaptor flanges – CRDM pressure housing assembly stress report	II-3.1.2.1 II-3.3.1 II-3.3.1.5 II-3.3.1.11	Jun-23	Complete Eskom submission: K-29475-E (CN-2000)
Reactor pressure vessel internals – thermal ageing and neutron embrittlement	II-3.1.2.1 II-3.3.1 II-3.3.1.5 II-3.3.1.11	Jun-23	Complete Eskom submission: K-29475-E (CN-2000)
Reactor pressure vessel internals – vibration	II-2.5.2.4	Jun-23	Complete Eskom submission: K-29475-E (CN-2000)
Reactor coolant pump flywheel	II-3.1.2.3 II-3.3.2 II-3.3.2.1 II-3.3.2.2 II-3.3.2.4 II-3.3.2.4.2 II-3.3.2.6 II-3.3.2.6.6	Jun-23	Complete Eskom submission: K-29475-E (CN-2000)
Electrical TLAA Updates			
Equipment Qualification – Qualified life of EQ components and preservation of qualification	II-1.11	Jun-23	Complete Eskom submission: K-29475-E (CN-2000)

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Table B-1: LTO preparation activities - SAR updates

This table extracts and consolidates the SAR-specific updates in [Appendix A.1](#), (*LTO Integrated Preparation Plan*).

Activity Title	SAR Chapter	Date	Status Update
Civil TLAA Updates			
Polar crane – fatigue of cranes	II-8.5 II-8.5.1 II-8.5.2 II-8.5.3 II-8.5.5	Jun-23	Complete Eskom submission: K-29475-E (CN-2000)
Re-analysis of the Koeberg containment	II-1.9.2.5.2.1 II-1.9.2.8 II-4.2.2	Jun-23	Complete Eskom submission: K-29475-E (CN-2000)

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7. Outstanding Activities for Entry into LTO (Unit 1)

The following are noted as the outstanding actions to be completed before 21 July 2024:

- a) Implementation of the masonry block wall strengthening modification. The work is prioritised and targeted for completion before 21 July (unit 1 and 9).
- b) Implementation of PMs and AMPs onto SAP. All activities planned for x27 have been implemented on SAP. The remaining service notification will be implemented on SAP by June 2024. See detail in Appendix A.

8. Outstanding NNR Review Comments

NNR Letter No.	Title
k29772N	TLAA 301 Response to k29021N and k28880N
k29887N	Address Comments to LLWB Safety Assessment Report
k29903N	LTO last remaining TLAAs completed (EAF Analysis)
k29947N	Submission of SAR change notices: CN-340: Duynfontyn Site Safety Report - DSSR

9. Conclusion

The safety assessments conducted by KNPS that have culminated in 331-618 ‘Safety Case for Long-Term Operation of Koeberg Nuclear Power Station’ [2], demonstrate that Koeberg meets the requirements for LTO and is ready for a favorable decision on the license application.

The safety improvement actions required to support LTO have been identified, scheduled and have satisfactorily progressed as demonstrated in this document. The remaining actions required to be completed prior to LTO do not present a risk for a successful license application. All the required submissions to the NNR to satisfy the commitments in the LTO IPP have now been completed. There are no outstanding commitments that require NNR submission prior to LTO.

The request to separate the operating timelines on Koeberg unit 1 and unit 2 has been approved.

It is thus concluded through the progress presented in this document that Eskom (and KNPS) has made adequate progress on the LTO IPP actions and is prepared to receive the NNR approval for the LTO license once the NNR is satisfied that Koeberg meets the LTO requirements.

10. Acceptance

This document has been seen and accepted by:

Name	Designation
N/A	

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11. Revisions

Date	Rev.	Compiler	Remarks
September 2023	1	F Hendricks	This is the first compilation. The document has been compiled to provide a status overview on the progress of all LTO related activities.
March 2024	2	F Hendricks	The document has been revised to reflect the most recent status updates.

12. Development Team

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

- B Oaker – LTO Engineering Consultant
- S Saban – LTO Engineering Consultant

13. Acknowledgements

None.

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Appendix A - AMP and PM SAP Implementation Update

- AMP and PM SAP Implementation Update The implementation of AMP and PM Programme requirements on SAP follows existing work management processes, viz KAA-820, 'Updating the Work Management Planning Database'. Aspects of the implementation process such as the Service Note (SN) review phase is facilitated via an electronic workflow established on MS Teams.
- The plan for AMP and PM implementation is documented in the Koeberg Integrated Programme Implementation Plan approved by the Program Oversight Committee (POC). Oversight on the progress of implementation is provided at the weekly Programme Implementation working group forum, as well as SALTO Management Oversight Committee (SMOC) and LTO review committee forums.
- For AMPs with recurring requirements, an action of type SAP IMP is raised on Devonway to track implementation of SNs on SAP. Where service notes are still in the process of being implemented on SAP and are intended for execution during outages 127 and 227, notifications have been raised on SAP to ensure inclusion into the relevant outage. New Service Notes implemented on SAP prior to outage scope freeze dates, are force downloaded to ensure inclusion in the relevant outage.
- AMPs with once-off requirements do not follow the SN implementation process. Instead, notifications are raised on SAP, and GAs raised on Devonway to track their implementation on SAP. Results from once-off inspections can be used to determine future inspection requirements in accordance with the relevant AMP manual.
- For PM recurring tasks, SAP IMPs were raised on DevonWay for each of the line groups to track implementation of the Service Notes (SN) on SAP. For those tasks with first execution targeting outages 127/227, notifications were raised on SAP to ensure inclusion into the appropriate outage and to facilitate planning and preparation for the outages.
- As the SN implementation process can require up to fifteen (15) signatures, it is abstracted to four (4) main phases to provide a high-level perspective on relative progress through the implementation process. These four phases are represented in the tables below by columns titled SN Compilation, SN Review Phase, Implementing and Implemented.
- Implementing refers to when a compiled SN has progressed through all the reviews and is now with the Work Control Group for implementation on SAP. Once the SN is fully implemented on SAP, it is reflected as Implemented.

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The following table summarises the status quo of new and updated AMP implementation as of 8 March 2024:

AMP Reference	Implementation Scope	Frequency	SN Compilation	SN Review Phase	Implementing	Implemented	Notes
New AMPs							
AMP 119	626 notifications	Once-off	-	-	-	100%	
AMP 120	10 notifications	Once-off	-	-	-	100%	
AMP 121	75 notifications	Once-off	-	-	-	100%	
AMP 135+157	31 notifications	Once-off	-	-	-	100%	
AMP 137 (NEPP)	2 notifications	Once-off	-	-	-	100%	2 confirmatory inspections executed, and results submitted to the NNR
AMP 154	21 notifications	Once-off	-	-	-	100%	
AMP 156 (NEPP)	None	-	-	-	-	-	No new requirements identified, see CR 116340-007 CA
AMP 210	None	-	-	-	-	-	No new requirements identified
AMP 212+215	None	-	-	-	-	-	No new requirements identified
AMP 213+218	88 SAP IMPs	Recurring	0%	19%	42%	39%	
AMP 220	8 notifications	Once-off	-	-	-	-	All actions are online inspections for Engineering (MRG), and will be performed under notification.
AMP 306	Incorporated into Civil monitoring programme. See CivMP below.						
AMP 309	None	-	-	-	-	-	No new requirements identified
Updated AMPs							
EQ	6 SAP IMPs	Recurring	67%	33%	0%	0%	Total scope includes 3 new SAP Imps added following NNR TLAA review feedback.
CAMP	121 SAP IMPs	Recurring	5%	69%	4%	22%	
Heat Exchanger Management Programme	12 notifications	Once-off	-	-	-	100%	
RPV	None	-	-	-	-	-	No new requirements identified currently.
CivMP	13 SAP IMPs	Recurring	15%	85%	0%	0%	Due to legal and CURA risk requirements, 9 CivMP requirements were previously executed under once-off notifications.

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The following table summarises the status quo of implementation of PM Programme updates as of 8th March 2024:

Implementation Scope	Frequency	SN Compilation	SN Review phase	Implementing	Implemented	Notes
PM Updates – New Tasks						
2252	Various	12%	31%	22%	35%	
PM Updates – Frequency Changes						
298	Various	-	16%	0%	84%	

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