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| <b>TITLE</b><br>KOEBERG NUCLEAR POWER STATION ; QAULTY ASSURANCE DEPARTMENT<br>NUCLEAR SAFETY CULTURE<br>QA AUDIT REPORT - A104 (AU39424) |
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|--|

**CHIEF NUCLEAR OFFICER :**

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Ref: 20-14 rcs

**NUCLEAR SAFETY CULTURE  
QA AUDIT REPORT – A 104 (AU 39424)**

Thank you for your cooperation and assistance during the above mentioned audit. Please find attached the above report. The report contains 15 nonconformities, 19 observations and 5 good practices.

The audit activity was captured on Devonway as AU 39424.

The nonconformities were captured as Condition Reports, CR 113998 to CR11399, CR 114001 to CR 114013. Each CR requires a formal response by way of an assessment reports. The assessment report and agreed corrective actions will then be captured by the responsible line group and tracked to completion via Devonway.

The observations were captured on Devonway as General Actions, AU 39424-001 QA to AU 39424-019 QA. The General Actions require a formal response, to be captured on Devonway within sixty days from the date initiated. The resolution and closure of the General Actions rest with the assigned group.

The good practices were captured on Devonway as General Actions, AU 39424-020 QA to AU 39424-024 QA. Please note that there are no specific actions required for these general actions, but it is recommended that the areas of good practice be highlighted and shared within the organisation, thereby supporting continual improvement.

Please address all correspondence to the QA manager, for attention of the team leader-Rowena Simons at +27 21 550 4383.

Kind regards,



**J BEKE  
QUALITY ASSURANCE MANAGER**

CC: As per the distribution list on the report



# KOEBERG NUCLEAR POWER STATION

## QUALITY ASSURANCE DEPARTMENT

### AUDIT REPORT

#### CONTROLLED DISCLOSURE

#### A104 Nuclear Safety Culture (NSC)

**AU 39424**

Revision: 0

Issue Date: 08 May 2020

Compiled by: Team Leader

Reviewed by: Independent QA Reviewer

Authorised by: QA Manager

R Simons

H Hellström

J Bele

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## 1. Executive Summary

### 1.1 Introduction

This audit forms part of the Quality Assurance Monitoring Schedule (QAMS) for 2020.

### 1.2 Audit objective

The audit assessed compliance to the Quality Management System (QMS) and Koeberg Licensing Basis Manual (KLBM) requirements which impacts on the establishment and maintenance of the Nuclear Safety Culture (NSC) Programme across the Nuclear Operating Unit (NOU):

The following NSC process areas were evaluated in order to provide assurance that the NOU NSC programme and the related culture has been maintained, through continuous monitoring and improvement:

- The role and function of applicable Management Committees across the NOU in maintaining the required oversight of the NSC Programme;
- Functional area processes which establish, promote and support the implementation of various NSC Enhancement Plans;
- Monitoring of NSC Health across the NOU in order to support continuous improvement and enhancement of NSC.
- In addition, applicable stakeholder interfaces which may impact or be impacted by the NSC process, including interfaces with the National Nuclear Regulator (NNR), were evaluated.
- An effectiveness review of QA findings previously raised within the noted area was performed.

### 1.3 Audit scope

The Safety Culture Enhancement Programme (SCEP) for the following business areas (BAs) were assessed:

- Koeberg Nuclear Power Station;
- Nuclear Engineering;
- Nuclear Project Management;
- Nuclear Commercial.

The following exclusions were noted as part of this audit:

- The assessment of Supplier Safety Culture Enhancement Programmes have been excluded from the audit scope, as it was covered in QA audit A79 (2017), titled, *Nuclear Supplier Management* and will also be tested during QA audit A116, titled *Steam Generator Replacement* scheduled for execution in May 2020.
- The Nuclear Fuel Department has been excluded from this audit.

### 1.4 Overview

RD-0034 Rev 0, *Quality and Safety Management Requirements for Nuclear Installations*, requires the implementation of Safety Culture (SC) principles within the framework of an Integrated Management System (IMS). The *Nuclear Safety Management Programme* as documented in 238-28 Rev 3 provides the minimum requirements and required framework to enable the NOU to comply with these and other regulatory requirements.

A total of five good practices, nineteen observations and fifteen nonconformities have been raised during this audit.

#### 1.4.1 Nuclear Project Management SCEP

Although areas for improvement have been observed in this area, overall the NPM SCEP has been well maintained, which is evident in the number areas of good practice noted. These areas of good practice witnessed within NPM, can be attributed to sufficient time and resources being assigned to the management of the safety culture programme as well as staff involvement at all levels within the NPM organisation.

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The nonconformity raised in this area is related to noncompliance to record management requirements which are necessary to ensure the preservation and safeguarding of process records related to the SCEP. The observations noted in this area are deemed to be enhancements to an already mature NPM SCEP.

#### 1.4.2 Koeberg Nuclear Power Station SCEP

In order to optimise business efficiency, an attempt to merge oversight committees within KNPS, have been made. These committees, which included the Safety Culture Steering Committee (SCSC) and the Nuclear Safety Enhancement Committee (also known as HPOC), have related but distinct mandates. Based on the collective audit findings observed in this area, it is however evident that merging these committees has potentially reduced the effectiveness of the HPOC and negatively impacted the SCSC fulfilling its stated mandate of overseeing the effective implementation of the KNPS NSC Plan.

Coupled with the reduced efficiency of HPOC, is the limited line-group trending analysis linked to job observations, and as a result the trending capability afforded by Devonway, in order to pre-empt human performance adverse trends has not been fully utilised.

The processes which enable the implementation, maintenance and enhancement of the Safety Culture programme, have a large number of procedures which were not controlled and certain assigned leadership roles were not implemented. Furthermore the use of uncontrolled forms, which have been developed to enable line groups to collect and analyse Devonway observation trend data effectively, has been noted.

#### 1.4.3 Nuclear Commercial SCEP

Although there is evidence of a Nuclear Commercial Safety Culture procedure and plan having been established, anomalies were noted regarding the maintenance of the SCEP procedure and related management of records. Furthermore, instances were noted where certain assigned roles (Senior Manager and the Safety Culture & Human Performance co-ordinator) have not been implemented which has impacted compliance in various areas including the function of the NSC and HP oversight committee.

#### 1.4.4 Nuclear Engineering SCEP

Evidence of a Nuclear Engineering Safety Culture & Human Performance plan as well as an Oversight Committee terms of reference were noted. However, anomalies regarding the identification and the related management of records as well as the management of meeting outputs, which would support Nuclear Engineering in demonstrating compliance in this area, have been observed.

### 1.5 Conclusion

Although nuclear safety culture committees have been established in each functional area assessed, across the Nuclear Operating Unit (NOU), shortcomings in the overall management of these committees and related roles have been noted, with the exception of the Nuclear Project Management Safety Culture Committee.

By not maintaining the basic functioning of these committees and ensuring the fulfilment of established and aligned mandates, the required control and oversight needed to ensure that planned SCEP initiatives meet their intended outcome, as it relates to nuclear safety culture enhancement, may not be achieved.

The three-yearly culture survey and the KOU annual self-assessments which are being implemented, enables Eskom to comply with specific regulatory requirements. It is therefore crucial that any gaps associated with these monitoring activities or resultant actions be attended to timeously in order to ensure regulatory compliance is maintained.

Furthermore these three-yearly culture surveys and the KOU annual self-assessments, support the Chief Nuclear Officer (CNO) in meeting his assigned role of keeping apprised of the nuclear safety culture health within the organisation on an annual basis. However in order to enable continuous monitoring of the health of nuclear safety culture, requires input from the various functional areas. As part of achieving continuous monitoring of nuclear safety culture, NEXCO has endorsed key performance indicators in June 2019. It is therefore recommended that implementation across the wider organisation be rolled-out, as undue delays may challenge the continuous monitoring of Nuclear Safety Culture, an established nuclear objective.

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Audit findings have also highlighted that not all functional areas have maintained the required process documentation or managed records appropriately in order to ensure that compliance can be demonstrated in the future. The extent of record management anomalies, particularly related to acceptable record storage and archiving practices have been observed in all of the functional areas assessed. Although these practices may not be deemed regulatory noncompliances, it is important to note that being able to demonstrate compliance to established SCEP processes is embedded in the regulatory requirements, documented in RD-0034 Rev 0 paragraph (22).

Regulatory prescription requires that the organisation ensure the implementation and maintenance of a nuclear safety culture programme to encourage a questioning and learning attitude to radiation protection and nuclear safety and to discourage complacency. Based on the anomalies identified across the various business areas, it can be concluded that the organisation has established a safety culture programme but has not consistently maintained and improved these established safety culture programmes.

Based on the findings collectively identified across the audit scope, the audit has been rated as Not Met.

*Note 1: Appendix 4.5.1 describes the activity rating descriptor applied in this report*

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## 2. Audit Summary

### 2.1 Audit Methodology

The audit was executed using the following activities to test process compliance:

- 2.1.1 Documentation reviews of all applicable standards, procedures, guides and authorised Quality Records Lists (QRLs)/ Record Retention Matrices (RRMs).
- 2.1.2 Relevant safety culture plans and records generated as part of the identified processes were reviewed.
- 2.1.3 Verification of Devonway actions stemming from various reports and/or regulatory correspondence was performed.
- 2.1.4 Verification interviews were performed with the various role players.
- 2.1.5 The following committee meetings which support NSC implementation were attended:
  - The Nuclear Project Management Safety Culture Committee (NPMSCC) meeting held on 2020-02-28.
  - The Nuclear Executive Committee (NEXCO) meeting held on 2020-03-05.

### 2.2 Audit Sampling

Samples of the following items were assessed to determine the level of compliance to various processes outputs as they relate to NSC:

- 2.2.1 Minutes of Functional Area Management Committee meetings for the period 2017 to 2020;
- 2.2.2 NSC Annual Review reports for the period 2017 to 2019;
- 2.2.3 Functional Area Self-assessment reports for the period 2017 to 2019;
- 2.2.4 Functional Area Safety Culture Enhancement Plans and resolution of related actions for the period 2017 to 2020;
- 2.2.5 Regulatory actions noted in official correspondence (via letters / presentations / meeting minutes), including Devonway actions stemming from various reports and/or regulatory correspondence for the period 2017 to 2019.
- 2.2.6 Human Performance Observation and Coaching data obtained from the Devonway ObservationWay database and related reports.

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## 2.3 Audit Criteria

The audit has verified that high level requirements, such as statutory, regulatory and corporate requirements, have been cascaded into implementing processes listed below. In addition the Management Manuals of the applicable business areas were also reviewed. The following specific procedures were reviewed and evaluated:

|         | Doc           | Rev    | Title  |
|---------|---------------|--------|--|
| 2.3.1.  | NIL-01        | Var 19 | Nuclear Installation Licence for Koeberg (Licence condition 21.3)  |
| 2.3.2.  | RD-0034       | 0      | Quality and Safety Management Requirements for Nuclear Installations<br>Section 6.1: Structure of an Integrated Management System<br>Section 6.2: Safety Management System and Safety Culture Implementation<br>Section 7.2: General Requirements (14, 15)<br>Section 8.1.2: Management Commitment (33)<br>Section 8.2.2: Management Priorities, Policy and System Planning (36)<br>Section 11.1.2: Monitoring and Measurement (122) |
| 2.3.3.  | RG-0007       | 0      | Regulatory Guide on Management of Safety (section 6.3)   |
| 2.3.4.  | LD 1023       | 4      | Quality Management requirements for Koeberg Nuclear Power Station  |
| 2.3.5.  | 36-197        | 2      | Koeberg Licensing Basis Manual<br>Annexure A: General Requirements; paragraph 3.1.6  |
| 2.3.6.  | 32-83         | 4      | Eskom's Nuclear Policy   |
| 2.3.7.  | 240-108035478 | 2      | The Eskom Nuclear Objectives Section 2.3.3 – Organisational Effectiveness  |
| 2.3.8.  | 238-8         | 4      | Nuclear Safety and Quality Manual (paragraph 7.1)  |
| 2.3.9.  | 238-6         | 4      | Nuclear document and Records Management Requirement  |
| 2.3.10. | 238-128       | 3      | Management Review Standard (Appendix A, Typical Management Review Meeting Inputs)  |
| 2.3.11. | 238-28        | 3      | Nuclear Safety Management Programme  |
| 2.3.12. | KAA-850       | 0      | Koeberg Nuclear Power Station Safety Culture Enhancement Programme   |
| 2.3.13. | KGA-078       | 3      | Coaching and Job Observation at Koeberg Nuclear Power Station  |
| 2.3.14. | KGA-097       | 5      | Station Event-Free Clock Program   |
| 2.3.15. | 331-243       | 2      | Nuclear Engineering Management Review (paragraph 7.3.1)  |
| 2.3.16. | 331-499       | 1      | Nuclear Engineering Safety Culture and Human Performance Committee Meeting ToR   |
| 2.3.17. | 238-166       | 2      | Nuclear Commercial Management Review Committee Terms of Reference (paragraph 9)  |
| 2.3.18. | 238-165       | 1      | Nuclear Commercial Safety Culture and Human Performance Procedure  |
| 2.3.19. | 240-119091328 | 5      | Safety Culture Enhancement Programme   |
| 2.3.20. | 240-119091288 | 4      | Responsibilities of NPM Department and Key Function (paragraph 2.5.10)   |
| 2.3.21. | 240-119091486 | 4      | Management Review (paragraph 8)  |

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## 2.4 Areas of Good Practice

The following areas of good practice or control were observed during the audit:

|                        |   |
|------------------------|---|
| AU<br>39424-<br>020 QA | <p><b><i>The Senior Manager: Nuclear Projects Management's commitment to establishing, executing and improving the NPM Safety Culture Enhancement Programme is commendable for the following reasons:</i></b></p> <ul style="list-style-type: none"> <li>• The incumbent has encouraged active participation from staff at all levels of the organisation as part of the SCEP</li> <li>• There is evidence that all human resources and management systems, procedures and processes necessary to implement and maintain a sustainable strong nuclear safety culture programme has been made available.</li> <li>• There is evidence of establishing an open reporting culture, where events are treated as an opportunity to improve individual and organisational performance.</li> <li>• Appointment letters for various role players participating in the NPMSCC has been noted which ensures that assignments and related roles are understood and accepted.</li> </ul>  |
| AU<br>39424-<br>021 QA | <p><b><i>An area of good control has been observed in the management of the Nuclear Project Management Safety Culture Plan.</i></b></p> <ul style="list-style-type: none"> <li>• The NPM Safety Culture plans are managed using MS Project which allows for revision details to be captured using multiple fields. The details include the period for which the plan has been developed e.g. FY2020. The specific plan revision is also captured e.g. 3T. Finally the specific review meeting where the changes were made or from which the changes stemmed from e.g. FY2020_10.</li> <li>• There are therefore multiple areas where revision control is noted. The benefit of the system adopted by NPM to manage the updates to their plan has many benefits which include: access to previous revisions; improved traceability of plan updates/changes as well as the ability to periodically evaluate the effectiveness of the NPM SC plan.</li> <li>• Access to the current NPM SC plan via Sharepoint. These plans are retained in PDF format thereby protecting the plans from unintended changes. The sample of plans reviewed was signed by the NPM SCEP co-ordinator and the initial plans for each financial year, has been signed by the Senior Manager, Nuclear Projects.</li> </ul> |
| AU<br>39424-<br>022 QA | <p><b><i>An area of good control has been observed in the management of the Nuclear Project Management Safety Culture Committee Meetings and overall staff involvement</i></b></p> <ul style="list-style-type: none"> <li>• The Senior Manager, Nuclear Projects, has nominated all his direct reports to chair the NPMSCC.</li> <li>• A roster has been included in the SCP for this quarterly chairperson assignment. By rotating the Chairperson role, has enabled the Senior Manager, Nuclear Projects to assign specific nuclear safety culture responsibilities to senior NPM staff.</li> <li>• The frequency of the NPMSCC meetings exceed that of any Safety Culture meeting held in the various business areas reviewed during this audit across the NOU.</li> <li>• The quality of meeting minutes and action lists generated provide sufficient objective evidence that the committee is active and attempts to involve staff at all levels.</li> </ul>  |
| AU<br>39424-<br>023 QA | <p><b><i>There is no ambiguity related to roles and responsibilities assigned to personnel who are involved in implementing the NPM SCEP.</i></b></p> <ul style="list-style-type: none"> <li>• The Senior Manager, Nuclear Projects, formally appoints various role players to manage different functions as it relates to the NPM BA SCEP process.</li> <li>• The responsibilities of the SCEP coordinator as well as all roles of various members have been listed and are well defined in 240-119091288 Rev 4, Responsibilities and Authorities of Key Personnel Procedure.</li> </ul>   |
| AU<br>39424-<br>024 QA | <p><b><i>The overall oversight exhibited in managing SCEP action lists which are tracked at the monthly NPM SCC meetings was observed at the NPMSCC meeting held on 2020-02-28.</i></b></p> <p>In reviewing a sample of action lists for the 2019 period, provided evidence that all identified actions are tracked and monitored regularly by the chairperson of the NPMSCC.</p>   |

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## 2.5 Observations

The following observations were recorded during the audit:

| Number             | Description  | Responsible Group               |
|--------------------|--|---------------------------------|
| AU 39424-001<br>QA | The establishment and integration of a security culture programme, as part of the overall nuclear safety programme, is not evident in the NOU IMS and has therefore not been cascaded into the safety programmes established by various business areas.  | NOU                             |
| AU 39424-002<br>QA | In order to effectively implement the NEXCO endorsed nuclear safety culture health indicators which is needed to measure the status of the established Eskom Nuclear Objective, may require further consolidation and review in order to ensure that business area KPIs are aligned and are able to support this overall NOU health measurement. | NOU-                            |
| AU 39424-003<br>QA | The NOU Nuclear Safety Management Programme, 238-28 Rev 3, has not documented in sufficient detail, the requirements assigned at the level of functional area to ensure consistent implementation and compliance to Safety Culture Enhancement Programme (SCEP) requirements, when compared to revision 2 and revision 1 of the same document.   | NOU                             |
| AU 39424-004<br>QA | The NOU Safety Culture forum does not retain meeting minutes or action lists thereby impacting the ability to demonstrate that various SC & HP practitioners have participated in a single NOU forum which may be key in promoting alignment as it relates to SCEP initiatives across the NOU.   | NOU                             |
| AU 39424-005<br>QA | Specific leading and lagging indicators to be used when performing a safety culture self-assessment, have not been defined in the Nuclear Safety Management Programme, 238-8 Rev 3 and has therefore has not been cascaded consistently into the Safety programmes established by various business areas.  | NOU                             |
| AU 39424-006<br>QA | The current methodology applied during the compilation of the 2017 and 2018 Nuclear Safety Culture Self-assessment, has not incorporated or considered the IAEA industry guidance/best practice as it relates to the execution and follow-up of nuclear safety culture self-assessments.   | NOU                             |
| AU 39424-007<br>QA | All the actions and recommendations identified during the 2016 Nuclear Safety Culture survey as well as the 2018 Nuclear Safety Culture self-assessment, have not been captured on Devonway as related items or additional actions.  | NOU                             |
| AU 39424-008<br>QA | Resolution of certain actions and recommendations identified during the 2017 NSC self-assessment and reported in 2018 (SE 37932) have not been timeously completed, based on Devonway data reviewed.   | NOU                             |
| AU 39424-009<br>QA | 238-128 Rev 3, Management Review Standard has not documented sufficient detail regarding the record retention requirements to demonstrate compliance to ISO 9001:2015 and RD-0034 requirements.  | Nuclear Strategy and Regulation |

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| Number             | Description  | Responsible Group          |
|--------------------|--|----------------------------|
| AU 39424-010<br>QA | Clarity regarding the various types of safety culture plans adopted within KNPS and NOU is required to ensure that configuration is maintained and the current safety culture plan is always updated and accessible.   | KNPS                       |
| AU 39424-011<br>QA | Based the 2019 HPOC Departmental Feedback forms reviewed, it is evident that emerging human performance issues are not identified using the trending mechanisms available through Devonway and guidance provided in KGA-078, <i>Coaching and Job Observation at Koeberg Nuclear Power Station</i> , in order to ensure that human performance strategies for improvement are determined. | KNPS                       |
| AU 39424-012<br>QA | Certain actions and recommendations identified during the common cause assessment (SE 38585) titled, Self-Assessment of Recent Plant Events Related to Human Performance, have not been loaded on Devonway, based on the Devonway data reviewed  | KNPS                       |
| AU 39424-013<br>QA | Reference to a KNPS document, KGA-093, which has been withdrawn since 2013-02-19, has been noted in 240-119091328 Rev 5, Safety Culture Enhancement Programme (for NPM) which was authorised in September 2019.  | Nuclear Project Management |
| AU 39424-014<br>QA | Insufficient detail regarding the SC Health assessments planned and executed were included in the FY2019 and FY2020 NPM SC plans.  | Nuclear Project Management |
| AU 39424-015<br>QA | The frequency of the NPM Safety Culture Committee meetings have not been defined in 240-119091328 rev 5, Safety Culture Enhancement Programme (for NPM)  | Nuclear Project Management |
| AU 39424-016<br>QA | Resolution of Nuclear Commercial Safety Culture and Human Performance Plan actions, have not been timeously completed.   | Nuclear Commercial         |
| AU 39424-017<br>QA | The impact of withdrawing the Nuclear Engineering Safety Culture Enhancement procedure 331-8 Rev 0, while ensuring compliance to SCEP requirements, may not have been holistically assessed.   | Nuclear Engineering        |
| AU 39424-018<br>QA | It is uncertain how often the NE Safety culture plans for the period 2017 to 2019 have been updated since no revision/version control has been applied for NE SC and HP plan   | Nuclear Engineering        |
| AU 39424-019<br>QA | There is potential risk that the Nuclear Engineering Safety Culture and Human Performance Committee may not meet the due date of end of March for completing the self-evaluation, whereby its performance and effectiveness for the period April 2019 to March 2020 will be assessed.  | Nuclear Engineering        |

Note: The detailed observations are captured in an appendix 4.5.17.

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## 2.6 Nonconformities

The following nonconformities were raised:

| Number    | Description   | Criteria                            | Responsible Group | Rating |
|-----------|---|-------------------------------------|-------------------|--------|
| CR113998  | Certain Koeberg Nuclear Power Station Procedures, required for implementing the Nuclear Safety Culture Enhancement and Human Performance Programmes, have passed their next review dates  | 238-6<br>Rev 4                      | ISED              | 2      |
| CR113999  | Records related to the Koeberg Nuclear Power Station Safety Culture Enhancement Programme and the Management Review process for Koeberg Nuclear Power Station, have not been indexed on an authorised Quality Record list (QRL) or a Record Retention matrix and subsequently have not been archived. | 238-6<br>Rev 4                      | ISED              | 3      |
| CR114001  | There is no evidence that the Safety Culture Steering Committee (SCSC) meetings have been held as required.   | KAA-850<br>Rev 0                    | ISED              | 3      |
| CR114002  | The minimum number of Nuclear Safety Enhancement Committee (NSEC) meetings (also known as HPOC) was not held during the period 2017 to 2019.  | KGA-097<br>Rev 5                    | ISED              | 1      |
| CR114003  | The Koeberg Safety Culture Plan for 2019-2020 is not accessible from the specified location on the G:drive as required by KAA-850 Rev 0, Koeberg Nuclear Power Station Safety Culture Enhancement Programme.  | KAA-850<br>Rev 0                    | ISED              | 1      |
| CR114004  | The Nuclear Safety Enhancement Committee (NSEC) Terms of Reference and the HPOC Departmental Feedback form have not been managed as controlled documents.   | 238-6<br>Rev 4<br>KSA-011<br>Rev 14 | ISED              | 2      |
| CR114005: | The Power Station Manager has not led the Safety Culture Forum, which consists of his direct reports, in order to assess the health of safety culture.  | KAA-850<br>Rev 0                    | ISED              | 2      |

### NC rating legend

|   |  |   |   |   |   |   |   |
|---|--|---|---|---|---|---|---|
| 4 | Nonconformity has a significant impact on process objectives | 3 | Nonconformity has a material impact on process objectives | 2 | Nonconformity has a immaterial impact on process objectives | 1 | Nonconformity has a negligible impact on process objectives |
|---|--|---|---|---|---|---|---|

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| Number   | Description  | Criteria                           | Responsible Group          | Rating |
|----------|--|------------------------------------|----------------------------|--------|
| CR114006 | Certain Nuclear Commercial Procedures, required for implementing Nuclear Safety Culture, has passed their next review dates.   | 238-6<br>Rev 4                     | Nuclear Commercial         | 2      |
| CR114007 | The quarterly Nuclear Commercial Safety Culture and Human Performance Oversight Committee meetings have not been held since 2015.  | 238-165<br>Rev 1                   | Nuclear Commercial         | 3      |
| CR114008 | Certain roles and responsibilities assigned to the Nuclear Commercial Senior Manager, related to the implementation and oversight of the Nuclear Safety Culture Programme, have not been implemented as required.                            | 238-165<br>Rev 1                   | Nuclear Commercial         | 3      |
| CR114009 | Records related to the Nuclear Commercial Safety Culture Enhancement Programme (SCEP) and the Management Review process for Nuclear Commercial, have either not been identified or appropriately indexed, as required.                       | 238-8<br>Rev 4<br>KSA-038<br>Rev 5 | Nuclear Commercial         | 1      |
| CR114010 | Records for Nuclear Project Management (NPM), related to the Safety Culture Enhancement Programme and the Management Review Committee (MRM), have not been indexed on the authorised Quality Record list (QRL) or a Record Retention matrix. | 238-6<br>Rev 4                     | Nuclear Project Management | 2      |
| CR114011 | Records required to demonstrate that the Nuclear Engineering Safety Culture Enhancement Programme (SCEP) has been implemented or reviewed, has either not been identified, appropriately indexed or archived as required.                    | 238-8<br>Rev 4                     | Nuclear Engineering        | 2      |
| CR114012 | Not all the Nuclear Engineering Safety Culture and Human Performance Committee quarterly meetings have been held for the period, April 2019 to March 2020, as required.  | 331-499<br>Rev1                    | Nuclear Engineering        | 1      |
| CR114013 | There is no evidence that the NE Safety culture and HP Chairperson has endorsed the action lists stemming from the Safety Culture and Human Performance Committee meetings for the period April 2019 to March 2020.                          | 331-499<br>Rev1                    | Nuclear Engineering        | 2      |

NC rating legend

|   |  |   |   |   |   |   |   |
|---|--|---|---|---|---|---|---|
| 4 | Nonconformity has a significant impact on process objectives | 3 | Nonconformity has a material impact on process objectives | 2 | Nonconformity has a immaterial impact on process objectives | 1 | Nonconformity has a negligible impact on process objectives |
|---|--|---|---|---|---|---|---|

Note: The detailed nonconformities are captured in appendices 4.5.2 to 4.5.16.

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### 3. Detailed Report

RD-0034 Rev 0, *Quality and Safety Management Requirements for Nuclear Installations*, requires the implementation of Safety Culture (SC) principles within the framework of an Integrated Management System (IMS). To achieve this requirement, the Regulator requires that the licensee develop and implement a Safety Culture Enhancement Programme (SCEP), which must provide the framework for implementing the aspects of SC within the licensee organisation. Within the Nuclear Operating Unit (NOU), *The Nuclear Safety Management Programme* as documented in 238-28 Rev 3 provides the minimum requirements and required framework to enable the NOU to comply with these and other regulatory requirements.

#### 3.1 The Nuclear Operating Unit (NOU) Safety Management Programme

3.1.1. During the preparation phase of this audit, a document review was performed to determine whether a sample of applicable regulatory and business requirements have been integrated into 238-28 Rev 3, *The Nuclear Safety Management Programme*. In addition, 238-28 was also assessed in order to determine whether sufficient prescription has been provided to ensure that all BAs are able to appropriately implement a BA Safety Culture Enhancement Programme that would meet a sample of selected regulatory requirements. The following criteria selected was applied during the documentation review of this audit:

3.1.1.1 RD-0034 Rev 0, *Quality and Safety Management Requirements for Nuclear Installations*:

- Paragraph (122) requires that a systematic process for monitoring safety culture within level 1 organisation's must be established, using suitable leading and lagging indicators, and qualitative information (for example findings from self-assessments, NNR and independent reviews).
- Paragraph (22) requires that the organisation must ensure that records are retained to furnish evidence of activities affecting quality and safety. These records must be readable, complete, identifiable, classified, stored and easily retrievable. Retention times of records must be defined.

3.1.1.2 RG-0007 Rev 0, *Regulatory Guide on Management of Safety* (section 6.3 Safety culture)

Paragraph 6.3.4 requires that all organisations involved in implementing nuclear security measures should give due consideration in accordance with NNR requirements and guidance [8] to the development and maintenance nuclear security culture recognizing the synergies between nuclear safety and nuclear security.

3.1.1.3 IAEA General Safety Requirements (GSR) Part 2, *Leadership and Management for Safety* (section 5 Culture for Safety) requires the following:

- Paragraph (f) notes the means by which the organisation seeks to enhance safety and to foster and sustain a strong safety culture, and using a systemic approach (i.e. an approach relating to the system as a whole in which the interactions between technical, human and organisational factors are duly considered);
- Paragraph (h) requires the exchange of ideas between, and the combination of, safety culture and security culture.

3.1.1.4 IAEA Safety Guide GS-G-3.5, *The Management System for Nuclear Installations* (Self-assessment of safety culture paragraph 6.35 to 6.37) prescribes the following:

- The self-assessment of safety culture should include the entire organisation.
- A designated team representing all organisational levels and functions at the installation should carry out the self-assessment.
- A specialist in safety culture should be included in the team for ensuring that appropriate assessment tools are developed and applied, as well as for carrying out an analysis of the results (including a statistical analysis of the results of questionnaires) and their interpretation.
- The self-assessment team should receive training in how to develop the assessment tools and in the steps to be considered in the assessment process.
- The focus groups should include cross-functional representatives and/or representatives from an organisational unit. There should be enough focus groups to obtain a realistic assessment of the entire organisation.

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- A follow-up assessment should be performed, account being taken of the time needed for improvement actions to have their full effect on the safety culture.

Likewise, a sample of business requirements, impacting the NOU SCEP was also selected, and the integration of these requirements into the NOU SCEP, was also tested. The criteria applied during this part of the documentation review were as follows:

3.1.1.5 32-83 Rev 4, *Eskom's Nuclear Policy* notes the following:

- Paragraph 2.1 Policy Statement - Promote a strong nuclear safety and security culture through the development and reinforcement of good safety attitudes and behaviour in individuals, leaders and teams, emphasising nuclear safety over competing goals to ensure protection of people and the environment.
- Paragraph 2.2. Policy Principles - Demonstrate leadership in safety matters at the highest organisational level by implementing and continually improving an integrated management system that combines all the elements of safety, quality, health, the environment, security, and safety culture in a manner that safety is not compromised by other requirements, that are applicable to all nuclear activities;

3.1.1.6 240-108035478 Rev 2, *The Eskom Nuclear Objectives* (Organisational Effectiveness Leadership and management)

- Paragraph 2.3.3 requires management to ensure the availability of adequate resources, foster an open trusting environment that promotes a healthy Nuclear Culture (Safety and Security).
- Paragraph 2.3.3 states that Insights gained from the annual Nuclear Culture assessment which provides an indication of the prevailing organisational culture, and the resultant enhancement plan.

3.1.1.7 238-14 Rev 2, *Security Measures for Nuclear Power Stations and Facilities*

- Paragraph 11 notes that a programme shall be implemented to establish and enhance a nuclear security culture as part of the overall nuclear safety programme.

Based on the documentation review, these specific requirements were tested during the execution phase of the audit by assessing the areas listed in table 1, with reference to the Nuclear Safety Management Programme and the specific business area SCEPs. The above requirements noted in section 3.1.1 of this report are cross referenced in the table 1 below.

**Table 1:**

|    | Requirement   | NOU  | KNPS                        | NPM                                   | NC                | NE                |
|----|---|--|-----------------------------|---------------------------------------|-------------------|-------------------|
| 1. | Is there evidence that security culture has been integrated into the Nuclear Safety Management Programme? Refer to 3.1.1.2, 3.1.1.3 & 3.1.1.7.  | Not evident  | Not evident                 | Not evident                           | Not evident       | Not evident       |
| 2. | Has sufficient detail been incorporated into 238-28 Rev 3, <i>The Nuclear Safety Management Programme</i> to ensure the integration of security culture into the individual BA SCEPs? Refer to 3.1.1.2, 3.1.1.3 & 3.1.1.7.  | Although 238-28 Rev 3 references RG-0007 as an informative reference, there is no mention of security culture in the document. Therefore integration into individual BA SCEP is not ensured. |                             |                                       |                   |                   |
| 3. | Besides the insights gained from the annual Nuclear Culture assessment which provides an indication of the prevailing organisational culture, and the resultant enhancement plan, is there evidence that specific key performance indicators (KPIs) have been established and implemented to measure the prevailing organisational culture? Refer to 3.1.1.1. | NEXCO endorse d KPIs 2019  | Items noted as part of HPOC | 12/11 KPIs specific to NPM is evident | CAP related items | CAP related items |
| 4. | Has sufficient detail been incorporated into 238-28 Rev 3, <i>The Nuclear Safety Management Programme</i> to ensure the integration of these key performance indicators (KPIs) into the individual BA SCEPs? Refer to 3.1.1.1.  | KPIs have not been documented in 238-28 Rev 3, <i>The Nuclear Safety Management Programme</i>  |                             |                                       |                   |                   |

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|      | Requirement   | NOU   | KNPS        | NPM                   | NC          | NE          |
|------|---|---|-------------|-----------------------|-------------|-------------|
| 5.   | Have the annual Nuclear Safety Culture (NSC) self-assessments used to assess the prevailing organisational culture, been implemented according to regulatory guidance or prescription as listed below:  | Not evident   | Not evident | Not evident           | Not evident | Not evident |
| 5.1. | The self-assessment of safety culture should include the use of leading and lagging indicators. Refer to 3.1.1.1.   | Not evident   | Not evident | Not evident           | Not evident | Not evident |
| 5.2. | The self-assessment of safety culture should include the entire organisation. Refer to 3.1.1.4.   | Not evident   | Not evident | Not evident           | Not evident | Not evident |
| 5.3. | A designated team representing all organisational levels and functions at the installation should carry out the self-assessment. Refer to 3.1.1.4.  | Not evident   | Not evident | Not evident           | Not evident | Not evident |
| 5.4. | A specialist in safety culture should be included in the team for ensuring that appropriate assessment tools are developed and applied, as well as for carrying out an analysis of the results (including a statistical analysis of the results of questionnaires) and their interpretation. Refer to 3.1.1.4.        | Not evident   | Not evident | Not evident           | Not evident | Not evident |
| 5.5. | The self-assessment team should receive training in how to develop the assessment tools and in the steps to be considered in the assessment process. Refer to 3.1.1.4.  | Not Tested  | Not Tested  | Not Tested            | Not Tested  | Not Tested  |
| 5.6. | The focus groups should include cross-functional representatives and/or representatives from an organisational unit. There should be enough focus groups to obtain a realistic assessment of the entire organisation. Refer to 3.1.1.4.   | Not evident   | Not evident | Not evident           | Not evident | Not evident |
| 5.7. | A follow-up assessment should be performed, account being taken of the time needed for improvement actions to have their full effect on the safety culture Refer to 3.1.1.4.  | Not evident   | Not evident | Not evident           | Not evident | Not evident |
| 5.8. | Has sufficient detail been incorporated into 238-28 Rev 3, <i>The Nuclear Safety Management Programme</i> to ensure that the regulatory guidance or prescription, including the use of leading and lagging indicators are implemented during the NSC self-assessments performed within various BAs? Refer to 3.1.1.1. | KAA-850 Rev 0 is the only SCEP document which defines the type of leading and lagging indicators to be applied during the annual NSC self-assessments.<br><br>238-28 Rev 3 does not define the type of leading and lagging indicators to be applied during the annual NSC self-assessments. |             |                       |             |             |
| 5.9. | Have specific records been identified and related retention periods, whether permanent (P) or non-permanent (NP) been specified to ensure compliance can be demonstrated to established SCEP processes as required by RD-0034 Rev 0 paragraph (22). Refer to 3.1.1.1.   | Only Safety Culture Plan noted  | Record (P)  | Record (NP) two years | No record   | No record   |
| 6.   | Has sufficient detail been incorporated into 238-28 Rev 3, <i>The Nuclear Safety Management Programme</i> to ensure that records required for demonstrating compliance to established SCEP processes are retained across BAs? Refer to 3.1.1.1.   | 238-28 Rev 3 only notes the NOU Nuclear Safety Culture Plan in section 2.7, Related/Supporting Documents. No minimum retention period has been documented.  |             |                       |             |             |

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Based on the number of anomalies noted in table 1, which could impact continued regulatory compliance, the following observations have been raised:

**AU 39424-001 QA:** *The establishment and integration of a security culture programme, as part of the overall nuclear safety programme, is not evident in the NOU IMS and has therefore not been cascaded into the safety programmes established by various business areas.*

**AU 39424-002 QA:** *In order to effectively implement the NEXCO endorsed nuclear safety culture health indicators which is needed to measure the status of the established Eskom Nuclear Objective, may require further consolidation and review in order to ensure that business area KPIs are aligned and are able to support this overall NOU health measurement.*

**AU 39424-005 QA:** *Specific leading and lagging indicators to be used when performing a safety culture self-assessment, have not been defined in the Nuclear Safety Management Programme, 238-8 Rev 3 and has therefore has not been cascaded consistently into the Safety programmes established by various business areas.*

**AU 39424-006 QA:** *The current methodology applied during the compilation of the 2017 and 2018 Nuclear Safety Culture Self-assessment, has not incorporated or considered the IAEA industry guidance/best practice as it relates to the execution and follow-up of nuclear safety culture self-assessments.*

**AU 39424-007 QA:** *All the actions and recommendations identified during the 2016 Nuclear Safety Culture survey as well as the 2018 Nuclear Safety Culture self-assessment, have not been captured on Devonway as related items or additional actions.*

**AU 39424-008 QA:** *Resolution of certain actions and recommendations identified during the 2017 NSC self-assessment and reported in 2018 (SE 37932) have not been timeously completed, based on Devonway data reviewed.*

3.1.2. During the audit, NSC programme outputs generated, for the period 2017 to 2019 were tested for compliance to the NOU SCEP requirements. The outputs tested included the NSC plans, NSC self-assessments and relevant meeting minutes and action lists. Refer to section 2.2 of this report for a detailed list of outputs tested.

During this period multiple revisions of 238-28 were authorised. Even though compliance was assessed using the latest authorised revision, a comparison between revisions 1, 2 and 3 of 238-28 was completed to determine if compliance has been impacted by the differences in detail noted in these applicable revisions of 238-28 during the 2017 to 2019 period when the applicable revisions were enforced. The following inconsistencies were noted in the various functional areas:

- The management of SCEP records across the functional areas differed between functional areas. Examples have been noted where no records are being identified and maintained to instances where various records are being classified as either permanent or non-permanent.
- The understanding and resultant implementation of the annual Safety Culture self-assessment by individual functional areas were inconsistent. Certain groups rely on the KOU self-assessment and seldom identify applicable actions stemming from these self-assessments, while other functional areas perform focused Safety culture assessments and identify appropriate actions for the specific functional area, thereby enhancing the safety culture plan and SCEP of the functional area.
- The application of key performance indicators across the functional areas were also noted as inconsistent or not aligned in order to support a wider NOU NSC health measurement.
- Gaps have been noted that apply to the establishment and implementation of the Safety Culture Forum at the NOU level, which may assist in ensuring alignment to SCEP requirements across the NOU.
- Furthermore it was noted that all previous prescriptions regarding Level 1 suppliers and their sub-suppliers, documented in the previous revisions of 238-28, have now been omitted from the current revision.

To highlight the above-mentioned anomalies, the following observation has been raised:

**AU 39424-002 QA:** *The NOU Nuclear Safety Management Programme, 238-28 Rev 3, has not documented in sufficient detail, the requirements assigned at the level of functional area to ensure*

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*consistent implementation and compliance to Safety Culture Enhancement Programme (SCEP) requirements, when compared to revision 2 and revision 1 of the same document.*

During the audit it was also observed that evidence to demonstrate that the NOU Safety Culture forum had convened, could not be provided. As a result the functioning and mandate of the NOU Safety Culture forum, which had been documented in 238-28 Rev 2, could not be tested. Based on the inconsistencies observed across the functional areas, as part of implementing the BA SCEPs, it was noted that convening this forum regularly may improve alignment of the safety culture initiatives across the NOU. To highlight this anomaly and potential benefit, the following observation has been highlighted:

**AU 39424-004 QA:** *The NOU Safety Culture forum does not retain meeting minutes or action lists thereby impacting the ability to demonstrate that various SC & HP practitioners have participated in a single NOU forum which may be key in promoting alignment as it relates to SCEP initiatives across the NOU.*

3.1.3. Finally as part of the holistic review of committees assessing NSC, the various Management Review meetings convened across the NOU were also assessed to determine whether NSC forms part of a typical management review meeting agenda. Individual anomalies identified have been recorded in the relevant BA sections of this report.

In general however it was observed that the retention periods for management review meeting records are inconsistent across BAs, which has resulted in inconsistent record storage practices across the NOU and potentially impacts compliance with ISO 9001:2015 (section 9.3.3) and RD-0034 Rev 0 (paragraphs 45 and 22). It was also noted that the *Management Review Standard*, documented in 238-128 Rev 3 does not specify in sufficient detail the record retention requirements to demonstrate compliance to the previously mentioned sections of ISO 9001:2015 and RD-0034 Rev 0. To highlight this anomaly, the following observation has been raised:

**AU 39424-009 QA:** *238-128 Rev 3, Management Review Standard has not documented sufficient detail regarding the record retention requirements to demonstrate compliance to ISO 9001:2015 and RD-0034 requirements.*

3.1.4. During the audit, the following aspects listed below were assessed to determine compliance to specific management system requirements and NOU prescription documented in 238-28 Rev 3 *Nuclear Safety Management Programme*:

- Establishment and Maintenance of the SCEP (including the NSC Plan);
- Control of Safety Culture Enhancement programme (via Committees);
- Roles and Responsibilities related to the control of the Safety Culture Enhancement Programme;
- Monitoring of the NSC Health (SCEP and BA safety culture plan);
- Feedback and Continual Improvement which support enhancement of the SCEP;
- Records Management.

The listed aspects will be discussed for each BA assessed in the sub-sections that follow.

## 3.2 Koeberg Nuclear Power Station (KNPS)

The Safety Culture Enhancement Programme for KNPS is documented in KAA-850 Rev 0, *Koeberg Nuclear Power Station Safety Culture Enhancement Programme*, which was authorised on 2013-12-24. This procedure was noted as the main criteria applied in assessing compliance in this area.

### 3.2.1. Establishment and Maintenance of the KNPS SCEP (including the NSC Plan)

In this area, both the Safety Culture Enhancement procedure and the available NSC plans were assessed to determine if they were valid and up to date. In addition, the configuration of these plans and related actions were also assessed by reviewing identified storage locations and available Devonway data, respectively.

3.2.1.1 Concerning to the Safety Culture procedure, it was noted that KAA-850 Rev 0, *Koeberg Nuclear Power Station Safety Culture Enhancement Programme* had not been reviewed since its initial authorisation in 2013 and has passed its next review date of December 2016.

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It was also noted that a number of additional procedures that enable or support the execution of the SCEP, have passed their next review dates. These procedures are as follows:

- KGA-097 Rev 5, *Station Event-Free Clock Program*, authorised 2013-12-24, has passed its next review date of 2019-06-02. (level 4)
- KGA-053 Rev 4, *Self-Assessment at Koeberg Nuclear Power Station*, authorised 2012-01-26, has passed its next review date of 2018-01-26. (level 4)
- 238-129 Rev 0, *Nuclear Operating Unit Self Assessments*, authorised 2012-03-20, has passed its next review date of 2014-11. 238-129 Rev 0 is noted as a level 2 document.
- It was also noted that KGA-076, Rev 3a, *Performing Trending & Trending Analysis*, authorised 2013-09-18, has passed its next review date of 2016-06-27. (level 4), however a corrective action, has been registered on Devonway (See CR98837-001CA).

When controlled documents are not reviewed timeously, there is a risk of process noncompliance, as practices may have evolved from authorised processes. To highlight these anomalies, the following nonconformity has been raised:

**CR113998:** *Certain Koeberg Nuclear Power Station Procedures, required for implementing the Nuclear Safety Culture Enhancement and Human Performance Programmes, have passed their next review dates*

3.2.1.2 The validity and currency the NSC plans were reviewed according prescription noted in KAA-850 Rev 0. According to paragraph 5.9.1, the SCP is to be kept current and be accessible from the following location: G:\Koeberg\ISED\NSEG\NUCLEAR SAFETY\Nuclear Safety Enhancement Steering Committee.

The following anomalies were observed:

- It was not possible to retrieve the current NSC plan from the specified G:\drive location. It was confirmed that in practice, NSC plans are not saved in the specified G:\drive location and as a result the current NSC plan for 2019-2020, was not retrievable from this location during the preparation phase of the audit.
- It was also noted that when the KNPS safety plans were initially requested, two different Excel spreadsheets were provided to the auditor, depicting KNPS safety culture plans 2018-2019.

The first plan which was titled, *KNPS Nuclear Safety Culture Plan 2018-2019 (Rev 0a)* noted seven elements such as: Safety Culture Awareness and Communication; Individual Awareness/Questioning Attitude; Safety Leadership; Audits and Reviews (Internal and External); Safety Culture Surveys and Monitoring; Continuous Improvement (Learning from Events); Control of Safety Culture Enhancement (Safety Culture Steering Committee).

The second plan which was also titled, *Nuclear Safety Culture Plan- Koeberg Power Station 2018/2019*, contained Nuclear safety culture report actions for the following categories: Organisational, Leadership and Individual categories

- It was also noted that revision/version control has not been consistently captured on a sample of KNPS safety plans provided during the audit. As a result of revision/version control not being applied, it is uncertain whether the 2019-2020 KOU safety culture plan has been kept current and it was difficult to determine when the plan was last updated.

The overall configuration of the plan may be challenged since the latest safety culture plan was not stored in the required location and revision/version control has not been consistently applied. To highlight these anomalies, the following nonconformity and observation have been raised:

**CR114003:** *The Koeberg Safety Culture Plan for 2019-2020 is not accessible from the specified location on the G:\drive as required by KAA-850 Rev 0, Koeberg Nuclear Power Station Safety Culture Enhancement Programme.*

**AU 39424-010 QA:** *Clarity regarding the various types of safety culture plans adopted within KNPS and NOU is required to ensure that configuration is maintained and the current safety culture plan is always updated and accessible.*

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### 3.2.2. Control of the KNPS Safety Culture Enhancement programme (via Committees)

The control of the Koeberg Nuclear Safety Enhancement programme via specific committees as documented in KAA-850 Rev 0, was assessed by evaluating the following two committees and its related functions:

- The Safety Culture Steering Committee (SCSC) shall oversee the execution of the KNPS Safety plan.
- The Safety Culture forum shall lead an annual process of safety culture self-assessment, thereby ensuring a management review is performed to assess the health of safety culture.

As part of this evaluation, the following were assessed:

- Frequency of executed meetings;
- Quorum of the meetings;
- Execution of documented mandates.

#### 3.2.2.1 The execution of the Safety Culture Steering Committee (SCSC) meetings according to KAA-850 Rev 0 paragraph 5.9.1, require the following:

- The Safety Culture Steering Committee shall meet monthly to discuss the status of the SCP activities according to the agreed plan.
- The SCSC meeting shall be chaired by either the Power Station Manager (PSM), the Plant Manager, the ISED Manager or one of the HODs, unless designated otherwise by the PSM. The HODs of all the main line departments are expected to attend the SCSC meeting.

Based on the objective evidence available at the time of the audit, following has been determined:

- The required monthly SCSC meetings have not been held since September 2018.
- There is no evidence that actions noted on NSC plans are monitored by the SCSC.
- Besides the unsigned action list titled, '*Nuclear Safety Culture Plan*' meeting which was convened on 10 September 2018, no additional evidence could be provided of the existence and functioning of the Safety Culture Steering Committee. This functioning includes, the relevant meeting quorum being met and the execution of the documented mandate for the period post September 2018.

When the defined *Safety Culture Steering Committee* meetings are not held, the required monitoring and oversight of safety culture plan actions may not be achieved. To highlight this anomaly, the following nonconformity has been raised:

**CR114001:** *There is no evidence that the Safety Culture Steering Committee (SCSC) meetings have been held as required.*

The details of the Safety Culture Forum (SCF) meeting execution will be discussed in section 3.2.3, which elaborates on the roles and responsibilities associated with the control of Safety Culture Enhancement Programme.

### 3.2.3. Roles and Responsibilities related to the control of the KNPS Safety Culture Enhancement Programme

In assessing compliance in this area, two key functions were consistently tested across each BA evaluated, namely the role of the senior manager and appointed SCEP role players who are key in implementing relevant SCEP initiatives.

According to KAA-850 Rev 0 paragraph 5.1.2, the following are required of the Power Station Manager:

- Establishment and maintenance of a healthy safety culture in the functional area. The responsibilities include developing and implementing plans to achieve this, as well as demonstrating the behaviours necessary to foster a healthy safety culture within the KNPS, including:
- Developing a SCP that will detail specific initiatives aimed at strengthening safety culture in the Functional Area.
- Allocating sufficient organisational resources, such as budget, time and staff, to give effect to the SCP.

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- Establishing a SCSC in the functional area, that is charged with monitoring the effective implementation of the SCP.
- Leading an annual process of safety culture self-assessment by means of the Safety Culture Forum (SCF).
- Assigning a staff member or staff members with adequate seniority and status to the role of Safety Culture Practitioners or Co-ordinators to assist in the development and implementation of the SCP.

Two anomalies linked to the execution of the Power Station Manager roles and responsibilities have been observed as follows:

3.2.3.1. The establishment of the Safety Culture Steering Committee (SCSC) has been noted but the continued execution of this meeting has not been evident. This anomaly was, discussed in the previous section.

3.2.3.2. The execution of the Safety Culture Forum (SCF) meetings, according to KAA-850 Rev 0 paragraph 5.9.2, require the following:

- The Safety Culture Forum shall convene on an annual between September and November, consisting of the PSM, his direct reports and others as relevant.
- The SCF shall reflect on the health of the safety culture by applying prescribed inputs.
- A Safety Culture report shall be produced which will serve as input for the discussion and evaluation of the KNPS SCEP.

In reviewing the annual Safety Culture report produced for the periods 2017 and 2018, it was observed that there was a lack of documented evidence of the Safety Culture Forum convening annually during the periods of September to November. There was no evidence that the Safety Culture Forum (consisting of the PSM and his direct reports) had convened to assess the safety culture health. The specific review results highlighted the following:

- The annual safety culture assessment report, SE 37932 for 2017 reported on in 2018 noted only one team member besides the compiler of the self-assessment report.
- The annual safety culture assessment report, SE 38462 for 2018 reported on in 2019 noted only one team member besides the compiler of the self-assessment report.
- There is no evidence that the head of departments has provided input into the annual process of safety culture self-assessment by means of the Safety Culture Forum.
- No details have been recorded of focus groups participating in the annual assessments.

When leadership do not fulfil their assigned responsibilities associated with implementing and maintaining the safety culture enhancement programme, including the relevant monitoring, the required environment to promote and foster a healthy safety culture, may be negatively impacted. To highlight this anomaly, the following nonconformity has been raised:

**CR114005:** *The Power Station Manager has not led the Safety Culture Forum, which consists of his direct reports, in order to assess the health of safety culture.*

3.2.3.3. No anomalies were noted concerning the responsibilities assigned to the Safety Culture Practitioner or Co-ordinator function residing within ISED.

3.2.4. Monitoring of the KNPS NSC Health (SCEP and BA safety culture plan)

In reviewing KAA-850 Rev 0, it was noted that specific key performance indicators (KPIs) used to measure the NSC health within the BA, has not been defined and documented. Due to this lack of documented prescription, and the failure of the Safety Culture Forum to meet, who is tasked to review and reflect on the health of safety culture, it was noted that the only probable way to measure or assess the current health of NSC would be to use the results of the three-yearly culture survey. This statement was corroborated during a number of audit verification interviews.

It was noted that in an ISED presentation to the Regulator, dated 1 November 2019, a number of KPIs which would be used to monitor the health of NSC within the NOU, were communicated. It was also noted that these KPIs were endorsed by NEXCO. The indicators noted are as follows:

- Staff Engagements
- Observation Programme Health (focus on Paired Observations)
- CAP Health

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- Leadership Programme
- Self-Assessment Programme Health
- Nuclear Safety Concern

It was confirmed that these KPIs were presented at the 4<sup>th</sup> June 2019 NEXCO meeting. It was also noted that to date, the endorsed KPIs have not been implemented within the KNPS BA and across the wider NOU. As a result a NSC health measure, which applies the NEXCO endorsed KPIs, was not evident.

It was also noted in Table 1 of this report that varying KPIs are being applied within the various BAs sampled and as it stands, alignment across the BAs would be required to ensure a collective NSC health measure could be achieved. To highlight the shortcomings noted above, the following observation, previously mentioned in section 3.1 of this report, was raised.

**AU 39424-002 QA:** *In order to effectively implement the NEXCO endorsed nuclear safety culture health indicators which is needed to measure the status of the established Eskom Nuclear Objective, may require further consolidation and review in order to ensure that business area KPIs are aligned and are able to support this overall NOU health measurement.*

### 3.2.5. Feedback and Continual Improvement which support enhancement of the KNPS SCEP

KAA-850 Rev 0, paragraph 5.8.1.3 notes that the creation of the SCEP and the maintenance of the SCP will facilitate continuous improvement of the safety culture within KNPS. While paragraph 5.8.1, notes key aspects required to support feedback and continual improvement of the SCEP, which may include applying actions, such as: event reporting, operating experience (OE) and the implementation of self-assessments of programs and processes to identify gaps and opportunities for improvement.

In this area the following aspects were assessed for compliance and effectiveness:

- The Nuclear Safety Enhancement Committee (NSEC) Process documented in KGA-097 Rev 0.
- The use of event reporting, particularly as relates to Observations and coaching.
- The use of Operating experience (OE).
- The implementation of self-assessments of programs and processes to identify gaps and opportunities for improvement.

3.2.5.1 In order to holistically evaluate continual improvement which supports enhancement of the SCEP in this area, the implementation of the Nuclear Safety Enhancement Committee (NSEC) Process documented in KGA-097 Rev 0 was assessed, as this committee is required to identify emerging human performance issues, and determine strategies for improvement which directly impact NSC.

In the same way the other committees noted in this report were assessed, the NSEC was evaluated using the following criteria:

- Frequency of executed meetings for the period 2017 to 2019;
- Quorum of the meetings for the period 2017 to 2019;
- Execution of documented mandates.

According to KGA-097 Rev 5, *Station Event-Free Clock Program*, paragraph 5.2.4, the NSEC meeting shall be held on a monthly basis with a minimum of 10 meetings per year. Furthermore, in paragraph 5.2.5 it notes that the NSEC meeting will be chaired by the ISED Manager, unless designated otherwise by the PSM. While paragraph 5.2.6 notes the NSEC quorum as the chairman and at least six (6) represented departments from Maintenance, Operating, Plant Engineering, Radiation Protection, Chemistry and Nuclear Services (mandatory attendance) with optional attendance by Work Control, ISED, Outage and Training.

The following anomalies were noted:

- The minimum number of the NSEC meetings were not held during the period 2017 to 2019.
- Minutes of Human Performance Oversight Committee meetings, which were provided to the auditor, were not reviewed or signed by the relevant manager.

When the minimum NSEC meetings are not held, opportunities to identify improvement strategies to enhance human performance issues may not occur.

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**CR114002:** *The minimum number of Nuclear Safety Enhancement Committee (NSEC) meetings (also known as HPOC) was not held during the period 2017 to 2019.*

3.2.5.2 Based on the documented prescription for continual Improvement of the established SCEP, the following areas were reviewed for effective implementation as part of the Nuclear Safety Enhancement Committee (NSEC) Process documented in KGA-097 Rev 0:

- Event reporting, focusing particularly on job observations and related trending.
- The application of OE, particularly Human performance type OE.

Regarding event reporting, with particular focus on job observations and related trending, a total of ninety-three *HPOC Departmental Feedback* forms were reviewed. In addition, Observationway was interrogated for the same period, in order to determine if the available trend data was appropriately assessed and used in identifying both potential adverse trends and useful operational experience.

It was observed that the process of collecting and forming meaningful insights from observation cards may have been negatively impacted by line groups bypassing Devonway controls when entering *full stops* (.) instead of the expected value-adding information in the comment field. This practice was pervasive in the groups assessed during this review. It has also been noted that the Devonway portal can facilitate effective trending but when attention to detail and information is deliberately omitted, the data recorded may not fully support meaningful data analysis.

In isolation this shortcoming may not be significant, but since the CAP/ NSEG trending capacity is currently limited and the station quarterly trend report or similar report is not being compiled, there may be an over-reliance on the Station CAR process, to identify adverse trends and not optimising the capability of Devonway trending functionality.

It was also observed that KAA-828 Rev 0, *Trending at Koeberg Power Station* has been withdrawn on 2019-02-27 which potentially may further diminish the trending capability/function provided by NSEG. To highlight this anomaly, the following observation has been raised:

**AU 39424-011 QA:** *Based the 2019 HPOC Departmental Feedback forms reviewed, it is evident that emerging human performance issues are not identified using the trending mechanisms available through Devonway and guidance provided in KGA-078, Coaching and Job Observation at Koeberg Nuclear Power Station, in order to ensure that human performance strategies for improvement are determined.*

In reviewing the ninety-three *HPOC Departmental Feedback* forms, it was also observed that the information captured by managers may not always indicate whether the behaviour observed is regarded as positive or negative and therefore it is not clear whether observed behaviour requires correction or whether the behaviour observed should be commended and integrated across the wider organisation. It was also observed that the current HPOC Departmental Feedback form does allow for related information to be captured, however what may be lacking is the critical review and assessment of the Observation data available when completing these forms.

Further review of the ninety-three HPOC Departmental Feedback forms, also highlighted that two different versions of the *HPOC Departmental Feedback* forms have been applied by various line groups for the period January 2019 to January 2020 as follows:

- Revision 3 – Applied by Operating and the Outage Management groups
- Revision 2 – Applied by Chemistry, Nuclear Services, Maintenance Execution, Radiation Protection, Training and System Engineering (Group names as noted on the completed feedback forms)

A notable difference between revision 3 and revision 2 of this form is the addition of the field, *Human: Technical Ratio*, which allows for HPOC to monitor this key ratio as part of identifying emerging human performance issues. Further review of the *HPOC Departmental Feedback* forms, highlighted that these forms have not been processed as controlled document as follows:

- There is no unique reference assigned
- The electronic master is not available and maintained on the EDMS.
- The paper master is not stored and preserved with the document controlling body.

Similarly to *HPOC Departmental Feedback* forms, the NSEC meeting Terms of Reference has also not been managed as a controlled document as multiple word revisions for the Nuclear Safety

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Enhancement Committee (NSEC) Terms of Reference were provided to the auditor during the preparation and execution phases of the audit, e.g. Rev 3 dated 2017-07-20 and Rev 4 dated 2017-09-20. In addition, a word version of the Nuclear Safety Enhancement Steering Committee Terms of Reference (Rev 2) was also provided.

Based on these documents not being managed as controlled documents, line groups were applying out-dated forms and omitting information required for the specific HPOC purpose. In addition, distributing outdated Terms of Reference documents for certain committees may result in out-dated mandates being applied by relevant personnel. To highlight this anomaly the following nonconformity has been raised:

**CR114004:** *The Nuclear Safety Enhancement Committee (NSEC) Terms of Reference and the HPOC Departmental Feedback form have not been managed as controlled documents.*

3.2.5.3 KAA-850 Rev 0, paragraph 5.8.1.4, requires that self-assessments of programs and processes to identify gaps and opportunities for improvement be used to continually improve safety culture within KNPS. In order to assess compliance in this area a sample of self-assessments were selected to determine if related actions have been captured and tracked on Devonway.

According to a Devonway Query performed on 2020-03-11, following details were noted for the 2017 NSC self-assessment:

- Certain actions associated with the self-assessment completed in 2017 have not all been closed and are indicated as overdue on Devonway. The following two actions have been noted as overdue:
- SE 37932-006 GA (Raised: 2018-11-13 & with due date 2019-04-30) - *Assess current proficiency levels in all areas across the NOU.* (SGM)
- SE 37932-007 GA (Raised: 2018-11-13 & with due date 2019-04-30) - *Develop and Implement customised leadership training to address the following behaviours: Accountability, Trust and Respect* (ISE DR)

According to the same Devonway query, the following two actions remain open with noted due dates in the future:

- SE 37932-003 GA (Raised: 2018-11-13 & with due date: 2020-03-31): *Develop and implement change management as it relates to the formalised structures.* (PSM)
- SE 37932-005 GA (Raised: 2018-11-13 & with due date: 2020-05-31): *Develop and Implement formalised handover process as it relates to stand-in/acting management positions* (PSM).

Based on the fact that the actions remain unresolved for an extended period of time (16 months), the following observation has been raised:

**AU 39424-008 QA:** *Resolution of certain actions and recommendations identified during the 2017 NSC self-assessment and reported in 2018 (SE 37932) have not been timeously completed, based on Devonway data reviewed.*

According to a Devonway Query performed on 2020-03-11, the following details were noted for the 2018 NSC self-assessment (SE 38462):

- The 2018 Nuclear Safety Culture self-assessment, SE 38462, titled *NOU Nuclear Safety Culture 2018 report* was initiated and closed on 2019-06-11.
- No actions have been loaded on Devonway even though six strategic actions were recorded in the report. A link to the report has been provided in Devonway.
- There is no evidence that the relevant manager would be able to determine if all actions identified during the 2018 Nuclear Safety Culture self-assessment report, have been tracked to completion based on the Devonway data available.

Although the 2016 Culture survey was executed by an external supplier and may not be regarded as a self-assessment, it was noted that the survey was captured as a self-assessment on Devonway. The following Devonway details apply to the 2016 Nuclear Safety Culture survey:

- SE35153 titled, *Focused SE 57722 Nuclear Safety Culture assessment (NNR Progress report 2016)* – ISED was initiated on 2015-08-06 and closed 2017-06-06.
- No actions have been loaded on Devonway even though ten recommendations were recorded in the report.

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- A second entry for the 2016 Nuclear Safety Culture survey captured as SE 57722 was noted. SE 57722 titled, *Nuclear Safety Culture assessment (NNR Progress report 2016)* was initiated and closed on 2016-04-11.

In order to ensure actions are appropriately assigned and tracked to completion may necessitate raising these actions, whether general or corrective in nature on Devonway. When actions are not visible to the wider organisation and the assigned owners, the organisation may be challenged in tracking these actions during implementation up until appropriate closure.

Furthermore if actions are not loaded on the Devonway database, the validation of actions closed and the follow-up effectiveness review of these actions may not be possible as recommended by the IAEA Safety Guide GS-G-3.5, *The Management System for Nuclear Installations* which proposes that a follow-up assessment should be performed taking into account the time needed for improvement actions to have their full effect on the safety culture.

During the audit, the ISED manager stated that these self-assessment actions were being tracked on Devonway using *LI* actions. However due to time constraints, the auditor was unable to verify the validity of this statement.

To highlight the anomalies associated with the 2016 Culture survey and the 2018 NSC self-assessment, the following observation has been raised:

**AU 39424-007 QA:** *All the actions and recommendations identified during the 2016 Nuclear Safety Culture survey as well as the 2018 Nuclear Safety Culture self-assessment, have not been captured on Devonway as related items or additional actions.*

Note that the ISED manager had agreed to provide this information during the reporting phase of the audit but to date, the related *LI* numbers have not been provided.

It is also important to note that in regulatory correspondence regarding the 2017 NSC culture report (K-25415-E, dated 15 April 2019) in response to a Regulatory Specific Comment (SC-4), Eskom noted that the intent of a NSC report is to document the results of the assessment and that actions associated with the report are detailed as per all investigations on Devonway and the status can be obtained at any stage. It is QA's opinion that the noted Eskom response to the Regulator would apply not only to the 2017 NSC self-assessment but also to the 2018 Self-assessment and possibly the 2016 and 2020 Culture survey report/results.

3.2.5.4 Finally, the common cause assessment (SE 38585) stemming from a request from the Station CAR meeting, which was initiated on 2019-07-19 and closed on 2019-10-21, was reviewed in order to verify that all identified actions have been identified and are tracked to completion on Devonway.

Based on a comparison of the actions documented in the self-assessment report, which was endorsed by the Plant and/or ISED Managers, and the report generated from Devonway (2020-03-02 and 2020-03-11), it was evident that the actions and related action owners, for the items below, were not captured on Devonway.

- Actions 6.1 to 6.9 – Referring to groups performing a needs analysis on HP training for their specific group (Due date: 2019-12-15).
- Action 7- Amend HP KPI's to reflect input from the HP forum, PSC forum and PSR forum (Due date 2020-01-31).
- Action 8- Appoint a station HP custodian (Due date: 2019-12-15).

Although the resolution of these actions was not verified by the auditor, it was confirmed during the verification interview with the ISED manager that these actions were still required and the resolution of these actions were still pending.

It is important to note that actions associated with self-assessments, whether general or corrective in nature, are required to be appropriately assigned on DW in order to ensure actions are tracked to completion. When actions are not visible to the wider organisation and the assigned owners, the following impact may be experienced:

- The assigned action owners are unaware of actions and related expectations.
- The organisation may not be able to continuously track actions during implementation up until appropriate closure.

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- Furthermore if actions are not loaded in such a database as Devonway, the validation of actions closed and the follow-up effectiveness review of these actions may not be possible.

To highlight the above-mentioned anomaly, the following observation has been raised:

**AU 39424-012 QA:** *Certain actions and recommendations identified during the common cause assessment (SE 38585) titled, Self-Assessment of Recent Plant Events Related to Human Performance, have not been loaded on Devonway, based on the Devonway data reviewed.*

### 3.2.6. KNPS Records Management

Records generated as part of the Koeberg Nuclear Power Station Safety Culture Enhancement Programme, which is required to ensure that compliance can be demonstrated in the future, was assessed by verifying compliance to KAA-850 Rev 0 and 238-6 Rev 4 requirements.

3.2.6.1 According to KAA-850 Rev 0 paragraphs 7.1 to 7.3 the following documented outputs have been identified as permanent records:

- The SCP for each year is to be kept as permanent records.
- The Safety Culture Survey results are to be kept as permanent records.
- The Annual Safety Culture report was noted as a permanent record.

In addition, 238-6 Rev 4, *Nuclear Document and Records Management Requirement*, requires the following:

- Paragraph 5.1 specifies that records shall be managed by indexing identified records on a Records Retention Matrix (240-43723778). Furthermore, maintaining the Records Retention Matrix on a continual basis and reviewing it at prescribed intervals, is required.
- Paragraph 5.4 requires that in instances where BAs store their own records, they shall request a waiver from TD&RM.

The following anomalies were identified in this area:

- The following permanent records, identified in KAA-850 Rev 0 paragraph 7.1 to 7.3, have not been indexed on the authorised QRL dated 2015-12-14, for the Nuclear Safety Enhancement Group (NSEG) and therefore these records have not been archived since the authorisation of KAA-850 Rev 0. These records are as follows: the safety culture survey results; the annual safety culture report and the safety culture plans.
- The above reports and plans were retrievable from various ISED individuals but were not managed as 'in-section' records. It has been confirmed by TD&RM that no waiver request for 'in-department/section' storage has been received from NSEG.
- The latest authorised QRL for NSEG was last reviewed on 2015-12-14.

3.2.6.2 In assessing the oversight exercised by management over the BA SCEPs, minutes of Management Review meetings were also reviewed to determine if a NSC element was included in the noted agenda items as documented in 238-128 Rev 3 *Management Review Standard (Appendix A, Typical Management Review Meeting Inputs)*

As part of the KNPS review, it was evident that the KNPS Management Review meeting minutes have not been indexed on an authorised Quality Record Listing (QRL) and as a result no KIS location has been noted for this particular record. As a result of this anomaly, there is no evidence that the KNPS Management Review meeting minutes have been transmitted to TD&RM. In addition, it was confirmed by TD&RM that no waiver request for in-section storage had been received from the Independent Safety Evaluation Department (ISED).

When records are not indexed and subsequently archived as required, the necessary protection and retrievability of these records may be compromised. To highlight the noted anomalies, the following nonconformity has been raised:

**CR113999:** *Records related to the Koeberg Nuclear Power Station Safety Culture Enhancement Programme and the Management Review process for Koeberg Nuclear Power Station, have not been indexed on an authorised Quality Record list (QRL) or a Record Retention matrix and subsequently have not been archived.*

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### 3.3 Nuclear Project Management (NPM)

The Safety Culture Enhancement Programme for NPM documented in 240-119091328 rev 5, *The Safety Culture Enhancement Programme*, was authorised in September 2019, and is noted as the main criteria applied in assessing compliance in this area. In addition, 240-119091288 Rev 4, *Responsibilities of NPM Department and Key Function* was also applied as audit criteria.

#### 3.3.1 Establishment and Maintenance of the NPM SCEP (including the NSC Plan)

In this area, both the Safety Culture Enhancement procedure and the available NSC plans were assessed to determine if they were valid and up to date. In addition, the configuration of these plans and related actions were also assessed by reviewing identified storage locations and available Devonway data, respectively.

3.3.1.1 The Safety Culture Enhancement Programme for NPM which is documented in 240-119091328 rev 5, *The Safety Culture Enhancement Programme*, was authorised in September 2019 and remains current. A minor discrepancy was however noted in the current revision of 240-119091328, where a withdrawn procedure, KGA-093 was still referenced in paragraph 2.2.2 and as part of the Informative references and in the body of the document, paragraph 3.1 dealing with Individual Awareness/Questioning Attitude. KGA-093 was withdrawn on 2013-02-19. To highlight the above-mentioned anomaly, the following observation was raised:

**AU 39424-013 QA:** Reference to a KNPS document, KGA-093, which has been withdrawn since 2013-02-19, has been noted in 240-119091328 Rev 5, *Safety Culture Enhancement Programme (for NPM)* which was authorised in September 2019.

3.3.1.2 In assessing the validity and currency of the NSC plans, it was stated by the SCEP co-ordinator that the established safety culture plan is aligned with Eskom's financial year. This was confirmed by reviewing safety culture plans for the period, FY2019 and FY2020

In reviewing the various versions of the NPM Safety culture plan, it was noted that actions were identified within the following framework:

- Staff engagement sessions- NSC awareness;
- Training;
- Safety Culture Meetings;
- Monitoring.

It has been confirmed that the SCP has been updated on an annual basis and periodically, which is evident in the revision status of the plans reviewed.

In particular, the NPM Safety Culture plans are managed using MS Project which allows for revision details to be captured using multiple fields. The details captured included: the period for which the plan has been developed e.g. FY2020; the specific plan revision e.g. 3T; as well as the specific review meeting where the changes were made or from which the changes stemmed from e.g. FY2020\_10.

Based on the information captured on the plan, there were multiple areas where revision control was noted. The benefit of the system adopted by NPM to manage the updates to their plan has many benefits which include: access to previous revisions; improved traceability of plan updates/changes as well as the ability to periodically evaluate the effectiveness of the NPM SC plan.

Furthermore, access to the current NPM SC plan via Sharepoint was possible. These plans are retained in PDF format thereby protecting the plans from unintended changes. The sample of plans reviewed was signed by the NPM SCEP co-ordinator and the initial plans for each financial year has been signed by the Senior Manager, Nuclear Projects.

It was noted that the process for updating the NSC plan is as follows: Changes are proposed to NPM Senior Manager who would concur. Changes are then effected by a planner/ SCEP co-ordinator, who is also a project manager and has access to the required (MS Project) application.

Based on the practices implemented in managing the NPM SC plan, an area of good control has been observed as follows:

**AU 39424-021 QA:** An area of good control has been observed in the management of the Nuclear Project Management Safety Culture Plan.

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### 3.3.2 Control of the NPM Safety Culture Enhancement programme (via Committees)

The control of the NPM Safety Enhancement programme via the *Nuclear Project Management Safety Culture Committee* (NPMSCC) as documented in 240-119091328 Rev 5, was assessed as follows:

- Frequency of executed meetings;
- Quorum of the meetings;
- Execution of documented mandates.

3.3.2.1 Concerning the frequency of executed meetings, according to the SCEP Co-ordinator, the NPMSCC meetings are held on a monthly basis (2nd Friday of each month). At the time of the audit, for the year-ending 2020, a total of nine meetings had been held. It was confirmed, using a sample of meeting minutes that a meeting had been held each month from April 2019 to February 2020 with the exception of July 2019 and December 2019. It was also noted that the frequency of these meetings have not been explicitly defined and documented in 240-119091328 Rev 5. To highlight this anomaly, the following observation has been raised:

**AU 39424-015 QA;** *The frequency of the NPM Safety Culture Committee meetings have not been defined in 240-119091328 rev 5, Safety Culture Enhancement Programme (for NPM).*

Even though this area for improvement has been noted, it is recognised that the frequency of the NPMSCC meetings exceeded that of any other safety culture committee meeting held in the various BAs reviewed during this audit. This has been noted as an element of the good practices observed and has been discussed later in this section.

3.3.2.2 With regards to quorum of the NPMSCC and the level of staff involvement, according to procedure, 240-119091328 Rev 5, the committee should comprise of personnel from across the NPM BA, thereby encouraging staff participation in safety culture activities. The required quorum consist of three principals (NPM), 1 principal (SGR) and the Chairperson.

During the February 2020 NPMSCC meeting held in the Koeberg NPM VC boardroom on Friday, 2020-02-28, the following was observed by the audit team:

Staff involvement by personnel from across the NPM BA was evident. The personnel attending the meeting were from all levels of staff and also included personnel from the Steam Generator Replacement project. Active participation from all staff members attending the meeting was noted while a questioning attitude was evident among staff resulting in robust discussion on a number of topics.

It was also noted that the, Nuclear Projects Senior Manager, has nominated all his direct reports to chair the NPMSCC meetings on a rotational basis. This was confirmed by reviewing appointment letters, the sample of meeting minutes reviewed and the NPM SC Plan, where a roster has been included for chairperson quarterly assignments. Additional members of the meeting have also appointed and their respective roles and responsibilities have been documented in 240-119091328 Rev 5, Appendix C and 240-119091288 Rev 4, *Responsibilities of NPM Department and Key Function*.

As a result of these roles and responsibilities being clearly defined, assigned and monitored, the following areas of good practice has been noted:

**AU 39424-022 QA:** *An area of good control has been observed in the management of the Nuclear Project Management Safety Culture Committee Meetings and overall staff involvement*

**AU 39424-023 QA:** *There is no ambiguity related to roles and responsibilities assigned to personnel who are involved in implementing the NPM SCEP.*

3.3.2.3 Regarding the execution of the NPMSCC documented mandate, according to 240-119091328 Rev 5, the NPMSCC is a committee focused on overseeing the implementation of the SCEP and improving safety culture within NPM and to ensure compliance with 238-28 and RD-0034. It is also required that this committee monitors the overall status of safety culture within the NPM.

During the February 2020 NPMSCC meeting held in the Koeberg NPM VC boardroom on Friday, 2020-02-28, the following was observed by the audit team:

- The KPI report was presented by the SCEP Co-ordinator to the NPMSCC.
- The NPM SC Plan was presented by the SCEP Co-ordinator to the committee.
- Improvement initiatives were highlighted by various members of the meeting.

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- Any new actions identified during the NPMSCC meeting and existing actions were discussed and tracked.

In reviewing the action list tabled at the same NPMSCC meeting held as well the action lists populated over the 2019-2020 period, it was observed that certain actions have been extended at least twice since being initiated, resulting in these actions remaining open for an extended period of time. This condition is the exception and not the norm when compared to the majority of the actions listed.

Based on the sample meeting minutes and action lists reviewed, sufficient objective evidence has been provided to demonstrate that the committee is active and involves staff at all levels. Assurance can therefore be provided that the documented mandate of the NPM SCC has been executed.

### 3.3.3 Roles and Responsibilities related to the control of the NPM Safety Culture Enhancement Programme

As part of assessing compliance in this area, two key functions were consistently tested across each BA evaluated, namely the role of the senior manager and appointed SCEP role players key in implementing relevant SCEP initiatives.

According to 240-119091288 Rev 4, *Responsibilities of NPM Department and Key Functions*, the following requirements are noted:

3.3.3.1 Paragraph 3.1 requires that the NPM Senior Manager have the overall accountability for the management of safety culture. In order to achieve the specific outputs, the SCEP co-ordinator has been appointed and delegated the following responsibilities, as noted in paragraph 2.5.10:

- Administer and coordinate meetings, functions and actions of the NPMSCC.
- Communicate all relevant safety culture topics and requirements to the NPM BA.
- Ensure that the NPM Safety Culture Enhancement Programme (SCEP) Procedure and Plan are authorised, updated and relevant.
- Promote and support safety culture improvements and initiatives aimed at creating a healthy safety culture in NPM.
- Monitor NPM safety culture utilising appropriate indicators.
- Liaise with the Koeberg Operating Unit NSED and HPOC forums to align SCEP activities and to share Operating Experience feedback on safety culture aspects.
- Participate in NPM safety culture assessments, audits and surveys.
- Provide advice and insight on safety culture matters to the NPM BA.
- It was confirmed that R Lavelot is the current appointed SCEP co-ordinator. An appointment letter dated, 2019-05-01, was provided to the auditor.

In evaluating compliance to the above-mentioned responsibilities, no anomalies were noted besides the following: Although it is noted in 240-119091328 Rev 5 that the NPMSCC should also be represented at the *Nuclear Safety Enhancement Committee* (NSEC), and/or similar forums, which monitors interdepartmental activities such as the Human Performance and Safety Culture awareness initiatives associated with all NOU related activities. Based on the lack of evidence in this area, an assurance statement cannot be provided (see AU 39424-004 QA).

3.3.3.2 According the *Attributes of a Positive Safety Culture* as documented in 240-119091328 Rev 5, *Appendix B*, management commitment is noted as one of the key attributes required to ensure a positive safety culture. Specifically *Appendix B* states: 'Management commitment to safety is evident when senior managers use their authority to enable and empower workers to behave in safer way while creating a safe and productive working environment'.

In reviewing the objective evidence collected during the audit, the following was noted regarding the role and responsibilities of the NPM Senior Manager:

- The incumbent has encouraged active participation from staff at all levels of the organisation as part of the SCEP. This was evident in the committee member composition and participation.
- There is evidence that all human resources and management systems, procedures and processes necessary to implement and maintain a sustainable strong NSC programme have been made available. This was evident as follows: the currency of the SCEP outputs which included the SCEP procedure and plan, as well as the appointment of various role players

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participating in the NPMSCC has been noted which ensures that assignments and related roles are understood and accepted.

- There is evidence of establishing an open reporting culture, where events are treated as an opportunity to improve individual and organisational performance. This was evident in the tracking of the related KPIs which encourages reporting and OE use.

Based on the level of compliance and active participation by all parties involved in the management of the NPM SCEP, an area of good practice has been noted as follows:

**AU 39424-020 QA:** *The Senior Manager: Nuclear Projects Management's commitment to establishing, executing and improving the NPM Safety Culture Enhancement Programme is commendable.*

### 3.3.4 Monitoring of the NPM NSC Health (SCEP and BA safety culture plan)

In reviewing 240-119091328 Rev 5, it was noted that nine specific key performance indicators (KPIs) used to measure the NSC health, has been defined and documented in paragraph 3.7. In addition it is required that the trending be performed on a quarterly basis and presented to the NPMSCC, where it is to be evaluated for any preventative or corrective action.

These KPIs are as follows:

- Safety Culture Committee Quorum;
- Adherence to Safety Culture Plan;
- Percentage of Actions overdue;
- Safety events (when more than one safety CR of the same code is raised per month);
- Number of Nuclear Safety Concerns Reported;
- Number of CRs reported monthly by NPM versus the number of CRs reported monthly for NPM learning;
- Number of Safety Heroes nominated per month;
- Number of Management Initiatives generated per quarter; and
- Comparison of Top Non Compliance trend codes.

Based on the KPI report reviewed, the following KPIs were noted as being measured in practice:

- KPI: NPMSCC – Quorum- Individual attending directly impact stats (31 attendees monitored)
- KPI: NPMSCC - Adherence to SCP
- KPI: NPMSCC - Percentage of Actions Overdue
- KPI: Industrial Safety - Unsafe Behaviours (NPM)/ KPI: Industrial Safety - Unsafe Behaviours (SGR)
- KPI: Industrial Safety - Safety Events (NPM)/ KPI: Industrial Safety - Safety Events (SGR)
- KPI: Reporting Rates (NPM) / KPI: Reporting Rates (SGR)
- KPI: Positive Re-enforcement - Safety Heroes (NPM)/ KPI: Positive Re-enforcement - Safety Heroes (SGR)
- KPI: Positive Re-enforcement -Management Initiatives
- Trending: Non-adherence Indicator (November 2019) / KPI: Non-adherence Indicator (SGR)
- KPI: Non-Compliance (NPM) / KPI: Non-Compliance (SGR)
- KPI: Observations (NPM) / KPI: Observations (SGR)

It was confirmed on Friday, 2020-02-28, during the observation of the NPMSCC meeting, that the KPI report was presented to the committee. In addition the quarterly KPIs were provided to the auditor for review and no anomalies were noted. In conclusion, there is good alignment between documented prescription and practice. However it is important to note that the consolidated NOU NSC KPI still requires implementation across the NOU as noted in the observation below and discussed in section 3.1 of this report:

**AU 39424-002 QA:** *In order to effectively implement the NEXCO endorsed nuclear safety culture health indicators which is needed to measure the status of the established Eskom Nuclear Objective, may require further consolidation and review in order to ensure that business area KPIs are aligned and are able to support this overall NOU health measurement.*

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### 3.3.5 Feedback and Continual Improvement which support enhancement of the NPM SCEP

According to 240-119091328 Rev 5, paragraph 3.6, improvement of the Safety Management System (SMS) can be achieved by using the results of self-assessments, audits, surveillances and condition reports/investigations as a feedback mechanism in order to improve the processes. In addition the procedure also states that at strategic points in time, independent peer reviews should be utilised to facilitate continual improvement and to review process adequacy. The results of periodic safety culture assessments are also evaluated to monitor the impact of these changes on the safety culture of NPM.

3.3.5.1 During the Initial verification interview with the NPM SCEP co-ordinator on Thursday 2020-02-27, it was noted that he was not aware of any particular safety culture self-assessments completed during the 2019-2020 period within NPM which would qualify as a means of improving the SMS of NPM. However during the NPMSCC meeting held on Friday 2020-02-28, it was mentioned by one of the meeting's participants that a safety culture self-assessment evaluating the willingness of suppliers to raise concerns, was completed. The following details of the self-assessment were later provided to the auditor: Date of SE: 2019-02-18, unique SE number: SE 38130 and title, *Self-assessment on the Contractor Evaluation criteria*. Based on the initial interview and the observation of the NPMSCC meeting, the following was noted:

- The NPM SCEP co-ordinator was not aware of this self-assessment at the time of the verification audit held on 2020-02-27.
- The SCEP Co-ordinator has only been appointed since May 2019, after the execution of self-assessment, SE 38130.
- Neither the safety culture plans for FY 2019 nor FY2020 noted any details of the contractor NSC self-assessment.
- A review of all versions of the safety culture plans indicated no details regarding the NSC self-assessments planned and executed.

Based on the limited information noted on the safety culture plans, it is recommended that additional detail such as the unique SE and possibly the title be noted on the plan. This would ensure traceability to related self-assessments which are planned and executed for improving the SMS of NPM. To highlight this area for improvement, the following observation has been raised:

**AU 39424-014 QA:** *Insufficient detail regarding the SC Health assessments planned and executed were included in the FY2019 and FY2020 NPM SC plans.*

In reviewing the administrative controls associated with the Devonway actions for SE 38130, it was noted that four actions were raised and subsequently closed on Devonway. No additional anomalies were noted.

3.3.5.2 RD-0034 Rev 0, Quality and Safety Management Requirements for Nuclear Installations, requires in paragraph (122) that a systematic process for monitoring safety culture within level 1 organisation's must be established, using suitable leading and lagging indicators, and qualitative information (for example findings from self-assessments, NNR and independent reviews). As previously observed in section 3.1 of this report, the leading and lagging indicators which are to be used when performing a safety culture self-assessment, have not been defined in the NPM SCEP documentation (see AU 39424-005 QA).

### 3.3.6 NPM Records Management

Records generated as part of the NPM Safety Culture Enhancement Programme, which is required to ensure that compliance can be demonstrated in the future, was assessed by verifying compliance to 240-119091328 Rev 5 and 238-6 Rev 4 requirements.

3.3.6.1 According to 240-119091328 Rev 5, paragraph 6, the following documented outputs have been identified as non-permanent records to be retained for two years on Sharepoint:

- The Safety Culture Plan for each year,
- NPMSCC agendas,
- NPMSCC attendance records,
- NPMSCC critique sheets,
- NPMSCC minutes,
- KPIs and all Audit/Assessment/Survey results.

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In addition, 238-6 Rev 4, Nuclear Document and Records Management Requirement, requires the following:

- Paragraph 5.1 specifies that records shall be managed through indexing on a Records Retention Matrix (240-43723778). It is also required that Records Retention Matrix be maintained on a continual basis and reviewed at prescribed intervals.
- Paragraph 5.4 requires that in instances where BAs store their own records, they shall request a waiver from TD&RM.

In practice minutes of these meetings are stored in the following location

<https://portal.eskom.co.za/sites/nuclearpip/meet/NPMSCC/MRC%20Minutes/Forms/AllItems.aspx>, and were retrievable during the audit. The following record anomalies were noted in this area:

- NPM SCEPT records were not indexed on the latest QRL retrieved from TD&RM (dated 2016-06-03).
- Records were not archived or retrievable from TD&RM
- There was no waiver in place for identified SCEPT records retained within department by NPM.

3.3.6.2 As previously mentioned, in assessing the oversight exercised by management over the BA SCEPTs, minutes of management review meetings were also reviewed to determine if NSC elements were included along with noted agenda items as documented in 238-128 Rev 3, *Management Review Standard* (Appendix A, Typical Management Review Meeting Inputs).

A sample of management review meetings (MRM) minutes for the period 2017 to 2019 were reviewed in order to determine whether the NSC element had been included as a typical meeting input. No anomalies were noted.

In practice meeting minutes are stored on Sharepoint in the following location, <https://portal.eskom.co.za/sites/nuclearpip/meet/MRM>, and hardcopies are also retained in section. According to the *NPM Management Review* procedure, 240-119091486 Rev 4, paragraph 8, MRM minutes are to be retained for a period of not less than 10 years. Although these records were available at NPM, by not indexing these records on an authorised QRL or record retention matrix, the record archiving requirements would not have been reviewed and endorsed by TD&RM. In addition, records assigned a retention period of ten years would typically require appropriate storage conditions only available at TD&RM.

When records are not indexed and subsequently archived as required, the necessary protection and retrievability of these records may be compromised. To highlight the risk associated with these anomalies, the following nonconformity was raised:

**CR114010:** *Records for Nuclear Project Management (NPM), related to the Safety Culture Enhancement Programme and the Management Review Committee (MRM), have not been indexed on the authorised Quality Record list (QRL) or a Record Retention matrix.*

### 3.4 Nuclear Commercial (NC)

The Safety Culture Enhancement Programme for Nuclear Commercial (NC) documented in 238-165 Rev 1, *Nuclear Commercial Safety Culture and Human Performance Procedure*, was authorised on 2015-10-09, and is noted as the main criteria applied in assessing compliance in this area.

#### 3.4.1 Establishment and Maintenance of the NC SCEPT (including the NSC Plan)

In this area, both the Safety Culture Enhancement procedure and the available NSC plans were assessed to determine if they were valid and up to date. In addition, the configuration of these plans and related actions were also assessed by reviewing identified storage locations and available Devonway data, respectively.

3.4.1.1 It was noted that 238-165 Rev 1, *Nuclear Commercial Safety Culture and Human Performance* procedure has not been reviewed since its initial authorisation in 2015 and has passed its next review date of October 2019. In addition, a content anomaly was observed in that the role of the Corporate Consultant (Human Performance) documented in 238-165 rev 1 paragraph 2.5.1, no longer exists and as a result, there is no evidence that the required review of the Nuclear Commercial Safety Culture and Human Performance Plan to ensure consistency and effective

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implementation has occurred at the KOU level. In addition reference is made to the Human Performance Standard (238-173) which has been withdrawn.

Furthermore, 238-219 Rev 1, *Level-1 Supplier Safety Culture Enhancement Programme (SCEP) Requirements*, which prescribes the requirements and supports the implementation of Supplier Safety Culture Enhancement Programmes, has passed its next review date. The procedure was authorised on 2014-06-06 and was required to be reviewed by November 2016.

When controlled documents are not reviewed timeously, there is risk of process noncompliance as practices may have evolved from authorised processes. To highlight this anomaly, the following nonconformity has been raised:

**CR114006:** *Certain Nuclear Commercial Procedures, required for implementing Nuclear Safety Culture, has passed their next review dates.*

3.4.1.2 In assessing the validity and currency of the NSC plans, it was stated by the NC Senior Advisor (Business Integration and Support) that the established safety culture plan is aligned with the Eskom financial year. This was confirmed by reviewing safety culture plans for the period, FY2018 to FY2020. The plans are retrievable from Sharepoint from the following location: <https://portal.eskom.co.za/sites/nuccomm/Lists/SCEP/Grouped.aspx>.

According to 238-165 Rev 1, two levels of Nuclear Commercial Safety Culture and Human Performance plans are established, namely, a high level and a working level Safety Culture and Human Performance plan. It was stated by the NC Senior Advisor interviewed on Wednesday 2020-03-04, that the working level plan refers to the scheduled actions associated with the High level plan. It was also noted that the NC Safety Culture and Human Performance Plan is maintained on Sharepoint and is updated by the Nuclear Commercial Senior Advisor (Business Integration and Support) based on information provided by action owners. Anomalies pertaining to the resolution of the SCP actions were noted are discussed in section 3.4.5 of this report.

#### 3.4.2. Control of the NC Safety Culture Enhancement programme (via Committees)

The control of the NC Safety Enhancement programme via the Nuclear Commercial Safety Culture and Human Performance Oversight Committee as documented in 238-165 Rev 1, was assessed as follows:

- Frequency of executed meetings;
- Quorum of the meetings;
- Execution of documented mandates.

3.4.2.1 According to in 238-165 Rev 1 paragraph 3.2.4.1, it is required that the Nuclear Commercial Safety Culture and Human Performance Oversight Committee meetings be held on a quarterly basis. The Nuclear Commercial is required to provide oversight and monitor the effective implementation of the Nuclear Commercial Safety Culture and Human Performance Plan.

3.4.2.2 The *Nuclear Commercial Safety Culture and Human Performance Procedure*, 238-165 Rev 1 paragraph 3.2.4.2, requires that quorum consists of the chairperson and at least three other principal or alternate members. Paragraph 3.2.1 notes the chairperson as the Senior Manager Nuclear Commercial or any delegated principal member. The principal members are the representatives from each of the Nuclear Commercial departments, comprising staff and supervisory / management level personnel. While the secretariat function, is managed by the appointed Safety Culture and Human Performance Practitioner for Nuclear Commercial.

3.4.2.3 In reviewing the stated mandate of the committee, 238-165 Rev 1 paragraph 3.2.2, assigns the following responsibilities to the Nuclear Commercial Safety Culture and Human Performance Oversight Committee:

- Provide direction for improving overall Safety Culture in line with the INPO document, *"Traits of a Healthy Nuclear Safety Culture"*, complying with the requirements of 238-28 and implementing the requirements in this procedure.
- Oversee the compilation, update and execution of the Nuclear Commercial Safety Culture and Human Performance Plan.
- Liaise with KOU Safety Culture and Human Performance forums to align Safety Culture/Human Performance activities and share Operating Experience.

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- Review results of Safety Culture surveys and ensure execution of agreed improvement initiatives.

During the audit, meeting minutes for the period 2017 to 2019 for Nuclear Commercial Safety Culture and Human Performance Oversight Committee could not be provided and only minutes for the October 2015 meeting was available. As a result there was no evidence that the Nuclear Commercial Safety Culture and Human Performance Oversight Committee was active and functional as the single oversight body of the Nuclear Commercial Nuclear Safety Culture and Human Performance Plan. The inactive status of this Oversight Committee was confirmed by the Nuclear Commercial Senior Advisor (Business Integration and Support).

When the required Nuclear Commercial Safety Culture and Human Performance Oversight Committee meetings are not held, there is no assurance that the required oversight during the compilation, update and execution of the Nuclear Commercial Safety Culture and Human Performance Plan is achieved. To highlight this anomaly the following nonconformity has been raised:

**CR114007:** *The quarterly Nuclear Commercial Safety Culture and Human Performance Oversight Committee meetings have not been held since 2015.*

#### 3.4.3. Roles and Responsibilities related to the control of the NC Safety Culture Enhancement Programme

As part of assessing compliance in this area, two key functions were tested, namely the role of the Senior Manager and the appointed Safety Culture and Human Performance Practitioner for Nuclear Commercial.

3.4.3.1 In assessing compliance in this area, a sample of Senior Manager Responsibilities was tested. According to 238-165 Rev 1 paragraph 2.5.2, the Senior Manager: Nuclear Commercial is responsible for the following:

- Develop and implement a Nuclear Commercial Safety Culture and Human Performance Plan.
- Establish a Nuclear Commercial Safety Culture and Human Performance Oversight Committee, and take the role of Chairperson of said committee.
- Appoint a Nuclear Commercial Safety Culture and Human Performance Practitioner.
- Periodically analyse the extent of human error as a contributory cause in safety incidents.
- Devolve elements of the Nuclear Commercial Safety Culture and Human Performance

The following anomalies were noted in this area:

- As previously mentioned, there was no evidence that the Nuclear Commercial Safety Culture and Human Performance Oversight Committee meetings have convened as required.
- There is no evidence that the Senior Manager: Nuclear Commercial has maintained and chaired the Nuclear Commercial Safety Culture and Human Performance Oversight Committee as required.
- There is no evidence that the extent of human error as a contributory cause in safety incidents has been periodically analysed.
- There is no evidence that staff at all levels within Nuclear Commercial have participated in the Nuclear Commercial Safety Culture and Human Performance Oversight Committee meetings for the period 2016-2019.

To highlight these anomalies, CR114008, noted below, has been raised.

3.4.3.2 According to 238-165 Rev 1 paragraph 2.5.3, the Safety Culture and Human Performance Practitioner gives effect to the Nuclear Commercial Safety Culture and Human Performance strategy as follows:

- Assist the Senior Manager: Nuclear Commercial in the development and implement the Nuclear Commercial Safety Culture and Human Performance Plan.
- Develop Safety Culture and Human Performance initiatives to drive the implementation of the Nuclear Commercial Safety Culture and Human Performance Plan.
- Manage the secretariat function of the Nuclear Commercial Safety Culture and Human Performance Oversight Committee.
- Attend the KOU Safety Culture Forum.

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Although evidence of the development and implementation of the Nuclear Commercial Safety Culture and Human Performance plan was noted, there was no evidence of the appointment of the Nuclear Commercial Safety Culture and Human Performance Practitioner. It was confirmed by the Nuclear Commercial Senior Advisor (Business Integration and Support) interviewed on Wednesday 2020-03-04, that she compiles and updates the NSC plan and manages all outputs on Sharepoint. It was also confirmed that independent and/or peer reviews of the plan do not occur.

All these anomalies relate to the responsibilities assigned to the Senior Manager and his direct reports. When leadership do not fulfil their assigned responsibilities associated with implementing the safety culture enhancement programme, the required environment to promote and foster a healthy safety culture, may be negatively impacted. To highlight these anomalies, the following nonconformity has been raised:

**CR114008:** *Certain roles and responsibilities assigned to the Nuclear Commercial Senior Manager, related to the implementation and oversight of the Nuclear Safety Culture Programme, have not been implemented as required.*

#### 3.4.4. Monitoring of the NC NSC Health (SCEP and BA safety culture plan)

In reviewing 238-165 Rev 1, it was noted that specific key performance indicators (KPIs) used to measure the NSC and Human Performance has been documented in Table 1 titled, *Nuclear Commercial Compliance with Safety Culture Plan and Human Performance Requirements*.

The Safety Culture (SC) KPIs prescribed are as follows:

- Corrective Action Program (CAP) health (number of notifications raised).
- Audit/assessment findings.

The Human Performance (HP) KPIs prescribed are as follows:

- CAP health (percentage of closed corrective actions and number of self-reported incidents).
- Recurring corrective actions/repeat events.
- Hours of Human Performance training per individual.

With reference to SC health monitoring, it was noted that the CAP health (number of notifications raised) and audit/assessment findings, are elements covered in the annual MRC meeting minutes. An attachment to the NC SCP was also noted which indicated the analysis of the CRs raised and provided evidence of this element being monitored.

As part of HP monitoring, the CAP health indicators are used as a measuring tool, while recurring corrective actions/repeat events are actioned through trending identified by CAR which usually results in a request to perform a trend/ common cause analysis. In addition, recurring events are also tracked as part of audits executed in the area.

In reviewing the KPIs established within the Nuclear Commercial BA and comparing these to other BAs assessed during this audit, it was noted that although unique indicators may have been established, it is equally important that a common set of NSC indicators be implemented in order to ensure that BA KPIs are aligned and are able to support the overall NOU health measurement. This area for improvement has been previously discussed in section 3.1 and noted across all BA monitoring sub-sections of this report (refer to AU 39424-002 QA).

#### 3.4.5. Feedback and Continual Improvement which support enhancement of the NC SCEP

It was noted that elements supporting continual improvement of the NC SCEP are listed in 238-165 Rev 1, Table 1 titled, *Nuclear Commercial Compliance with Safety Culture Plan and Human Performance Requirements*. These elements include:

- Operating experience (OE) feedback which is used to continually improve the Nuclear Commercial Safety Culture and Human Performance.
- Self-assessments, which provide a structured approach in assessing the effectiveness of programmes, processes or performance against specific criteria are used to identifying areas for improvements.

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- While paragraphs 2.5.3.1 and 3.1.4 of 238-165 Rev 1 states that the implementation of the Safety Culture and Human Performance Plan at departmental level is driven by means of Safety Culture and Human Performance initiatives.

3.4.5.1 It was stated by the Nuclear Commercial Senior Advisor (Business Integration and Support) that OE is captured on an OE Sharepoint Library. This was confirmed using the Sharepoint link below:

<https://portal.eskom.co.za/sites/nuccomm/OE/ layouts/15/start.aspx#/Lists/OEE/AllItems.aspx>.

It was also noted that 238-178 Rev 2, *Process for Capturing Operating Experience within Nuclear Commercial* was authorised 2019-05-28 and is current. No further anomalies were noted in this area.

In order to assess compliance to the area of self-assessments, a sample of self-assessments noted on the Nuclear Commercial SCP was selected to determine if related actions have been captured and tracked on Devonway.

A total of nine periodic safety culture and human performance assessments were identified and planned across the three plans reviewed for the period, 2017-2019. According to the information noted on the individual plans, four of these self-assessments have been completed. The closure of these actions on Devonway was however not verified by the auditor. Of the periodic safety culture and human performance assessments reviewed, it was noted that a number of these assessments were in progress or have been rolled over from year to year. This sample included the self-assessment, SE35232, titled, *The availability of spares*, which has been rolled over from the 2017/2018 plan and still remains open. It was also noted that this action was initiated in Devonway on 2015-09-02 and remains open. Based on the current challenges facing the organisation and the fact that the availability of spares directly impacts the NC core business, it is concerning that this self-assessment has not been completed and actioned, after being initiated almost five years ago.

In addition, a sample of forty-five NC safety SCP actions for the period 2017 to 2020, were reviewed in order to assess implementation and control of these initiatives. It was observed that certain actions important to the NC core business have either not been completed or implemented as planned. Examples include:

- Create awareness of safety culture with suppliers at supplier forums. There is no objective evidence that this action was completed for FY2019 and FY2020. Only the action for FY2018 was indicated as completed.
- In response to action to review SE37932 (completed 2017 and reported 2018) titled, KOU Nuclear Safety Culture - for the NNR, it was reordered that no actions were identified.

Even though the NC Senior Advisor interviewed on Wednesday 2020-03-04 has maintained the NC SC and HP plan, improved control in tracking the SCP actions is required to ensure the continual improvement of the NC SCEP. To highlight these above-mentioned anomalies, the following observation has been raised:

**AU 39424-016 QA:** *Resolution of Nuclear Commercial Safety Culture and Human Performance Plan actions, have not been timeously completed.*

3.4.5.2 RD-0034 Rev 0, *Quality and Safety Management Requirements for Nuclear Installations*, requires in paragraph (122) that a systematic process for monitoring safety culture within level 1 organisation's be established, using suitable leading and lagging indicators, and qualitative information (for example findings from self-assessments, NNR and independent reviews). As previously observed in section 3.1 of this report, the leading and lagging indicators which are to be used when performing a safety culture self-assessment, have not been defined in the NC SCEP documentation (see AU 39424-005 QA).

#### 3.4.6. NC Records Management

Records generated as part of the NC Safety Culture Enhancement Programme, which is required to ensure that compliance can be demonstrated in the future, was assessed.

3.4.6.1 In reviewing 238-165 Rev 1 it was observed that records for the NC SCEP have not been identified. As a result no NC SCEP record has been indexed on any NC authorised QRL or record retention matrix.

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According to 238-8 Rev 4, *Nuclear Safety and Quality Manual*, paragraph 3.1.2, process owners are required to identify records that demonstrate that process results have been achieved. These records are to be specified in the process documentation. In addition, KSA-038 Rev 5: *Requirements for Quality Records*, requires in paragraphs 5.2.3 and 5.3.2, that records be identified, indexed and captured on a record retention matrix.

3.4.6.2 In assessing the oversight exercised by management over the BA SCEP, minutes of management review meetings were reviewed to determine if NSC elements were included along with noted agenda items documented in 238-128 Rev 3 *Management Review Standard* (Appendix A, Typical Management Review Meeting Inputs).

The sample of the management review meetings (MRM) minutes reviewed for the period 2017 to 2019, were as follows: 10 April 2015, 26 April 2016, 26 September 2017 and 01 April 2019. In reviewing these meeting minutes, it was noted that the SCEP procedure, 238-165 (which only expired in October 2019) and the plan were noted as up to date but no specific NSC plan actions or initiatives have been recorded in the sampled of minutes reviewed. Procedure, 238-219 was not discussed during this meeting as it applies to supplier safety culture requirements and not the NC SCEP specifically.

It was observed that 238-166 Rev 2, *Nuclear Commercial Management Review Committee Terms of Reference*, paragraph 9, notes that all records generated by the committee (including minutes of meetings) shall be kept on the Nuclear Commercial workspace on SharePoint. The minutes shall be retained as non-permanent records. In addition, in reviewing the NC Business Integration and Support QRL dated 2016-04-05 it was noted that these records have been indexed and are to be archived in KIS location RS2.6.3 for five years and not retained in section.

The following anomalies were noted:

- The details of the Nuclear Commercial Quality Record Listing (QRL) dated 2016-04-05, does not align with the record location requirements noted in 238-166 Rev 2, *Nuclear Commercial Management Review Committee Terms of Reference*, paragraph 9, which states that records are to be retained as non-permanent records in the Nuclear Commercial workspace on SharePoint.
- It has been confirmed by TD&RM that no waiver request for in-section storage has been received from Nuclear Commercial.
- The authorised QRL (record retention matrix) for the Nuclear Commercial Business Integration and Support group was last reviewed on 2016-04-05.

Based on all the anomalies highlighted in this section, it is important to note that when records are not identified and subsequently not archived as required, the organisation may not be able to demonstrate that the SCEP process outputs have been achieved. To highlight the risk associated with these anomalies, the following nonconformity was raised:

**CR114009:** *Records related to the Nuclear Commercial Safety Culture Enhancement Programme (SCEP) and the Management Review process for Nuclear Commercial, have either not been identified or appropriately indexed, as required.*

### 3.5 Nuclear Engineering (NE)

The Safety Culture Enhancement Programme for Nuclear Engineering (NE) was previously documented in 331-8 rev 0, however at the time of the audit it was noted that this NE SCEP procedure had been withdrawn on 2019-07-15. According to the withdrawal documentation, 331-8 would be superseded by the NOU level document, 238-28, *Nuclear Safety Management Programme*.

In order to assess compliance in this area, the following criteria were assessed:

- 238-28 Rev 3, *Nuclear Safety Management Programme*.
- 331-499 Rev 1, *Nuclear Engineering Safety Culture and Human Performance Committee Meeting Terms of Reference*.
- 331-243 Rev 2, *Nuclear Engineering Management Review*.

#### 3.5.1 Establishment and Maintenance of the NE SCEP (including the NSC Plan)

In this area, both the Safety Culture Enhancement procedure (331-499 Rev 1) and the available NSC plans were assessed to determine if they were valid and up to date. In addition, the configuration of

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these plans and related actions were also assessed by reviewing identified storage locations and available Devonway data, respectively.

3.5.1.1 It was noted that 331-499 Rev 1, *Nuclear Engineering Safety Culture and Human Performance Committee Meeting Terms of Reference* (ToR) authorised in May 2019, remains current. In reviewing the content of this ToR, the previously authorised procedure, 331-8 and the current 238-28, it was observed that the impact of withdrawing the Nuclear Engineering Safety Culture Enhancement procedure 331-8 Rev 0, while ensuring compliance to SCEP requirements, may not have been holistically assessed.

The inference that the withdrawal 331-8 Rev 0 may not have been holistically assessed to ensure compliance to SCEP requirements is based on the following anomalies:

- Records are not stipulated in the term of reference documented in 331-499 Rev 1. Previously 331-8 Rev 0 required that the safety culture enhancement plan for each year and all safety culture assessment results be kept as permanent records. Since the *Nuclear Engineering Safety Culture Enhancement procedure* is no longer applicable, these items are no longer being managed as records.
- It was also noted that the prescription of the *NOU Nuclear Safety Management Programme*, 238-28 Rev 3, has not documented in sufficient detail, the requirements assigned at the level of functional area to ensure consistent implementation and compliance to Safety Culture Enhancement Programme (SCEP) requirements, when compared to revision 2 and revision 1 of the same document. The details of these limitations have been discussed in section 3.1 of this report.

It was stated by the Engineering Process Support Manager and Senior Advisor that 331-8 Rev 0 was withdrawn due to a NEXCO decision, however it remains the responsibility of the manager assigned the particular functional responsibility to assess the impact of withdrawing procedures assigned to their area.

In light of the anomalies noted in the current revision of 238-28, the *NOU Nuclear Safety Management Programme*, withdrawing 331-8 Rev 0, *The Nuclear Engineering Safety Culture Enhancement* and replacing it with 331-499 Rev 1, *Nuclear Engineering Safety Culture and Human Performance Committee Meeting Terms of Reference* may have potentially diminished the process controls required for implementing the NE SCEP in the future. To highlight this anomaly, the following observation has been raised:

**AU 39424-017 QA:** *The impact of withdrawing the Nuclear Engineering Safety Culture Enhancement procedure 331-8 Rev 0, while ensuring compliance to SCEP requirements, may not have been holistically assessed.*

3.5.1.2 In assessing the validity and currency of the NSC plans, it was stated by the NE Senior Advisor (Engineering Process Support) that the established safety culture plan is aligned with Eskom's financial year. This was confirmed by reviewing safety culture plans for the period, FY2018 to FY2020. The plans were retrievable from Sharepoint.

One version of a plan was provided for each financial year for the period 2018 to 2020. Although a status column had been added to each of these plans and comments have been captured, there was no further indication that updates to these plans have been controlled. This was based on the absence of revisions or versions being captured on the plans provided. As a result, it is difficult to demonstrate that the plan has been updated periodically since multiple revisions for each plan were not available. It was confirmed by the NE Senior Advisor (Engineering Process Support) that neither revision nor version control methods were applied as a matter of practice. In addition, when reviewing the plans provided, there was also no indication when plans were initiated and subsequently updated as plans and amendments to status updates have not been dated.

In the reviewing the plans provided, it was noted that these plans indicated the name of the compiler and noted that these plans were reviewed by the NSC HP Committee. However, none of these plans have been signed by these respective parties, thereby failing to provide auditable evidence that these actions were completed by the assigned role players. It was confirmed by the NE Senior Advisor (Engineering Process Support) that signatures were typically not recorded.

Based on the lack of revision control and validation by respective parties being recorded when making amendments to these plans, it is uncertain whether overall process compliance has been achieved and

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whether the necessary configuration of the plan has been maintained. To highlight these anomalies, the following observation has been raised:

**AU 39424-018 QA:** *It is uncertain how often the NE Safety culture plans for the period 2017 to 2019 have been updated since no revision/version control has been applied for NE SC and HP plan*

### 3.5.2 Control of the NE Safety Culture Enhancement programme (via Committees)

The control of the NE Safety Enhancement programme via the Nuclear Engineering Safety Culture and Human Performance Committee as documented in 331-499 Rev 1, was assessed as follows:

- Frequency of executed meetings;
- Quorum of the meetings;
- Execution of documented mandates.

#### 3.5.2.1 Relating to the frequency of executed meetings, according to in 331-499 Rev 1 paragraph 7.1.1, it is required that the Nuclear Engineering Safety Culture and Human Performance Committee meetings be held on a quarterly basis and that it functions as the single oversight committee for NE SC and HP plan.

It was observed that the 2019-2020 NE SC and HP plan only recorded the completion of two of the four scheduled committee meetings for the period, April 2019 to March 2020. These meetings were held on 2019-05-02 and 2020-02-18.

When the prescribed amount of Nuclear Engineering Safety Culture and Human Performance Committee meetings are not held, the desired enhancement of Nuclear Engineering Safety Culture Programme among other mandated responsibilities, may not be achieved. To highlight this anomaly, the following nonconformity has been raised:

**CR114012:** *Not all the Nuclear Engineering Safety Culture and Human Performance Committee quarterly meetings have been held for the period, April 2019 to March 2020, as required.*

#### 3.5.2.2 According to 331-499 Rev 1 paragraph 7.2.1, notes the quorum of these meetings, as follows: the chairperson, four principal members and four ordinary members. It is also stated in paragraph 7.2.3 that the chairperson shall be rotated amongst the Heads of Departments.

Based on the general attendance register provided for these two meetings, it was confirmed that the quorum had been met.

#### 3.5.2.3 Paragraph 5.1 of 331-499 Rev 1 notes the role and function of the Nuclear Engineering Safety Culture and Human Performance Committee. The following sample of these functions were assessed during the audit:

- Contributing to the compilation of the Nuclear Safety Culture Plan (SCP) and Procedure for Nuclear Engineering.
- Identifying opportunities to improve Nuclear Safety Culture and Human Performance within Nuclear Engineering.
- Providing guidance in the compilation of the NE Safety Culture Plan (SCP).
- Providing guidance to NE in implementing the SCEP to comply with 238-28.
- Identifying and providing assistance needed to meet committed plans
- Identifying threats and risks to the plan and to the achievement of planned results.

In order to assess whether the sample of selected responsibilities have been met, the auditor attempted to retrieve and review the meeting action lists which are to be compiled by the secretariat and reviewed and endorsed by the NE Safety culture and HP Chairperson. The retrieval of these action lists were not possible as the current the practice only results in the update of the status column of the NSC plan and not in a separate action list being produced. Based on the lack of a detailed action list, it is uncertain whether all the stated functions of the committee have been met.

### 3.5.3 Roles and Responsibilities related to the control of the NE Safety Culture Enhancement Programme

The two key functions tested in this area were as follows: the role of the Senior Manager and the appointed Safety Culture and Human Performance Practitioner.

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As previously mentioned in section 3.5.1.1 of this report, the withdrawal of 331-8 Rev 0, *The Nuclear Engineering Safety Culture Enhancement* may have diminished the process controls required for implementing the NE SCEP. Examples of this diminished control may include the documented responsibilities assigned to NE General Manager, previously documented in 331-8 Rev 0, paragraph 5.2, but not included in 331-499 Rev 1.

3.5.3.1 Besides the responsibilities documented in 238-28 Rev 3 for the CNO's direct reports, there is no documented responsibilities assigned to NE General Manager in 331-499 Rev 1. As a result, a sample of responsibilities of the NE Safety Culture and HP Committee Chairperson, was tested which included the following:

- Chair the NE Safety Culture and HP Committee.
- Validate NE Safety Culture and HP Committee actions are true representation of what was discussed or assigned in the meeting.

Based on the general attendance register provided for the two meetings held since May 2019, it was not possible to determine who had chaired these meetings. In addition, the current practice which does not result in a separate action list being produced has resulted in there being no evidence that the NE Safety culture and HP Chairperson has reviewed and endorsed the action lists as required by 331-499 Rev 1, paragraph 5.3.1.

3.5.3.2 No anomalies were noted in the execution of the duties of the Nuclear Safety Culture and Human Performance Coordinator, except for to the anomaly discussed in section 3.5.3.1, of the report, where it was noted that the secretariat, who is required to compile and distribute actions that stemmed from the meeting after they have been reviewed and endorsed by the NE Safety culture and HP Chairperson, did not execute this process step as required.

When action lists are not endorsed and validated by the NE Safety Culture and HP chairperson, it cannot be assured that the actions stemming from these meetings are a true representation of what was discussed. To highlight this anomaly, the follow nonconformity has been raised;

**CR114013:** *There is no evidence that the NE Safety culture and HP Chairperson has endorsed the action lists stemming from the Safety Culture and Human Performance Committee meetings for the period April 2019 to March 2020*

#### 3.5.4 Monitoring of the NSC Health (SCEP and BA safety culture plan)

In this area it is evident that the withdrawal of 331-8 Rev 0 may have negatively impacted the monitoring of the NSC health as part of the continual implementation of the SCEP. Besides 238-28 Rev 3, the Nuclear Engineering Safety Culture and Human Performance Committee Meeting ToR (331-499) is the only controlled document that deals with the NE SCEP implementation. This controlled document does not prescribe or define the specific key performance indicators which are monitored on an ongoing process within NE and tabled during the Management Review Committee meetings.

It was also previously highlighted that the limited prescription in 238-28 regarding KPIs, coupled with the delay in implementing the NEXCO endorsed KPIs, has seen the undue delay in a collective NOU NSC health measure. This area for improvement has been previously discussed in section 3.1 and noted across all BA monitoring sub-sections of this report (refer to AU 39424-002 QA).

#### 3.5.5 Feedback and Continual Improvement which support enhancement of the NE SCEP

Similarly to the previous section, the area of feedback and continual improvement has not been documented in the Nuclear Engineering Safety Culture and Human Performance Committee Meeting ToR (331-499), which increases the risk of not implementing the required processes that support NSC continual improvement. Although there is evidence that these processes, such as the self-assessment and operating experience process are being applied, there is risk that these processes may not focus of NSC.

One element of continual improvement documented in 331-499 Rev 1 paragraph 8.1, has been noted. This element refers to the annual self-evaluation that is to be executed in order to evaluate the performance and effectiveness of the Safety Culture and Human Performance Committee at least once a year.

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Since the NSC plans are implemented across a financial year (March to April), the 2019-2020 NSC plan was reviewed to determine if the self-evaluation had been entered on the plan for identification and tracking purposes. There was no evidence of such an entry on the plan. Furthermore, at the time of concluding the audit, approximately eleven days of the current financial year still remained. Based on this time constraint, the following observation has been raised to highlight the potential risk of not completing the required self-evaluation before the end of the financial year:

**AU 39424-019 QA:** *There is potential risk that the Nuclear Engineering Safety Culture and Human Performance Committee may not meet the due date of end of March for completing the self-evaluation whereby its performance and effectiveness for the period April 2019 to March 2020 will be assessed.*

### 3.5.6 NE Records Management

Records generated as part of the NE Safety Culture Enhancement Programme, which is required to ensure that compliance can be demonstrated in the future, was assessed.

3.5.6.1 In reviewing 331-499 Rev 1, the following anomalies were observed:

- 331-499 Rev 1, *Nuclear Engineering Safety Culture and Human Performance Committee Meeting ToR* (authorised 2019-05-02) does not specify any records to be retained. Paragraph 7.5.2 states: *'No minutes will be taken, but an action list will be maintained as when and required'*.
- Action lists are not identified on the current Nuclear Engineering/ Engineering Support Record retention matrix (2020-03-02).
- The current Nuclear Engineering/ Engineering Support Record retention matrix (2020-03-02) does not specify any records as part of the NE SCEP process.

238-8 Rev 4, *Nuclear Safety and Quality Manual*, paragraph 3.1.2 requires that process owners identify records that demonstrate that process results have been achieved. These records are to be specified in the process documentation.

It was determined after reviewing the previous revision of the NE record retention matrix (2019-11-19) that SCEP records had not been indexed. It was also noted that at the time when 331-8 rev 0 was applicable (withdrawn on 2019-07-15), that the safety culture enhancement plan and all safety culture assessment results were required to be kept as permanent records. In reviewing the QRL applicable at that time (dated 2016-06-30), only an entry for the safety culture steering committee was included. Therefore these permanent SCEP records which were identified at the time of 331-8 rev 0 applicability, were not archived.

3.5.6.2 In assessing the oversight exercised by management over the BA SCEPs, minutes of management review meetings (MRM) were reviewed to determine if NSC elements were included along with noted agenda items documented in 238-128 Rev 3 *Management Review Standard (Appendix A, Typical Management Review Meeting Inputs)*.

A sample of MRM minutes for the period 2017 to 2019 were reviewed in order to determine whether the NSC element had been included as a typical meeting input. The minutes of the following meetings were reviewed: 21 November 2017, 30 August 2018 and 29 August 2019. In reviewing these meeting minutes, it was noted that feedback items included: the monitoring of the NSC plan; status of the SCEP procedure and the status the Nuclear Engineering Safety Culture and Human Performance Committee meetings.

In addition, the following anomalies were noted:

- The current Nuclear Engineering/ Engineering Support Record retention matrix (2020-03-02) does not specify the retention period for Management review meeting minutes while the previous record retention matrix (2019-11-19) noted these records to be retained for six months in-section and a total of 40 years at TD&RM.
- There is no evidence that Management review meeting minutes have been archived KIS location MC 1.4.2 and similarly the Management Committee meeting minutes have not been archived in KIS location MC 1.4.12.

When records are not identified and subsequently not archived as required, it may be difficult for the organisation to demonstrate that process outputs have been achieved. To highlight these anomalies, the following nonconformity has been raised:

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**CR114011:** *Records required to demonstrate that the Nuclear Engineering Safety Culture Enhancement Programme (SCEP) has been implemented or reviewed, has either not been identified, appropriately indexed or archived as required.*

### 3.6 Effectiveness Review of Previously Raised QA Nonconformities

During the effectiveness review, CR 95398 was reviewed despite the Devonway status of *Waiting Action Completion*. It was noted that all corrective actions had been closed, with the exception of the effectiveness review action.

In reviewing the original nonconformity identified in 2016, an evaluation was completed to determine if the objective evidence related to CR 95398, and listed below, were resolved:

- Annual self-assessments of NSC has not been implemented consistently across the KOU (Nuclear Commercial; Nuclear Project Management, Nuclear Engineering and Nuclear Support). **Based on the evidence gathered during this audit, this condition remains unresolved. Refer to AU 39424-003 QA.**
- KPIs related to NSC have not been defined or implemented consistently across the KOU to gauge the strength of NSC (Nuclear Engineering, Nuclear Commercial).. **Although each BA has defined KPIs, the collective measurement has not been rolled out across the NOU. Refer to AU 39424-002 QA.**
- An annual Safety Culture Council meeting at KOU level which includes all Functional Areas (FAs) has not taken place for 2015 / 2016. **Based on the lack of evidence noted in this area during this audit, an assurance statement can not be provided. Refer to AU 39424-004 QA.**

Based on the evidence noted above, the corrective actions have not addressed the nonconformity previously raised. Therefore the nonconformity is deemed to be ineffectively addressed.

In addition the majority of the observations previously identified during QA activities remain open resulting in these observations remaining unresolved and requiring attention.

All items reviewed as part of the effectiveness review have been tabulated in Appendix 4.5.18.

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## Audit Administration

### 4.1 Personnel interviewed during the audit process

| Name           | Department/ Function            | Interviewed | Meeting attended |         |
|----------------|---------------------------------|-------------|------------------|---------|
|                |                                 |             | Opening          | Closing |
| R Bakardien    | CNO                             | Yes         | No               | Yes     |
| T Jappie       | NPM Senior Manager              | No          | Yes              | Yes     |
| A Stephanus    | ISED Manager                    | Yes         | Yes              | No      |
| C Bester       | ISED                            | Yes         | Yes              | Yes     |
| K Bethel       | ISED                            | Yes         | Yes              | No      |
| M Tshivhilinge | ISED                            | Yes         | Yes              | No      |
| R Lavelot      | NPM                             | Yes         | No               | No      |
| J Ludick       | NPM                             | Yes         | No               | No      |
| B Culligan     | NC Senior Manager               | Yes         | No               | No      |
| H Hall         | Nuclear Commercial              | Yes         | No               | No      |
| N Gumede       | Nuclear Engineering             | Yes         | No               | No      |
| L Lukwe        | Nuclear Engineering             | Yes         | No               | No      |
| A Mangwana     | ISED                            | Yes         | Yes              | No      |
| K Kets         | ISED                            | Yes         | Yes              | No      |
| V Moduka       | Nuclear Strategy and Regulation | No          | No               | Yes     |
| C Robinson     | NSA                             | No          | No               | Yes     |

### 4.2 Administrative Information

|                                |                          |
|--------------------------------|--------------------------|
| Audit Team Leader:             | R Simons                 |
| Audit Team Member(s):          | Z Sekoko                 |
| Subject Matter Expert(s) (SME) | Not applicable           |
| Observer(s)                    | Not applicable           |
| Location                       | Koeberg Power Station    |
| Organisation/Unit              | NOU                      |
| Audit Dates                    | 2020-03-02 to 2020-03-20 |

### 4.3 Disclaimer

Please note that where no Nonconformities, Observations or Recommendations were raised it does not imply that none exist, since the audit was based on the objective evidence presented.

### 4.4 Acknowledgement

The audit team would like to express their gratitude to the auditee representatives and management for their co-operation during the course of the audit.

### 4.5 Attachments

#### 4.5.1 Nonconformity and Monitoring Activity Rating according to KAQ-021 Rev 4

4.5.2 Non conformity CR113998

4.5.3 Non conformity CR113999

4.5.4 Non conformity CR114001

4.5.5 Non conformity CR114002

4.5.6 Non conformity CR114003

4.5.7 Non conformity CR114004

4.5.8 Non conformity CR114005

4.5.9 Non conformity CR114006

4.5.10 Non conformity CR114007

4.5.11 Non conformity CR114008

4.5.12 Non conformity CR114009

4.5.13 Non conformity CR114010

4.5.14 Non conformity CR114011

4.5.15 Non conformity CR114012

4.5.16 Non conformity CR114013

4.5.17 Detailed Observations

4.5.18 Detailed Effectiveness Review

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#### 4.5.1 Nonconformity and Monitoring Activity Rating according to KAQ-021 Rev 4


| Overall rating | Overall Severity Rating Description                                    |
|----------------|--|
| 4              | Nonconformity has a significant impact on process objectives being met |
| 3              | Nonconformity has a material impact on process objectives being met    |
| 2              | Nonconformity has an immaterial impact on process objectives being met |
| 1              | Nonconformity has a negligible impact on process objectives being met  |

|            | Description of Category   |
|------------|---|
| Not Met    | Collectively the audit findings identified, relative to the scope to the audit, have a significant impact on the ability of the process to achieve its intended objective and have or may impact related business objectives.               |
| Partly Met | Collectively the audit findings identified, relative to the scope to the audit, have a material impact on the ability of the process to consistently achieve its intended objective and may potentially impact related business objectives. |
| Mostly Met | Collectively the audit findings identified, relative to the scope to the audit, have an immaterial impact on the ability of the process to achieve its intended objective and may not impact related business objectives.                   |
| Met        | Collectively the audit findings identified have a negligible impact on both the ability of the process to achieve its intended objective and related business objectives.   |

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#### 4.5.2 Non conformity CR113998

|   |                         |                                    |                                  |                       |                         |                  |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
|---|-------------------------|------------------------------------|----------------------------------|-----------------------|-------------------------|------------------|---|---|-----|---|--|--|--|--|--|--|--|--|--|--|--|--|
|    |                         | Quality Assurance<br>Nonconformity |                                  | Template Identifier   | 240-43921804            | Rev              | 6 |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
|   |                         |                                    |                                  | Document Identifier   | 240-126198945           | Rev              | 2 |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
|   |                         |                                    |                                  | Effective Date        | June 2019               |                  |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
|   |                         |                                    |                                  | Review Date           | July 2022               |                  |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
| Monitoring Activity Title   |                         | Date                               |                                  | Location              |                         |                  |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
| Nuclear Safety Culture  |                         | 2020-03-20                         |                                  | Koeberg Power Station |                         |                  |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
| Monitoring activity number  | Nonconformity CR number | Criteria                           |                                  | Organisation          |                         |                  |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
| A104  | CR 113998               | 238-6 Rev 4                        |                                  | KNPS                  |                         |                  |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Nonconformity Description:</b>   |                         |                                    |                                  |                       |                         |                  |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
| Certain Koeberg Nuclear Power Station Procedures, required for implementing the Nuclear Safety Culture Enhancement and Human Performance Programmes, have passed their next review dates  |                         |                                    |                                  |                       |                         |                  |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Criteria Description:</b>  |                         |                                    |                                  |                       |                         |                  |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
| 238-6 Rev 4, <i>Nuclear Document and Records Management Requirement</i> , paragraph 3.2, Documentation structure states the following:  |                         |                                    |                                  |                       |                         |                  |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
| <ul style="list-style-type: none"> <li>All documents classified as level 2 and 3 shall have a review period of three years</li> <li>Documents at level 4 and 5 shall have a review cycle of up to a maximum of five years.</li> </ul>   |                         |                                    |                                  |                       |                         |                  |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Objective Evidence:</b>  |                         |                                    |                                  |                       |                         |                  |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
| <ol style="list-style-type: none"> <li>KAA-850 Rev 0, <i>Koeberg Nuclear Power Station Safety Culture Enhancement Programme</i>, authorised 2013/12/24, has passed its next review date of 2016/12/24. (level 3)</li> <li>KGA-097 Rev 5, <i>Station Event-Free Clock Program</i>, authorised 2013/12/24, has passed its next review date of 2019/06/02. (level 4)</li> <li>KGA-053 Rev 4, <i>Self-Assessment at Koeberg Nuclear Power Station</i>, authorised 2012/01/26, has passed its next review date of 2018/01/26. (level 4)</li> <li>238-129 Rev 0, <i>Nuclear Operating Unit Self Assessments</i>, authorised 2012/03/20, has passed its next review date of 2014/11. 238-129 Rev 0 is noted as a level 2 document</li> <li>It has been noted that the following procedure has passed its next review date, however a corrective action, has been registered in Devonway: KGA-078, Rev 3a. <i>Performing Trending &amp; Trending Analysis</i>, authorised 2013/09/18, has passed its next review date of 2016/06/27 (level 4) - See CR98837-001CA.</li> </ol> |                         |                                    |                                  |                       |                         |                  |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Justification: (Justification for rating of NC)</b>  |                         |                                    |                                  |                       |                         |                  |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
| When controlled documents are not reviewed timeously, there is a risk of process noncompliance, as practices may have evolved from authorised processes.  |                         |                                    |                                  |                       |                         |                  |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
| Recurring Nonconformity   | Y                       |                                    | N                                | X                     | Overall Severity Rating | 4                | 3 | 2 | 1,3 | 1 |  |  |  |  |  |  |  |  |  |  |  |  |
| Originator:   | R Simons                |                                    |                                  | Team Leader:          | R Simons                |                  |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
| Discussed with:   | A Stephanus             |                                    |                                  | Response required by: | 2020-04-14              |                  |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
| <b>Nonconformity Acknowledgement</b>  |                         |                                    |                                  |                       |                         |                  |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
| <ol style="list-style-type: none"> <li>The Auditee acknowledges the validity of the objective evidence documented above</li> <li>The Auditee to please furnish QA within 25 days of issue of this nonconformity with a proposed corrective action plan using an assessment report as per KGA-094</li> <li>In addition, action taken to prevent recurrence of the nonconformity must be identified during the assessment.</li> </ol>   |                         |                                    |                                  |                       |                         |                  |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
| Auditee Signature:  |                         |                                    | Title: ISED MANAGER              |                       |                         | Date: 2020-03-23 |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
| Reportable Nonconformity Confirmation   |                         |                                    |                                  |                       |                         |                  |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
| The non-conformity is reportable in terms of the agreed license grading system: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |                         |                                    |                                  |                       |                         |                  |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |
| Licensing Signature:  |                         |                                    | Title: Senior Licensing Engineer |                       |                         | Date: 2020-03-04 |   |   |     |   |  |  |  |  |  |  |  |  |  |  |  |  |

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| Title: Nuclear Safety Culture | Number   | A104/AU 39424 |
|                               | Revision | 0             |
| Controlled Disclosure         | Page     | 45 of 68      |

#### 4.5.3 Nonconformity CR 113999

|   |  |                     |               |     |   |
|---|--|---------------------|---------------|-----|---|
|  | <b>Quality Assurance<br/>Nonconformity</b> | Template Identifier | 240-43921804  | Rev | 6 |
|   |  | Document Identifier | 240-126198946 | Rev | 2 |
|   |  | Effective Date      | June 2019     |     |   |
|   |  | Review Date         | July 2022     |     |   |

|                                   |                                |                 |                       |
|-----------------------------------|--------------------------------|-----------------|-----------------------|
| <b>Monitoring Activity Title</b>  |                                | <b>Date</b>     | <b>Location</b>       |
| Nuclear Safety Culture            |                                | 2020-03-20      | Koeberg Power Station |
| <b>Monitoring activity number</b> | <b>Nonconformity CR number</b> | <b>Criteria</b> | <b>Organisation</b>   |
| A104                              | CR 113999                      | 238-6 Rev 4     | KNPS                  |

**Nonconformity Description:**

Records related to the Koeberg Nuclear Power Station Safety Culture Enhancement Programme and the Management Review process for Koeberg Nuclear Power Station, have not been indexed on an authorised Quality Record List (QRL) or a Record Retention matrix and subsequently have not been archived

**Criteria Description:**

335-2 Rev 6, Koeberg Power Station Management Manual paragraph 9.3 requires that records of management reviews be kept.

238-6 Rev 4, Nuclear Document and Records Management Requirement requires the following:

- Paragraph 5.1 specifies that records shall be managed through indexing on a Records Retention Matrix (240-43723778). Furthermore, maintaining the Records Retention Matrix on a continual basis and reviewing at prescribed intervals is required
- Paragraph 6.4 requires that in instances where business areas store their own records, they shall request a waiver from TD&RM.

**Objective Evidence:**

- The following permanent records, identified in KAA-850 Rev 0 paragraph 7.1 to 7.3, have not been indexed on the authorised QRL dated 2015/12/14, for the Nuclear Safety Enhancement Group (NSEG) and therefore records were not archived since the authorisation of KAA-850 Rev 0:
  - The Safety Culture Survey results, identified as permanent records have not been archived as required.
  - The Annual Safety Culture report identified as a permanent record have not been archived as required.
  - Safety Culture plans
- The above reports and plans were retrievable from various ISED individuals but were not managed as 'in-section' records. It has been confirmed by TD&RM that no waiver request for 'in-department/section' storage has been received from NSEG.
- The latest authorised QRL for NSEG was last reviewed in 2016/12/14.
- There is no evidence that the KNPS Management Review meeting minutes have been indexed on an authorised Quality Record Listing (QRL) and as a result no KIS location has been noted for this record.
- There is no evidence that the KNPS Management Review meeting minutes have been transmitted to TD&RM.
- It has been confirmed by TD&RM that no waiver request for in-section storage has been received from the Independent Safety Evaluation Department (ISED).

**Justification: (Justification for rating of NC)**

When records are not indexed and subsequently archived as required, the necessary protection and retrievability of these records may be compromised.

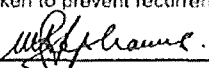
|                                |   |   |   |                                |   |   |     |   |   |
|--------------------------------|---|---|---|--------------------------------|---|---|-----|---|---|
| <b>Recurring Nonconformity</b> | Y | N | X | <b>Overall Severity Rating</b> | 4 | 3 | 3,2 | 2 | 1 |
|--------------------------------|---|---|---|--------------------------------|---|---|-----|---|---|

Originator: R Simons      Team Leader: R Simons

Discussed with: A Stephanus      Response required by: 2020-04-14


**Nonconformity Acknowledgement**

- The Auditee acknowledges the validity of the objective evidence documented above.
- The Auditee to please furnish QA within 25 days of issue of this nonconformity with a proposed corrective action plan using an assessment report as per KGA-094.
- In addition, action taken to prevent recurrence of the nonconformity must be identified during the assessment.

Auditee Signature:       Title: ISED MANAGER      Date: 2020-03-23

**Reportable Nonconformity Confirmation**


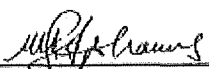

The nonconformity is reportable in terms of the agreed license grading system: Yes ☐ No ☒

Licensing Signature:       Title: Senior Licensing Engineer      Date: 2020-04-03

Controlled Disclosure

|                               |          |               |
|-------------------------------|----------|---------------|
| Title: Nuclear Safety Culture | Number   | A104/AU 39424 |
|                               | Revision | 0             |
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#### 4.5.4 Nonconformity CR 114001

|   |                                |  |   |                                  |                                |                  |         |  |  |  |  |  |  |  |  |
|---|--------------------------------|--|---|----------------------------------|--------------------------------|------------------|---------|--|--|--|--|--|--|--|--|
|    |                                | <b>Quality Assurance<br/>Nonconformity</b> |   | Template Identifier              | 240-43921804                   | Rev              | 6       |  |  |  |  |  |  |  |  |
|   |                                |  |   | Document Identifier              | 240-126198945                  | Rev              | 2       |  |  |  |  |  |  |  |  |
|   |                                |  |   | Effective Date                   | June 2019                      |                  |         |  |  |  |  |  |  |  |  |
|   |                                |  |   | Review Date                      | July 2022                      |                  |         |  |  |  |  |  |  |  |  |
| <b>Monitoring Activity Title</b>  |                                | <b>Date</b>                                |   | <b>Location</b>                  |                                |                  |         |  |  |  |  |  |  |  |  |
| Nuclear Safety Culture  |                                | 2020-03-20                                 |   | Koeberg Power Station            |                                |                  |         |  |  |  |  |  |  |  |  |
| <b>Monitoring activity number</b>   | <b>Nonconformity CR number</b> | <b>Criteria</b>                            |   | <b>Organisation</b>              |                                |                  |         |  |  |  |  |  |  |  |  |
| A104  | CR 114-001                     | KAA-850-Rev 0                              |   | KNPS                             |                                |                  |         |  |  |  |  |  |  |  |  |
| <b>Nonconformity Description:</b>   |                                |  |   |                                  |                                |                  |         |  |  |  |  |  |  |  |  |
| There is no evidence that the <i>Safety Culture Steering Committee (SCSC)</i> meetings have been held as required   |                                |  |   |                                  |                                |                  |         |  |  |  |  |  |  |  |  |
| <b>Criteria Description:</b>  |                                |  |   |                                  |                                |                  |         |  |  |  |  |  |  |  |  |
| KAA-850 Rev 0, <i>Koeberg Nuclear Power Station Safety Culture Enhancement Programme</i> , requires the following as it relates to the <i>Safety Culture Steering Committee</i> :   |                                |  |   |                                  |                                |                  |         |  |  |  |  |  |  |  |  |
| <ul style="list-style-type: none"> <li>Paragraphs 5.9.1 and 5.1.2 requires that the <i>Safety Culture Steering Committee (SCSC)</i> meets monthly to discuss the status of the <i>Safety Culture Plan</i> activities according to the agreed plan</li> </ul>  |                                |  |   |                                  |                                |                  |         |  |  |  |  |  |  |  |  |
| <b>Objective Evidence:</b>  |                                |  |   |                                  |                                |                  |         |  |  |  |  |  |  |  |  |
| 1. The monthly <i>Safety Culture Steering Committee</i> meetings were not held since September 2018. Only two unsigned action lists titled, <i>Nuclear Safety Culture Plan</i> meeting, were available as evidence of the <i>Safety Culture Steering Committee</i> activities. These action lists were for meetings convened on the following dates: 16 April 2018 and 10 September 2018. |                                |  |   |                                  |                                |                  |         |  |  |  |  |  |  |  |  |
| <b>Justification: (Justification for rating of NC)</b>  |                                |  |   |                                  |                                |                  |         |  |  |  |  |  |  |  |  |
| When the defined <i>Safety Culture Steering Committee</i> meetings are not held, the required monitoring and oversight of safety culture plan actions may not be achieved.  |                                |  |   |                                  |                                |                  |         |  |  |  |  |  |  |  |  |
| <b>Recurring Nonconformity</b>  | Y                              |  | N | X                                | <b>Overall Severity Rating</b> | 4                | 3, 2, 1 |  |  |  |  |  |  |  |  |
| Originator: R Simons  |                                |  |   | Team Leader: R Simons            |                                |                  |         |  |  |  |  |  |  |  |  |
| Discussed with: A Stephanus   |                                |  |   | Response required by: 2020-04-14 |                                |                  |         |  |  |  |  |  |  |  |  |
| <b>Nonconformity Acknowledgement</b>  |                                |  |   |                                  |                                |                  |         |  |  |  |  |  |  |  |  |
| 1. The Auditee acknowledges the validity of the objective evidence documented above.<br>2. The Auditee to please furnish QA within 25 days of issue of this nonconformity with a proposed corrective action plan using an assessment report as per KGA-084.<br>3. In addition, action taken to prevent recurrence of the nonconformity must be identified during the assessment           |                                |  |   |                                  |                                |                  |         |  |  |  |  |  |  |  |  |
| Auditee Signature:   |                                |  |   | Title: KED MANAGER               |                                | Date: 2020-03-23 |         |  |  |  |  |  |  |  |  |
| <b>Reportable Nonconformity Confirmation</b>  |                                |  |   |                                  |                                |                  |         |  |  |  |  |  |  |  |  |
| The nonconformity is reportable in terms of the agreed license grading system: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                                |  |   |                                  |                                |                  |         |  |  |  |  |  |  |  |  |
| Licensing Signature:   |                                |  |   | Title: Senior Licensing Engineer |                                | Date: 2020-04-03 |         |  |  |  |  |  |  |  |  |

Controlled Disclosure

|                               |          |               |
|-------------------------------|----------|---------------|
| Title: Nuclear Safety Culture | Number   | A104/AU 39424 |
|                               | Revision | 0             |
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#### 4.5.5 Nonconformity CR 114002


|  |                                    |               |   |                       |                                |                       |  |   |                           |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
|--|------------------------------------|---------------|---|-----------------------|--------------------------------|-----------------------|--|---|---------------------------|---|--|-------|-----|------------|--|--|--|--|--|--|--|--|--|--|
|   | Quality Assurance<br>Nonconformity |               | Template Identifier   | 240-43921804          | Rev                            | 6                     |  |   |                           |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
|  |                                    |               | Document Identifier   | 240-126168945         | Rev                            | 2                     |  |   |                           |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
|  |                                    |               | Effective Date  | June 2019             |                                |                       |  |   |                           |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
|  |                                    |               | Review Date   | July 2022             |                                |                       |  |   |                           |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
| Monitoring Activity Title  |                                    | Date          |   | Location              |                                |                       |  |   |                           |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
| Nuclear Safety Culture   |                                    | 2020-03-20    |   | Koeberg Power Station |                                |                       |  |   |                           |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
| Monitoring activity number   | Nonconformity CR number            | Criteria      |   | Organisation          |                                |                       |  |   |                           |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
| A104   | CR 114002                          | KGA-097 Rev 5 |   | KNPS                  |                                |                       |  |   |                           |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
| <b>Nonconformity Description:</b>  |                                    |               |   |                       |                                |                       |  |   |                           |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
| The minimum number of <i>Nuclear Safety Enhancement Committee</i> (NSEC) meetings (also known as HPOC) was not held during the period 2017 to 2019.  |                                    |               |   |                       |                                |                       |  |   |                           |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
| <b>Criteria Description:</b>   |                                    |               |   |                       |                                |                       |  |   |                           |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
| KGA-097 Rev 5, <i>Station Event-Free Clock Program</i> , paragraph 5.2.4 states: 'The <i>Nuclear Safety Enhancement Committee</i> meeting will be held monthly with a minimum of 10 meetings per year.'  |                                    |               |   |                       |                                |                       |  |   |                           |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
| <b>Objective Evidence:</b>   |                                    |               |   |                       |                                |                       |  |   |                           |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
| 1. The minimum of ten meetings per annum for the <i>Nuclear Safety Enhancement Committee</i> (also known as HPOC) were not held. Only the following meetings minutes were available for meetings held during the period 2017 to 2020: <ul style="list-style-type: none"> <li>• 2017 - Five meetings held</li> <li>• 2018 - Six meetings held</li> <li>• 2019 - Four meetings held</li> <li>• 2020 - One meeting held during January</li> </ul> |                                    |               |   |                       |                                |                       |  |   |                           |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
| <b>Justification: (Justification for rating of NC)</b>   |                                    |               |   |                       |                                |                       |  |   |                           |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
| When the minimum <i>Nuclear Safety Enhancement Committee</i> (NSEC) meetings are not held, opportunities to identify improvement strategies to enhance human performance issues may not occur.   |                                    |               |   |                       |                                |                       |  |   |                           |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
| <b>Recurring Nonconformity</b>   | Y                                  |               | N   | X                     | <b>Overall Severity Rating</b> | 4                     |  | 3 |                           | 2 |  | 1     | 1,2 |            |  |  |  |  |  |  |  |  |  |  |
| Originator:  |                                    |               | R Simons  |                       |                                | Team Leader:          |  |   | R Simons                  |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
| Discussed with:  |                                    |               | A Stephanus   |                       |                                | Response required by: |  |   | 2020-04-14                |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
| <b>Nonconformity Acknowledgement</b>   |                                    |               |   |                       |                                |                       |  |   |                           |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
| 1 The Auditee acknowledges the validity of the objective evidence documented above.<br>2 The Auditee to please furnish QA within 25 days of issue of this nonconformity with a proposed corrective action plan using an assessment report as per KGA-094.<br>3 In addition, action taken to prevent recurrence of the nonconformity must be identified during the assessment.  |                                    |               |   |                       |                                |                       |  |   |                           |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
| Auditee Signature:   |                                    |               |  |                       |                                | Title:                |  |   | ISED MANAGER              |   |  | Date: |     | 2020-05-23 |  |  |  |  |  |  |  |  |  |  |
| <b>Reportable Nonconformity Confirmation</b>   |                                    |               |   |                       |                                |                       |  |   |                           |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
| The nonconformity is reportable in terms of the agreed license grading system: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |                                    |               |   |                       |                                |                       |  |   |                           |   |  |       |     |            |  |  |  |  |  |  |  |  |  |  |
| Licensing Signature:   |                                    |               |  |                       |                                | Title:                |  |   | Senior Licensing Engineer |   |  | Date: |     | 2020-04-03 |  |  |  |  |  |  |  |  |  |  |

Controlled Disclosure

|                               |          |               |
|-------------------------------|----------|---------------|
| Title: Nuclear Safety Culture | Number   | A104/AU 39424 |
|                               | Revision | 0             |
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Controlled Disclosure

#### 4.5.6 Nonconformity CR 114003

|   |  |  |  |                     |               |     |   |
|---|--|--|--|---------------------|---------------|-----|---|
|  |  | <b>Quality Assurance<br/>Nonconformity</b> |  | Template Identifier | 240-43921804  | Rev | 6 |
|   |  |  |  | Document Identifier | 240-126198945 | Rev | 2 |
|   |  |  |  | Effective Date      | June 2019     |     |   |
|   |  |  |  | Review Date         | July 2022     |     |   |

|                                   |                                |                 |                       |
|-----------------------------------|--------------------------------|-----------------|-----------------------|
| <b>Monitoring Activity Title</b>  |                                | <b>Date</b>     | <b>Location</b>       |
| Nuclear Safety Culture            |                                | 2020-03-20      | Koeberg Power Station |
| <b>Monitoring activity number</b> | <b>Nonconformity CR number</b> | <b>Criteria</b> | <b>Organisation</b>   |
| A104                              | CR 114003                      | KAA-850 Rev 0   | KNPS                  |

**Nonconformity Description:**

The Koeberg Safety Culture Plan for 2019-2020 is not accessible from the specified location on the G:drive as required by KAA-850 Rev 0, Koeberg Nuclear Power Station Safety Culture Enhancement Programme.

**Criteria Description:**

KAA-850 Rev 0, Koeberg Nuclear Power Station Safety Culture Enhancement Programme, states in paragraphs 3.1.6 and 5.9.1 that the plan must be regularly reviewed and updated, kept current and available in the following location: G:\Koeberg\ISED\NSEG\NUCLEAR SAFETY\Nuclear Safety Enhancement Steering Committee.

**Objective Evidence:**

- The Koeberg Safety Culture Plan for 2019-2020 was not retrievable from the following location: G:\Koeberg\ISED\NSEG\NUCLEAR SAFETY\Nuclear Safety Enhancement Steering Committee. The following were the only items noted on the G:Drive location as specified in KAA-850 Rev 0:
  - 2016 folder contained one KNPS SC Plan
  - 2016 folder: was empty
  - 2017 folder contained two items: one audio recording file and a 2016/2017 SC plan
- The plans reviewed for the period 2017 to 2019 were not stored on the G:drive, but were retrieved from three different individuals.
  - Both the KNPS and NOU SCP 2018-2019, as well as the 2019/2020 KOU Safety plan dated 8 April 2019 were provided by the individual who previously acted in the position of the NOU Safety Culture Manager
  - The KNPS Nuclear Safety Culture Plan 2018-2019 rev 0a was provided by a NSEG individual and the ISED Manager.
  - A copy of the 2019-2020 Nuclear Safety Action Plan was provided by the ISED Manager.

**Justification: (Justification for rating of NC)**

When the latest Safety Culture Plan is not stored in the required location, ease of accessibility as well as revision control may be compromised

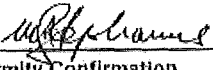
|                                |   |   |   |                                |   |   |   |   |     |
|--------------------------------|---|---|---|--------------------------------|---|---|---|---|-----|
| <b>Recurring Nonconformity</b> | Y | N | X | <b>Overall Severity Rating</b> | 4 | 3 | 2 | 1 | 1,2 |
|--------------------------------|---|---|---|--------------------------------|---|---|---|---|-----|

Originator: R Simons      Team Leader: R Simons

Discussed with: A Stephanus      Response required by: 2020-04-14

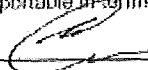
**Nonconformity Acknowledgement**

- The Auditee acknowledges the validity of the objective evidence documented above.
- The Auditee to please furnish QA within 25 days of issue of this nonconformity with a proposed corrective action plan using an assessment report as per KGA-094.
- In addition, action taken to prevent recurrence of the nonconformity must be identified during the assessment.

Auditee Signature:  Title: ISED MANAGER Date: 2020-03-23

**Reportable Nonconformity Confirmation**


The nonconformity is reportable in terms of the agreed license grading system: Yes ☐ No ☒



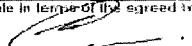
Licensing Signature:  Title: Senior Licensing Engineer Date: 2020-04-03

Controlled Disclosure

|                               |          |               |
|-------------------------------|----------|---------------|
| Title: Nuclear Safety Culture | Number   | A104/AU 39424 |
|                               | Revision | 0             |
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#### 4.5.7 Nonconformity CR 114004


|   |                                |  |  |                       |               |     |   |
|---|--------------------------------|--|--|-----------------------|---------------|-----|---|
|    |                                | <b>Quality Assurance Nonconformity</b> |  | Template Identifier   | 240-43921804  | Rev | 6 |
|   |                                |  |  | Document Identifier   | 240-126198845 | Rev | 2 |
|   |                                |  |  | Effective Date        | June 2019     |     |   |
|   |                                |  |  | Review Date           | July 2022     |     |   |
| <b>Monitoring Activity Title</b>  |                                | <b>Date</b>                            |  | <b>Location</b>       |               |     |   |
| Nuclear Safety Culture  |                                | 2020-03-20                             |  | Koeberg Power Station |               |     |   |
| <b>Monitoring activity number</b>   | <b>Nonconformity CR number</b> | <b>Criteria</b>                        |  | <b>Organisation</b>   |               |     |   |
| A104  | CR 114004                      | 238-B rev 4 and KSA-011 Rev 14         |  | KNPS                  |               |     |   |
| <b>Nonconformity Description:</b>   |                                |  |  |                       |               |     |   |
| The Nuclear Safety Enhancement Committee (NSEC) Terms of Reference and the HPOC Departmental Feedback form have not been managed as controlled documents.   |                                |  |  |                       |               |     |   |
| <b>Criteria Description:</b>  |                                |  |  |                       |               |     |   |
| 238-B Rev 4, Nuclear Document and Records Management Requirement, requires the following:   |                                |  |  |                       |               |     |   |
| <ul style="list-style-type: none"> <li>Paragraph 3. NOU documentation and records management requirements states: 'All approved documents shall be stored on an approved EDMS for control and retrievability.'</li> <li>Table 4. 'The document type codes used in the alternative identifier format,' lists both Forms (F) and Terms of references (Z) among other controlled documents.</li> </ul>   |                                |  |  |                       |               |     |   |
| KSA-011 Rev 14, The Requirements for Controlled Documents, requires the following:  |                                |  |  |                       |               |     |   |
| <ul style="list-style-type: none"> <li>Paragraph 5.1.3 states: 'Departments, groups, or sections are allowed to compile, review, authorise and change controlled documents of which they are the owners on condition that: <ul style="list-style-type: none"> <li>the process is implemented according to an authorised procedure.</li> <li>the electronic master is available and maintained on the EDMS.</li> <li>the paper master is stored and preserved with the document controlling body</li> </ul> </li> <li>Paragraph 5.1.1 states: 'All controlled documents shall be processed in accordance with document life cycle.'</li> </ul>   |                                |  |  |                       |               |     |   |
| <b>Objective Evidence:</b>  |                                |  |  |                       |               |     |   |
| <ol style="list-style-type: none"> <li>There was no evidence that Nuclear Safety Enhancement Committee (NSEC) Terms of Reference has been processed as a controlled document as follows: <ul style="list-style-type: none"> <li>There is no unique reference assigned.</li> <li>There is no evidence of the compiler, reviewer, and authoriser status.</li> <li>The electronic master is not available and maintained on the EDMS.</li> <li>The paper master is not stored and preserved with the document controlling body.</li> </ul> </li> <li>The following word revisions for the Nuclear Safety Enhancement Committee (NSEC) Terms of Reference were provided to the auditor during the preparation and execution phases of the audit: <ul style="list-style-type: none"> <li>Rev 3 dated 2017/07/20</li> <li>Rev 4 dated 2017/09/20.</li> </ul> In addition, a word version of the Nuclear Safety Enhancement Steering Committee Terms of Reference (Rev 2) was also provided.</li> <li>There was no evidence that the HPOC Departmental Feedback forms has been processed as a controlled document as follows: <ul style="list-style-type: none"> <li>There is no unique reference assigned</li> <li>The electronic master is not available and maintained on the EDMS.</li> <li>The paper master is not stored and preserved with the document controlling body.</li> </ul> </li> <li>Two different versions of the HPOC Departmental Feedback forms have been applied by various line groups for the period January 2019 to January 2020 as follows: <ul style="list-style-type: none"> <li>Revision 3 - Applied by Operating and the Outage Management groups</li> <li>Revision 2 - Applied by Chemistry, Nuclear Services, Maintenance Execution, Radiation Protection, Training and System Engineering (Group names as noted on the completed feedback forms)</li> </ul> A notable difference between revision 3 and revision 2 of this form is the addition of the field, <i>Human: Technical Ratio</i>.</li> </ol> |                                |  |  |                       |               |     |   |

|   |   |  |   |                         |                           |     |                  |
|---|---|--|---|-------------------------|---------------------------|-----|------------------|
|    |   | <b>Quality Assurance Nonconformity</b> |   | Template Identifier     | 240-43921804              | Rev | 6                |
|   |   |  |   | Document Identifier     | 240-126198845             | Rev | 2                |
|   |   |  |   | Effective Date          | June 2019                 |     |                  |
|   |   |  |   | Review Date             | July 2022                 |     |                  |
| <b>Justification: (Justification for rating of NC)</b>  |   |  |   |                         |                           |     |                  |
| When terms of reference and standard forms are not managed as controlled documents, line groups are at risk of applying out-dated mandates or omitting information required for a specific purpose  |   |  |   |                         |                           |     |                  |
| Recurring Nonconformity   | Y   | N                                      | X | Overall Severity Rating | 4                         | 3   | 2, 2, 1          |
| Originator  | R Simons  |  |   | Team Leader:            | R Simons                  |     |                  |
| Discussed with:   | A Stephanus   |  |   | Response required by:   | 2020-04-14                |     |                  |
| <b>Nonconformity Acknowledgement</b>  |   |  |   |                         |                           |     |                  |
| <ol style="list-style-type: none"> <li>The Auditee acknowledges the validity of the objective evidence documented above.</li> <li>The Auditee to please furnish OA within 25 days of issue of this nonconformity with a proposed corrective action plan using an assessment report as per K3A-D94.</li> <li>In addition, action taken to prevent recurrence of the nonconformity must be identified during the assessment.</li> </ol> |   |  |   |                         |                           |     |                  |
| Auditee Signature:  |  |  |   | Title:                  | ISED MANAGER              |     | Date: 2020-03-23 |
| <b>Reportable Nonconformity Confirmation</b>  |   |  |   |                         |                           |     |                  |
| The nonconformity is reportable in terms of the agreed license grading system: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |   |  |   |                         |                           |     |                  |
| Licensing Signature:  |  |  |   | Title:                  | Senior Licensing Engineer |     | Date: 2020-04-03 |

Controlled Disclosure

|                               |          |               |
|-------------------------------|----------|---------------|
| Title: Nuclear Safety Culture | Number   | A104/AU 39424 |
|                               | Revision | 0             |
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#### 4.5.8 Nonconformity CR 114005

|   |  |                     |               |     |   |
|---|--|---------------------|---------------|-----|---|
|  | <b>Quality Assurance<br/>Nonconformity</b> | Template Identifier | 240-43921804  | Rev | 6 |
|   |  | Document Identifier | 240-126198945 | Rev | 2 |
|   |  | Effective Date      | June 2019     |     |   |
|   |  | Review Date         | July 2022     |     |   |

|                                   |                                |                 |                       |
|-----------------------------------|--------------------------------|-----------------|-----------------------|
| <b>Monitoring Activity Title</b>  |                                | <b>Date</b>     | <b>Location</b>       |
| Nuclear Safety Culture            |                                | 2020-03-20      | Koeberg Power Station |
| <b>Monitoring activity number</b> | <b>Nonconformity CR number</b> | <b>Criteria</b> | <b>Organisation</b>   |
| A104                              | CR 114005                      | KAA-850 Rev 0   | KNPS                  |

**Nonconformity Description:**

The Power Station Manager has not led the *Safety Culture Forum*, which consists of his direct reports, in order to assess the health of safety culture.

**Criteria Description:**

KAA-850 Rev 0, *Koeberg Nuclear Power Station Safety Culture Enhancement Programme*, requires the following

- Paragraph 6.1.2 defines the following Power Station Manager responsibility: *Leading an annual process of safety culture self-assessment by means of the Safety Culture Forum (SCF).*
- Paragraph 3.1.5 defines the *Safety Culture Forum* as a Safety Culture Enhancement Programme management review forum convened to assess the health of safety culture.
- Paragraph 5.9.2 requires that the Safety Culture Forum consisting of the PSM, his direct reports and other relevant parties, convene on an annual basis during the period of September to November.

**Objective Evidence:**

- There is no evidence that the Power Station Manager has led the 2017 and 2018 annual process of safety culture self-assessment via the *Safety Culture Forum (SCF)*
- There is no evidence that the Power Station Manager's direct reports have been involved in the 2017 and 2018 annual process of safety culture self-assessment via the *Safety Culture Forum (SCF)*.

**Justification: (Justification for rating of NC)**

When leadership do not fulfil assigned responsibilities associated with implementing and maintaining the safety culture enhancement programme, including the relevant monitoring, the required environment to promote and foster a healthy safety culture, may be negatively impacted.

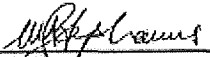
|                         |   |  |   |   |                         |   |  |   |  |   |     |   |  |
|-------------------------|---|--|---|---|-------------------------|---|--|---|--|---|-----|---|--|
| Recurring Nonconformity | Y |  | R | X | Overall Severity Rating | 4 |  | 3 |  | 2 | 2.2 | 1 |  |
|-------------------------|---|--|---|---|-------------------------|---|--|---|--|---|-----|---|--|

Originator: R Simons      Team Leader: R Simons

Discussed with: A Stephanus V Ntuli      Response required by: 2020-04-14


**Nonconformity Acknowledgement**

- The Auditee acknowledges the validity of the objective evidence documented above.
- The Auditee to please furnish QA within 25 days of issue of this nonconformity with a proposed corrective action plan using an assessment report as per KGA-084
- In addition, action taken to prevent recurrence of the nonconformity must be identified during the assessment.

Auditee Signature:  Title: **LED MANAGER** Date: **2020-03-23**

**Reportable Nonconformity Confirmation**

The nonconformity is reportable in terms of the agreed license grading system: Yes ☐ No ☒


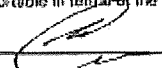
Licensing Signature:  Title: **Senior Licensing Engineer** Date: **2020-04-03**

Controlled Disclosure

|                               |          |               |
|-------------------------------|----------|---------------|
| Title: Nuclear Safety Culture | Number   | A104/AU 39424 |
|                               | Revision | 0             |
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#### 4.5.9 Nonconformity CR 114006


|   |  |                     |               |     |   |
|---|--|---------------------|---------------|-----|---|
|  Eskom | <b>Quality Assurance<br/>Nonconformity</b> | Template Identifier | 240-43921804  | Rev | 6 |
|   |  | Document Identifier | 240-126198845 | Rev | 2 |
|   |  | Effective Date      | June 2019     |     |   |
|   |  | Review Date         | July 2022     |     |   |


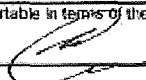
|  |   |   |  |
|--|---|---|--|
| <b>Monitoring Activity Title</b>   |   | <b>Date</b>                             | <b>Location</b>  |
| Nuclear Safety Culture   |   | 2020-03-20                              | Koeberg Power Station  |
| <b>Monitoring activity number</b>  | <b>Nonconformity CR number</b>  | <b>Criteria</b>                         | <b>Organisation</b>  |
| A104   | CR 114006   | 238-6 Rev 4                             | Nuclear Commercial   |
| <b>Nonconformity Description:</b>  |   |   |  |
| Certain Nuclear Commercial Procedures, required for implementing Nuclear Safety Culture, has passed their next review dates.   |   |   |  |
| <b>Criteria Description:</b>   |   |   |  |
| 238-6 Rev 4, <i>Nuclear Document and Records Management Requirement</i> , paragraph 3.2, <i>Documentation structure</i> states the following:  |   |   |  |
| <ul style="list-style-type: none"> <li>All documents classified as level 2 and 3 shall have a review period of three years.</li> <li>Documents at level 4 and 5 shall have a review cycle of up to a maximum of five years.</li> </ul>   |   |   |  |
| <b>Objective Evidence:</b>   |   |   |  |
| 1. 238-219 Rev 0, <i>Level -1 Supplier Safety Culture Enhancement Programme (SCEP) Requirements</i> , authorised 2014-06-06, has passed its next review date of November 2016. 238-219 Rev 0 is noted as a Level 3 document.<br>2. 238-165 Rev 1, <i>Nuclear Commercial Safety Culture and Human Performance Procedure</i> , authorised 2016-10-09, has passed its next review date of October 2019. 238-165 Rev 1 is noted as a Level 2 document. |   |   |  |
| <b>Justification: (Justification for rating of NC)</b>   |   |   |  |
| When controlled documents are not reviewed timeously, there is risk of process noncompliance as practices may have evolved from authorised processes.  |   |   |  |
| <b>Recurring Nonconformity</b>   | Y <input type="checkbox"/> N <input checked="" type="checkbox"/>                    | <b>Overall Severity Rating</b>          | 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1,3 <input type="checkbox"/> 1 <input type="checkbox"/> |
| <b>Originator:</b>   | R Simons  | <b>Team Leader:</b>                     | R Simons   |
| <b>Discussed with</b>  | B Culligan  | <b>Response required by:</b>            | 2020-04-14   |
| <b>Nonconformity Acknowledgement</b>   |   |   |  |
| 1 The Auditee acknowledges the validity of the objective evidence documented above.<br>2 The Auditee to please furnish QA within 25 days of issue of this nonconformity with a proposed corrective action plan using an assessment report as per KGA-094.<br>3 In addition, action taken to prevent recurrence of the nonconformity must be identified during the assessment.  |   |   |  |
| <b>Auditee Signature:</b>  |  | <b>Title:</b> Sam. Mene. Mene, Comm     | <b>Date:</b> 2020-03-30  |
| <b>Reportable Nonconformity Confirmation</b>   |   |   |  |
| The nonconformity is reportable in terms of the agreed license grading system: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |   |   |  |
| <b>Licensing Signature:</b>  |  | <b>Title:</b> Senior Licensing Engineer | <b>Date:</b> 2020-04-01  |

Controlled Disclosure

|                               |          |               |
|-------------------------------|----------|---------------|
| Title: Nuclear Safety Culture | Number   | A104/AU 39424 |
|                               | Revision | 0             |
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#### 4.5.10 Nonconformity CR 114007


|   |                                    |                     |               |     |   |
|---|------------------------------------|---------------------|---------------|-----|---|
|  | Quality Assurance<br>Nonconformity | Template Identifier | 240-43921804  | Rev | 6 |
|   |                                    | Document Identifier | 240-126198945 | Rev | 2 |
|   |                                    | Effective Date      | June 2019     |     |   |
|   |                                    | Review Date         | July 2022     |     |   |


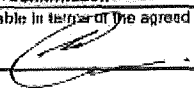
|  |   |                 |                              |                                |
|--|---|-----------------|------------------------------|--------------------------------|
| <b>Monitoring Activity Title</b>   |   | <b>Date</b>     | <b>Location</b>              |                                |
| Nuclear Safety Culture   |   | 2020-03-20      | Koeberg Power Station        |                                |
| <b>Monitoring activity number</b>  | <b>Nonconformity CR number</b>  | <b>Criteria</b> | <b>Organisation</b>          |                                |
| A104   | CR 114007   | 238-165 Rev 1   | Nuclear Commercial           |                                |
| <b>Nonconformity Description:</b>  |   |                 |                              |                                |
| The quarterly <i>Nuclear Commercial Safety Culture and Human Performance Oversight Committee</i> meetings have not been held since 2015.   |   |                 |                              |                                |
| <b>Criteria Description:</b>   |   |                 |                              |                                |
| 238-165 Rev 1, <i>Nuclear Commercial Safety Culture and Human Performance Procedure</i> requires the following: <ul style="list-style-type: none"> <li>Paragraph 3.2.2.2 notes the purpose of the <i>Nuclear Commercial Safety Culture and Human Performance Committee</i> as follows: "Oversee the compilation, update and execution of the <i>Nuclear Commercial Safety Culture and Human Performance Plan</i>."</li> <li>Paragraph 3.2.4.1 states "Meetings are held on a quarterly basis."</li> </ul>  |   |                 |                              |                                |
| <b>Objective Evidence:</b>   |   |                 |                              |                                |
| 1. The <i>Nuclear Commercial Safety Culture and Human Performance Oversight Committee</i> meetings have not taken place on a quarterly basis since October 2015.<br>2. There is no evidence that the oversight required during the compilation, update and execution of the <i>Safety Culture and Human Performance Plan</i> has taken place via the <i>Nuclear Commercial Safety Culture and Human Performance Oversight Committee</i> .<br>3. It was confirmed by the Nuclear Commercial Senior Advisor ( <i>Business Integration and Support</i> ) that there is no independent/ peer review during the compilation and updating of the <i>Nuclear Commercial Safety Culture and Human Performance Plan</i> . |   |                 |                              |                                |
| <b>Justification: (Justification for rating of NC)</b>   |   |                 |                              |                                |
| When the required <i>Nuclear Commercial Safety Culture and Human Performance Oversight Committee</i> meetings are not held, there is no assurance that the required oversight during the compilation, update and execution of the <i>Nuclear Commercial Safety Culture and Human Performance Plan</i> is achieved.   |   |                 |                              |                                |
| <b>Recurring Nonconformity</b>   | Y   | N               | X                            | <b>Overall Severity Rating</b> |
|  |   |                 |                              | 4                              |
| <b>Originator:</b>   | R Simons  |                 | <b>Team Leader:</b>          | R Simons                       |
| <b>Discussed with:</b>   | B Culligan  |                 | <b>Response required by:</b> | 2020-04-14                     |
| <b>Nonconformity Acknowledgement</b>   |   |                 |                              |                                |
| 1 The Auditee acknowledges the validity of the objective evidence documented above.<br>2 The Auditee to please furnish QA within 25 days of issue of this nonconformity with a proposed corrective action plan using an assessment report as per KGA-094.<br>3 In addition, action taken to prevent recurrence of the nonconformity must be identified during the assessment   |   |                 |                              |                                |
| <b>Auditee Signature:</b>  |  |                 | <b>Title:</b>                | Sen. Mow. Muv. Luv.            |
|  |   |                 | <b>Date:</b>                 | 2020-03-30                     |
| <b>Reportable Nonconformity Confirmation</b>   |   |                 |                              |                                |
| The nonconformity is reportable in terms of the agreed license grading system: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |   |                 |                              |                                |
| <b>Licensing Signature:</b>  |  |                 | <b>Title:</b>                | Senior Licensing Engineer      |
|  |   |                 | <b>Date:</b>                 | 2020-04-01                     |

Controlled Disclosure

|                               |          |               |
|-------------------------------|----------|---------------|
| Title: Nuclear Safety Culture | Number   | A104/AU 39424 |
|                               | Revision | 0             |
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#### 4.5.11 Nonconformity CR 114008


|   |  |                     |               |     |   |
|---|--|---------------------|---------------|-----|---|
|  | <b>Quality Assurance<br/>Nonconformity</b> | Template Identifier | 240-43921804  | Rev | 6 |
|   |  | Document Identifier | 240-126198945 | Rev | 2 |
|   |  | Effective Date      | June 2019     |     |   |
|   |  | Review Date         | July 2022     |     |   |

|  |   |                 |   |                                |
|--|---|-----------------|---|--------------------------------|
| <b>Monitoring Activity Title</b>   |   | <b>Date</b>     | <b>Location</b>                         |                                |
| Nuclear Safety Culture   |   | 2020-03-20      | Koeberg Power Station                   |                                |
| <b>Monitoring activity number</b>  | <b>Nonconformity CR number</b>  | <b>Criteria</b> | <b>Organisation</b>                     |                                |
| A104   | CR 114008   | 238-165 Rev 1   | Nuclear Commercial                      |                                |
| <b>Nonconformity Description:</b>  |   |                 |   |                                |
| Certain roles and responsibilities assigned to the Nuclear Commercial Senior Manager, related to the implementation and oversight of the Nuclear Safety Culture Programme, have not been implemented as required.  |   |                 |   |                                |
| <b>Criteria Description:</b>   |   |                 |   |                                |
| 238-165 Rev 1, <i>Nuclear Commercial Safety Culture and Human Performance Procedure</i> notes the following Senior Manager: Nuclear Commercial responsibilities:   |   |                 |   |                                |
| <ul style="list-style-type: none"> <li>Paragraph 2.5.2.3 states: "Establish a Nuclear Commercial Safety Culture and Human Performance Oversight Committee, and take the role of Chairperson of said committee."</li> <li>Paragraph 2.5.2.4 states: "Appoint a Nuclear Commercial Safety Culture and Human Performance Practitioner."</li> <li>Paragraph 2.5.2.5 states: "Periodically analyse the extent of human error as a contributory cause in safety incidents."</li> <li>Paragraph 2.5.2.7 states: "Devolve elements of the Nuclear Commercial Safety Culture and Human Performance Plan to departmental levels."</li> </ul>   |   |                 |   |                                |
| <b>Objective Evidence:</b>   |   |                 |   |                                |
| <ol style="list-style-type: none"> <li>There is no evidence that the Senior Manager: Nuclear Commercial has maintained and chaired the Nuclear Commercial Safety Culture and Human Performance Oversight Committee as required.</li> <li>There is no evidence that a Nuclear Commercial Safety Culture and Human Performance Practitioner has been appointed.</li> <li>There is no evidence that the extent of human error as a contributory cause in safety incidents has been periodically analysed.</li> <li>There is no evidence that the Nuclear Commercial Safety Culture and Human Performance Plan and related actions have been discussed in various Nuclear Commercial management meetings.</li> </ol> |   |                 |   |                                |
| <b>Justification: (Justification for rating of NC)</b>   |   |                 |   |                                |
| When a leadership does not fulfil assigned responsibilities associated with implementing the safety culture enhancement programme, the required environment to promote and foster a healthy safety culture, may be negatively impacted.  |   |                 |   |                                |
| <b>Recurring Nonconformity</b>   | <b>Y</b>  | <b>N</b>        | <b>X</b>                                | <b>Overall Severity Rating</b> |
|  |   |                 |   | 4                              |
| <b>Originator:</b>   | R Simons  |                 | <b>Team Leader:</b>                     | R Simons                       |
| <b>Discussed with:</b>   | B Culligan  |                 | <b>Response required by:</b>            | 2020-04-14                     |
| <b>Nonconformity Acknowledgement</b>   |   |                 |   |                                |
| <ol style="list-style-type: none"> <li>The Auditee acknowledges the validity of the objective evidence documented above.</li> <li>The Auditee to please furnish QA within 25 days of issue of this nonconformity with a proposed corrective action plan using an assessment report as per KGA-094.</li> <li>In addition, action taken to prevent recurrence of the nonconformity must be identified during the assessment.</li> </ol>  |   |                 |   |                                |
| <b>Auditee Signature:</b>  |  |                 | <b>Title:</b> Senior Mgr. Nuc. Comm.    | <b>Date:</b> 2020-03-30        |
| <b>Reportable Nonconformity Confirmation:</b>  |   |                 |   |                                |
| The nonconformity is reportable in terms of the agreed license grading system: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |   |                 |   |                                |
| <b>Licensing Signature:</b>  |  |                 | <b>Title:</b> Senior Licensing Engineer | <b>Date:</b> 2020-04-01        |

Controlled Disclosure

|                               |          |               |
|-------------------------------|----------|---------------|
| Title: Nuclear Safety Culture | Number   | A104/AU 39424 |
|                               | Revision | 0             |
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#### 4.5.12 Nonconformity CR 114009

|   |                                    |                     |               |     |   |
|---|------------------------------------|---------------------|---------------|-----|---|
|  | Quality Assurance<br>Nonconformity | Template Identifier | 240-43921804  | Rev | 6 |
|   |                                    | Document Identifier | 240-126198945 | Rev | 2 |
|   |                                    | Effective Date      | June 2019     |     |   |
|   |                                    | Review Date         | July 2022     |     |   |

|  |                                |                              |                       |                                |
|--|--------------------------------|------------------------------|-----------------------|--------------------------------|
| <b>Monitoring Activity Title</b>   |                                | <b>Date</b>                  | <b>Location</b>       |                                |
| Nuclear Safety Culture   |                                | 2020-03-20                   | Koeberg Power Station |                                |
| <b>Monitoring activity number</b>  | <b>Nonconformity CR number</b> | <b>Criteria</b>              | <b>Organisation</b>   |                                |
| A104   | CR 114009                      | 238-8 Rev 4<br>KSA-038 Rev 5 | Nuclear Commercial    |                                |
| <b>Nonconformity Description:</b>  |                                |                              |                       |                                |
| Records related to the Nuclear Commercial Safety Culture Enhancement Programme (SCEP) and the Management Review process for <i>Nuclear Commercial</i> , have either not been identified or appropriately indexed, as required.   |                                |                              |                       |                                |
| <b>Criteria Description:</b>   |                                |                              |                       |                                |
| 238-8 Rev 4, <i>Nuclear Safety and Quality Manual</i> , paragraph 3.1.2 related to <i>Process Management</i> requires that records, demonstrating that process results have been achieved, be specified in the process documentation.<br>KSA-038 Rev 5: <i>Requirements for Quality Records</i> requires the following <ul style="list-style-type: none"> <li>Paragraphs 5.2.3 and 5.3.2 states that records be identified, indexed and captured on a record retention matrix.</li> <li>Paragraph 5.2.3.3 requires that the records retention matrix be reviewed every two years</li> </ul>  |                                |                              |                       |                                |
| <b>Objective Evidence:</b>   |                                |                              |                       |                                |
| <ol style="list-style-type: none"> <li>Records related to the Nuclear Commercial SCEP have not been identified and documented in 238-165 Rev 1, <i>Nuclear Commercial Safety Culture and Human Performance</i> procedure, (authorised 2015-10-09) and as a result no SCEP records have been indexed on the authorised QRL (record retention matrix) for the Nuclear Commercial Business Integration and Support group dated, 2016-04-05.</li> <li>The details of the Nuclear Commercial Quality Record Listing (QRL) dated 2016-04-05, does not align with the record location requirements noted in 238-166 Rev 2, <i>Nuclear Commercial Management Review Committee Terms of Reference</i>, paragraph 9, which states that records are to be retained as non-permanent records on the Nuclear Commercial workspace on SharePoint.</li> <li>It has been confirmed by TD&amp;RM that no waiver request for in-section storage has been received from Nuclear Commercial.</li> <li>The authorised QRL (record retention matrix) for the Nuclear Commercial Business Integration and Support group was last reviewed on 2016-04-05.</li> </ol> |                                |                              |                       |                                |
| <b>Justification: (Justification for rating of NC)</b>   |                                |                              |                       |                                |
| When records are not identified and subsequently not archived as required, the organisation may not be able to demonstrate that process outputs have been achieved.  |                                |                              |                       |                                |
| <b>Recurring Nonconformity</b>   | Y                              | N                            | X                     | <b>Overall Severity Rating</b> |
|  |                                |                              |                       | 4                              |
|  |                                |                              |                       | 3                              |
|  |                                |                              |                       | 2                              |
|  |                                |                              |                       | 2,2                            |
|  |                                |                              |                       | 1                              |
| Originator: R Simons   |                                |                              |                       |                                |
| Team Leader: R Simons  |                                |                              |                       |                                |
| Discussed with: B Culligan   |                                |                              |                       |                                |
| Response required by: 2020-04-14   |                                |                              |                       |                                |
| <b>Nonconformity Acknowledgement</b>   |                                |                              |                       |                                |

- The Auditee acknowledges the validity of the objective evidence documented above.
- The Auditee to please furnish QA within 25 days of issue of this nonconformity with a proposed corrective action plan using an assessment report as per KGA-094.
- In addition, action taken to prevent recurrence of the nonconformity must be identified during the assessment.

Auditee Signature:  Title: Sen. Mgr. Mkt. Com Date: 2020-04-30

#### Reportable Nonconformity Confirmation




The nonconformity is reportable in terms of the agreed license grading system: Yes ☐ No ☒

Licensing Signature:  Title: Senior Licensing Engineer Date: 2020-04-01

Controlled Disclosure

|                               |          |               |
|-------------------------------|----------|---------------|
| Title: Nuclear Safety Culture | Number   | A104/AU 39424 |
|                               | Revision | 0             |
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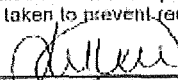

#### 4.5.13 Nonconformity CR 114010

|   |                                |  |   |   |  |  |  |
|---|--------------------------------|--|---|---|--|--|--|
|    |                                | <b>Quality Assurance Nonconformity</b> |   | Template Identifier<br>240-43921804<br>Rev 6  |  |  |  |
|   |                                |  |   | Document Identifier<br>240-126198945<br>Rev 2 |  |  |  |
|   |                                |  |   | Effective Date<br>June 2019                   |  |  |  |
|   |                                |  |   | Review Date<br>July 2022                      |  |  |  |
| <b>Monitoring Activity Title</b>  |                                | <b>Date</b>                            |   | <b>Location</b>                               |  |  |  |
| Nuclear Safety Culture  |                                | 2020-03-20                             |   | Koeberg Power Station                         |  |  |  |
| <b>Monitoring activity number</b>   | <b>Nonconformity CR number</b> | <b>Criteria</b>                        |   | <b>Organisation</b>                           |  |  |  |
| A104  | CR 114010                      | 238-6 Rev 4                            |   | Nuclear Project Management                    |  |  |  |
| <b>Nonconformity Description:</b>   |                                |  |   |   |  |  |  |
| Records for Nuclear Project Management (NPM), related to the Safety Culture Enhancement Programme and the Management Review Committee (MRM), have not been indexed on the authorised Quality Record list (QRL) or a Record Retention matrix.  |                                |  |   |   |  |  |  |
| <b>Criteria Description:</b>  |                                |  |   |   |  |  |  |
| 238-6 Rev 4, <i>Nuclear Document and Records Management Requirement</i> requires the following:   |                                |  |   |   |  |  |  |
| <ul style="list-style-type: none"> <li>Paragraph 5.1 specifies that records shall be managed through indexing on a Records Retention Matrix (240-43723778). Furthermore, maintaining the Records Retention Matrix on a continual basis and reviewing at prescribed intervals is required.</li> <li>Paragraph 5.4 requires that in instances where business areas store their own records, they shall request a waiver from TD&amp;RM.</li> </ul>  |                                |  |   |   |  |  |  |
| <b>Objective Evidence:</b>  |                                |  |   |   |  |  |  |
| 1. Records identified in the following NPM procedures have not been indexed on the authorised QRL (Records Retention Matrix) for NPM, dated 2016/06/03 and archived at TD&RM: <ul style="list-style-type: none"> <li>1.1. The SCEP (for NPM), 240-119091328 Rev 4, paragraph 6, identifies the Safety Culture Plan for each year and NPM Safety Culture Committee minutes as non-permanent records to be kept for 2 years internal to NPM on Sharepoint</li> <li>1.2. The <i>Management Review Procedure</i> (for NPM), 240-119091486 rev 4, paragraph 8.1 identifies that all minutes generated and presentations compiled for the management review session are records which are to be retained for a period of not less than 10 years. The minutes will include presentations and are to be stored on Sharepoint.</li> </ul> It was noted that the original hard copy minutes are retained in-section and electronically on Sharepoint. |                                |  |   |   |  |  |  |
| 2. It has been confirmed by TD&RM that no waiver request for in-section storage has been received from NPM.   |                                |  |   |   |  |  |  |
| 3. The latest authorised QRL was last reviewed in 2016/06/03.   |                                |  |   |   |  |  |  |
| <b>Justification: (Justification for rating of NC)</b>  |                                |  |   |   |  |  |  |
| When records are not indexed and subsequently archived as required, the necessary protection and retrievability of these records may be compromised.  |                                |  |   |   |  |  |  |
| <b>Recurring Nonconformity</b>  | Y                              | N                                      | X | <b>Overall Severity Rating</b>                |  |  |  |
|   |                                |  |   | 4   |  |  |  |
|   |                                |  |   | 3   |  |  |  |
|   |                                |  |   | 2   |  |  |  |
|   |                                |  |   | 2,2   |  |  |  |
|   |                                |  |   | 1   |  |  |  |
| <b>Originator:</b>  |                                | <b>Team Leader:</b>                    |   |   |  |  |  |
| R Simons  |                                | R Simons                               |   |   |  |  |  |
| <b>Discussed with:</b>  |                                | <b>Response required by:</b>           |   |   |  |  |  |
| R Lavelot   |                                | 2020-04-14                             |   |   |  |  |  |
| <b>Nonconformity Acknowledgement</b>  |                                |  |   |   |  |  |  |
| 1. The Auditee acknowledges the validity of the objective evidence documented above.  |                                |  |   |   |  |  |  |
| 2. The Auditee to please furnish QA within 25 days of issue of this nonconformity with a proposed corrective action plan using an assessment report as per KGA-094.   |                                |  |   |   |  |  |  |
| 3. In addition, action taken to prevent recurrence of the nonconformity must be identified during the assessment.   |                                |  |   |   |  |  |  |
| <b>Auditee Signature:</b>   |                                | <b>Title:</b>                          |   | <b>Date:</b>                                  |  |  |  |
|    |                                | NPM MANAGER (QA/NC)                    |   | 2020-03-20                                    |  |  |  |
| <b>Reportable Nonconformity Confirmation</b>  |                                |  |   |   |  |  |  |
| The nonconformity is reportable in terms of the agreed license grading system: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                                |  |   |   |  |  |  |
| <b>Licensing Signature:</b>   |                                | <b>Title:</b>                          |   | <b>Date:</b>                                  |  |  |  |
|    |                                | Senior Licensing Engineer              |   | 2020-04-03                                    |  |  |  |

Controlled Disclosure

|                               |          |               |
|-------------------------------|----------|---------------|
| Title: Nuclear Safety Culture | Number   | A104/AU 39424 |
|                               | Revision | 0             |
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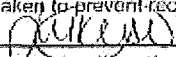
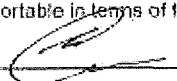
#### 4.5.14 Nonconformity CR 114011

|   |                         |                                    |             |                                  |                         |     |   |                  |     |   |  |  |  |  |  |  |  |
|---|-------------------------|------------------------------------|-------------|----------------------------------|-------------------------|-----|---|------------------|-----|---|--|--|--|--|--|--|--|
|    |                         | Quality Assurance<br>Nonconformity |             | Template Identifier              | 240-43921804            | Rev | 6 |                  |     |   |  |  |  |  |  |  |  |
|   |                         |                                    |             | Document Identifier              | 240-126198945           | Rev | 2 |                  |     |   |  |  |  |  |  |  |  |
|   |                         |                                    |             | Effective Date                   | June 2019               |     |   |                  |     |   |  |  |  |  |  |  |  |
|   |                         |                                    |             | Review Date                      | July 2022               |     |   |                  |     |   |  |  |  |  |  |  |  |
| Monitoring Activity Title   |                         |                                    | Date        |                                  | Location                |     |   |                  |     |   |  |  |  |  |  |  |  |
| Nuclear Safety Culture  |                         |                                    | 2020-03-20  |                                  | Koeberg Power Station   |     |   |                  |     |   |  |  |  |  |  |  |  |
| Monitoring activity number  | Nonconformity CR number |                                    | Criteria    |                                  | Organisation            |     |   |                  |     |   |  |  |  |  |  |  |  |
| A104  | CR 114011               |                                    | 238-8 Rev 4 |                                  | Nuclear Engineering     |     |   |                  |     |   |  |  |  |  |  |  |  |
| Nonconformity Description:  |                         |                                    |             |                                  |                         |     |   |                  |     |   |  |  |  |  |  |  |  |
| Records required to demonstrate that the Nuclear Engineering Safety Culture Enhancement Programme (SCEP) has been implemented or reviewed, has either not been identified, appropriately indexed or archived as required.   |                         |                                    |             |                                  |                         |     |   |                  |     |   |  |  |  |  |  |  |  |
| Criteria Description:   |                         |                                    |             |                                  |                         |     |   |                  |     |   |  |  |  |  |  |  |  |
| 238-8 Rev 4, Nuclear Safety and Quality Manual, paragraph 3.1.2 related to Process Management requires that records, demonstrating that process results have been achieved, be specified in the process documentation KSA-038 Rev 5 Requirements For Quality Records, paragraph 5.1.2.3 Records shall be classified as permanent or non-permanent in the relevant procedures that generates records.  |                         |                                    |             |                                  |                         |     |   |                  |     |   |  |  |  |  |  |  |  |
| Objective Evidence:   |                         |                                    |             |                                  |                         |     |   |                  |     |   |  |  |  |  |  |  |  |
| <ol style="list-style-type: none"> <li>331-499 Rev 1, Nuclear Engineering Safety Culture and Human Performance Committee Meeting ToR (authorised 2019/05/02) does not specify any records to be retained. Paragraph 7.5.2 states: 'No minutes will be taken, but an action list will be maintained as when and required'.</li> <li>Action lists are not identified on the current Nuclear Engineering/ Engineering Support Record retention matrix (2020/03/02).</li> <li>The current Nuclear Engineering/ Engineering Support Record retention matrix (2020/03/02) does not specify any records as part of the NE SCEP process.</li> <li>It was observed at the time of 331-8 rev 0 applicability (withdrawn 2019/07/15), it was required that each year's Safety Culture Enhancement Plan and all Safety Culture Assessment results were to be kept as permanent records. In reviewing the QRL applicable at that time (dated 2016-06-30), only an entry for the Safety Culture steering committee was included.</li> <li>The current Nuclear Engineering/ Engineering Support Record retention matrix (2020/03/02) does not specify the retention period for Management review meeting minutes while the previous record retention matrix (2019/11/19) noted these records to be retained for six months in-section and a total of 40 years.</li> <li>There is no evidence that Management review meeting minutes have been archived KIS location MC 1.4.2 and similarly the Management Committee meeting minutes have not been archived in KIS location MC 1.4.12.</li> </ol> |                         |                                    |             |                                  |                         |     |   |                  |     |   |  |  |  |  |  |  |  |
| Justification: (Justification for rating of NC)   |                         |                                    |             |                                  |                         |     |   |                  |     |   |  |  |  |  |  |  |  |
| When records are not identified and subsequently not archived as required, it may be difficult for the organisation to demonstrate that process outputs have been achieved.   |                         |                                    |             |                                  |                         |     |   |                  |     |   |  |  |  |  |  |  |  |
| Recurring Nonconformity   | Y                       |                                    | N           | X                                | Overall Severity Rating | 4   | 3 | 2                | 2,2 | 1 |  |  |  |  |  |  |  |
| Originator: R Simons  |                         |                                    |             | Team Leader: R Simons            |                         |     |   |                  |     |   |  |  |  |  |  |  |  |
| Discussed with: L Lukwe   |                         |                                    |             | Response required by: 2020-04-14 |                         |     |   |                  |     |   |  |  |  |  |  |  |  |
| Nonconformity Acknowledgement   |                         |                                    |             |                                  |                         |     |   |                  |     |   |  |  |  |  |  |  |  |
| <ol style="list-style-type: none"> <li>The Auditee acknowledges the validity of the objective evidence documented above.</li> <li>The Auditee to please furnish QA within 25 days of issue of this nonconformity with a proposed corrective action plan using an assessment report as per KGA-004.</li> <li>In addition, action taken to prevent recurrence of the nonconformity must be identified during the assessment.</li> </ol>   |                         |                                    |             |                                  |                         |     |   |                  |     |   |  |  |  |  |  |  |  |
| Auditee Signature:   |                         |                                    |             | Title: Eng Supp Manager          |                         |     |   | Date: 2020/03/20 |     |   |  |  |  |  |  |  |  |
| Reportable Nonconformity Confirmation   |                         |                                    |             |                                  |                         |     |   |                  |     |   |  |  |  |  |  |  |  |
| The nonconformity is reportable in terms of the agreed license grading system: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                         |                                    |             |                                  |                         |     |   |                  |     |   |  |  |  |  |  |  |  |
| Licensing Signature:   |                         |                                    |             | Title: Senior Licensing Engineer |                         |     |   | Date: 2020-04-03 |     |   |  |  |  |  |  |  |  |

Controlled Disclosure

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|-------------------------------|----------|---------------|
| Title: Nuclear Safety Culture | Number   | A104/AU 39424 |
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#### 4.5.15 Nonconformity CR 114012

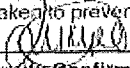

|   |                                 |   |                       |                                  |                       |                  |
|---|---------------------------------|---|-----------------------|----------------------------------|-----------------------|------------------|
|  Eskom   | Quality Assurance Nonconformity |   | Template Identifier   | 240-43921804                     | Rev                   | 6                |
|   |                                 |   | Document Identifier   | 240-126108945                    | Rev                   | 2                |
|   |                                 |   | Effective Date        | June 2019                        |                       |                  |
|   |                                 |   | Review Date           | July 2022                        |                       |                  |
| Monitoring Activity Title   |                                 |   | Date                  |                                  | Location              |                  |
| Nuclear Safety Culture  |                                 |   | 2020-03-20            |                                  | Koeberg Power Station |                  |
| Monitoring activity number  | Nonconformity CR number         | Criteria  |                       | Organisation                     |                       |                  |
| A104  | CR 114012                       | 331-499 Rev 1   |                       | Nuclear Engineering              |                       |                  |
| <b>Nonconformity Description:</b>   |                                 |   |                       |                                  |                       |                  |
| Not all the Nuclear Engineering Safety Culture and Human Performance Committee quarterly meetings have been held for the period, April 2019 to March 2020, as required.   |                                 |   |                       |                                  |                       |                  |
| <b>Criteria Description:</b>  |                                 |   |                       |                                  |                       |                  |
| 331-499 Rev 1, Nuclear Engineering Safety Culture and Human Performance Committee Meeting Terms of Reference paragraph 7.1.1 states: 'The Committee meeting shall be held quarterly'  |                                 |   |                       |                                  |                       |                  |
| <b>Objective Evidence:</b>  |                                 |   |                       |                                  |                       |                  |
| <p>1. The 2019-2020 Nuclear Engineering Safety Culture and Human Performance plan only records the completion of two of the four scheduled Nuclear Engineering Safety Culture and Human Performance Committee meetings for the period, April 2019 to March 2020. These were held on 2019-05-02 and 2020-02-18.</p> <p>According to the NE NSC HP Plan 2019/2020, the meetings scheduled for the second and third quarter, to be held in August and November 2019, were not completed.</p> |                                 |   |                       |                                  |                       |                  |
| <b>Justification: (Justification for rating of NC)</b>  |                                 |   |                       |                                  |                       |                  |
| When the prescribed amount of Nuclear Engineering Safety Culture and Human Performance Committee meetings are not held, the desired enhancement of Nuclear Engineering Safety Culture Programme, may not be achieved  |                                 |   |                       |                                  |                       |                  |
| Recurring Nonconformity   | Y                               | N   | X                     | Overall Severity Rating          | 4                     | 3                |
| Originator:   | R Simons                        |   | Team Leader:          | R Simons                         |                       |                  |
| Discussed with:   | L Lukwa                         |   | Response required by: | 2020-04-14                       |                       |                  |
| <b>Nonconformity Acknowledgement</b>  |                                 |   |                       |                                  |                       |                  |
| <p>1 The Auditee acknowledges the validity of the objective evidence documented above</p> <p>2 The Auditee to please furnish QA within 25 days of issue of this nonconformity with a proposed corrective action plan using an assessment report as per KGA-094.</p> <p>3 In addition, action taken to prevent recurrence of the nonconformity must be identified during the assessment.</p>   |                                 |   |                       |                                  |                       |                  |
| Auditee Signature:  |                                 |  |                       | Title: Eng Supp Mankger          |                       | Date: 2020/03/20 |
| <b>Reportable Nonconformity Confirmation</b>  |                                 |   |                       |                                  |                       |                  |
| The nonconformity is reportable in terms of the agreed license grading system; Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                                 |   |                       |                                  |                       |                  |
| Licensing Signature:  |                                 |  |                       | Title: Senior Licensing Engineer |                       | Date: 2020-04-23 |

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#### 4.5.16 Nonconformity CR 114013

|   |                                    |                     |               |     |   |
|---|------------------------------------|---------------------|---------------|-----|---|
|  | Quality Assurance<br>Nonconformity | Template Identifier | 240-43921804  | Rev | 6 |
|   |                                    | Document Identifier | 240-126198945 | Rev | 2 |
|   |                                    | Effective Date      | June 2019     |     |   |
|   |                                    | Review Date         | July 2022     |     |   |

|   |                         |                                  |                       |                         |   |
|---|-------------------------|----------------------------------|-----------------------|-------------------------|---|
| Monitoring Activity Title   |                         | Date                             |                       | Location                |   |
| Nuclear Safety Culture  |                         | 2020-03-20                       |                       | Koeberg Power Station   |   |
| Monitoring activity number  | Nonconformity CR number | Criteria                         |                       | Organisation            |   |
| A104  | CR 114013               | 331-499 Rev 1                    |                       | Nuclear Engineering     |   |
| <b>Nonconformity Description:</b>   |                         |                                  |                       |                         |   |
| There is no evidence that the NE Safety culture and HP Chairperson has endorsed the action lists stemming from the Safety Culture and Human Performance Committee meetings for the period April 2018 to March 2020.   |                         |                                  |                       |                         |   |
| <b>Criteria Description:</b>  |                         |                                  |                       |                         |   |
| 331-499 Rev 1, Nuclear Engineering Safety Culture and Human Performance Committee Meeting Terms of Reference requires the following: <ul style="list-style-type: none"> <li>Paragraph 5.2.5 states: 'The Chairperson shall: validate NE Safety Culture and HP Committee actions are true representation of what was discussed'</li> <li>Paragraph 5.3.1 states: 'The NE Safety Culture and HP secretariat shall: compile and distribute actions that stemmed from the meeting after they have been reviewed and endorsed by the NE Safety culture and HP Chairperson.'</li> </ul> |                         |                                  |                       |                         |   |
| <b>Objective Evidence:</b>  |                         |                                  |                       |                         |   |
| 1. There is no evidence that the NE Safety culture and HP Chairperson has reviewed and endorsed the action lists, for the following two meetings, prior to these action lists being distributed to members of the committee. <ul style="list-style-type: none"> <li>02 May 2019</li> <li>19 February 2020</li> </ul>  |                         |                                  |                       |                         |   |
| <b>Justification: (Justification for rating of NC)</b>  |                         |                                  |                       |                         |   |
| When action lists are not endorsed and validated by the NE Safety Culture and HP chairperson, it cannot be assured that the actions stemming from these meetings are a true representation of what was discussed.   |                         |                                  |                       |                         |   |
| Recurring Nonconformity   | Y                       | N                                | X                     | Overall Severity Rating | 4 |
| Originator  | R Simons                |                                  | Team Leader:          | R Simons                |   |
| Discussed with:   | L Lukwe                 |                                  | Response required by: | 2020-04-14              |   |
| <b>Nonconformity Acknowledgement</b>  |                         |                                  |                       |                         |   |
| 1 The Auditee acknowledges the validity of the objective evidence documented above.<br>2 The Auditee to please furnish QA within 25 days of issue of this nonconformity with a proposed corrective action plan using an assessment report as per KGA-094.<br>3 In addition, action taken to prevent recurrence of the nonconformity must be identified during the assessment.   |                         |                                  |                       |                         |   |
| Auditee Signature:   |                         | Title: Eng Supr Manager          |                       | Date: 2020/04/10        |   |
| <b>Reportable Nonconformity Confirmation</b>  |                         |                                  |                       |                         |   |
| The nonconformity is reportable in terms of the agreed license grading system: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                         |                                  |                       |                         |   |
| Licensing Signature:   |                         | Title: Senior Licensing Engineer |                       | Date: 2020-04-03        |   |

Controlled Disclosure

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#### 4.5.16 Detailed Observations

| Number          | Description  | Responsible Group |
|-----------------|--|-------------------|
| AU 39424-001 QA | <p><b>The establishment and integration of a security culture programme, as part of the overall nuclear safety programme, is not evident in the NOU IMS and has therefore not been cascaded into the safety programmes established by various Business areas.</b></p> <p>1) 238-28 Rev 3, Nuclear Safety Management Programme references normative and informative documentation that explicitly notes the consideration of security culture, however 238-28 does not define any roles and responsibilities or defines specific requirements as it relates to security culture. These documents are as follows:</p> <p>a) 32-83, Eskom Nuclear Management Policy<br/> b) IAEA GSR Part 2, Leadership and Management for Safety<br/> c) RG-0007, Regulatory Guide on Management of Safety</p> <p>Note: 238-28 only mentions 'security consciousness' in the scope of the document</p> <p>2) Furthermore, no reference to security culture was evident during the review of the following business area Safety Culture Enhancement Programmes:</p> <p>a) Nuclear Commercial documented in 238-165 Rev 1, <i>Nuclear Commercial Safety Culture and Human Performance Procedure</i>.<br/> b) Nuclear Project Management documented in 240-119091328 rev 5, <i>Safety Culture Enhancement Programme</i>.<br/> c) Koeberg Power Station documented in KAA-850 Rev 0, <i>Koeberg Nuclear Power Station Safety Culture Enhancement Programme</i>.<br/> d) Nuclear Engineering has withdrawn 331-8 Rev 0, <i>Safety Culture Enhancement Programme</i> and replaced their process document with 331-499 Rev 1, <i>Nuclear Engineering Safety Culture and Human Performance Committee Meeting Terms of Reference</i>. Both these documents do not refer to security culture.</p> <p>3) It was stated by the Nuclear Services Manager that a Security Plan which is an element of security culture is in place. Based on the classification of this information, only elements were verified. Furthermore, the Nuclear Services Manager indicated that even though certain elements of security culture have been integrated into Security practices, security culture within the wider organisation still required integration.</p> | NOU               |
| AU 39424-002 QA | <p><b>In order to effectively implement the NEXCO endorsed nuclear safety culture health indicators which is needed to measure the status of the established Eskom Nuclear Objective, may require further consolidation and review in order to ensure that business area KPIs are aligned and are able to support this overall NOU health measurement.</b></p> <p>It was noted that the health of the nuclear safety culture is not explicitly addressed as a measurement in 238-179 Rev 2 (Nuclear Operating Unit Key performance indicators) used to monitor the achievement of the Eskom Nuclear Objectives While 240-108035478 Rev 2, <i>The Eskom Nuclear Objectives</i> in turn refers to <i>Nuclear Culture (Safety and Security)</i> as part Objective – Organisational Effectiveness documented in section 2.3.3.</p> <p>In reviewing the following NEXCO endorsed indicators to measure nuclear safety culture health across the NOU, it would be</p>  | NOU-              |

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| Title: Nuclear Safety Culture | Number   | A104/AU 39424 |
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|                 |   |     |
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|                 | <p>prudent to ensure that all the aspects identified, can be applied and measured consistently across business areas in order to provide and overall health measurement to satisfy the nuclear objective of <i>Organisational Effectiveness</i> as it relates to <i>Nuclear Culture (Safety and Security)</i>:</p> <p>The following elements were identified as aspects to be measured: Staff engagement; Observation Programme Health; CAP Health; Leadership Programme; Self-assessments; Nuclear Safety Concerns.</p> <p>Furthermore it should be noted that a previous QA finding (CR5398 and AU36318-001 QA) noted in 2016 highlighted that key performance indicators were not defined or implemented across the NOU, to gauge the strength of Nuclear Safety culture health. Therefore resolution in this regard, by ensuring alignment as well as effective and efficient implementation will resolve this area previously noted as deficient.</p>  |     |
| AU 39424-003 QA | <p><b><i>The NOU Nuclear Safety Management Programme, 238-28 Rev 3, has not documented in sufficient detail, the requirements assigned at the level of functional area to ensure consistent implementation and compliance to Safety Culture Enhancement Programme (SCEP) requirements, when compared to revision 2 and revision 1 of the same document.</i></b></p> <p>The following inconsistencies were noted in the various functional areas:</p> <ol style="list-style-type: none"> <li>1. The management of SCEP records across the functional areas differs between functional areas. Examples have been noted where no records are being identified and maintained to instances where various records are being classified as either permanent or non-permanent.</li> <li>2. The understanding and resultant implementation of the annual Safety Culture self-assessment by individual functional areas are inconsistent. Certain groups rely on the KOU self-assessment and seldom identify applicable actions stemming from these self-assessments, while other functional areas perform focused Safety culture assessments and identify appropriate actions for the specific functional area, thereby enhancing the functional area's safety culture plan.</li> <li>3. The application of key performance indicators across the functional areas are also noted as inconsistent or not aligned in order to support a wider NOU NSC health measurement.</li> <li>4. Furthermore gaps have been noted that apply to the establishment and implementation of <i>Safety Culture Forum</i>, at the NOU level which may assist in ensuring alignment to SCEP requirements across the NOU.</li> <li>5. Furthermore it was noted all previous prescription regarding Level 1 suppliers and their sub-suppliers, have now been omitted from the current revision, which was documented in the previous revisions of 238-28.</li> </ol> <p><b><i>The NOU Safety Culture forum does not retain meeting minutes or action lists thereby impacting the ability to demonstrate that various SC &amp; HP practitioners have participated in a single NOU forum which may be key in promoting alignment as it relates to SCEP initiatives across the NOU.</i></b></p> <p>It was not possible to retrieve meeting minutes for the KOU Safety Culture forum for meetings held during the period, 2017 to 2019. Although it was stated by various SC &amp; HP practitioners and the previous Nuclear Safety Culture Advisor that the KOU Safety Culture forum meetings were held on a quarterly basis, no meeting minutes or action lists are retained to substantiate these</p> | NOU |
| AU 39424-004 QA |   | NOU |

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|                 | statements. As a result in cannot be determined the extent of participation from other business areas across the KOU and whether the objective of the forum has been met.  |     |
| AU 39424-005 QA | <p><b><i>Specific leading and lagging indicators to be used when performing a safety culture self-assessment, have not been defined in the Nuclear Safety Management Programme, 238-8 Rev 3 and has therefore has not been cascaded consistently into the Safety programmes established by various Business areas.</i></b></p> <p>All the business area Safety Culture Enhancement Programmes reviewed have not specified the leading and lagging indicators to be used when performing a safety culture self-assessment. The only exception to this anomaly is noted in KAA-850, Rev 0, Koeberg Nuclear Power Station Safety Culture Enhancement Programme, paragraph 5.7 Safety Culture Surveys and Monitoring. By not defining the type of leading and lagging indicators to be used across the wider organisation, has resulted in inconsistent implementation of the RD-0034 requirement noted paragraph (122) which requires that a systematic process for monitoring safety culture within level 1 organisation's be established, using suitable leading and lagging indicators, and qualitative information. Note that the previous revision of 238-28 Rev 1, authorised 2013/12/12, had included the requirement for leading and lagging indicators to be used during the annual process of safety culture assessments</p>  | NOU |
| AU 39424-006 QA | <p><b><i>The current methodology applied during the compilation of the 2017 and 2018 Nuclear Safety Culture Self-assessment, has not incorporated or considered the IAEA industry guidance/best practice as it relates to the execution and follow-up of nuclear safety culture self-assessments.</i></b></p> <p>IAEA Safety Guide GS-G-3.5, The Management System for Nuclear Installation, a supporting guide to GSR- Part 2, Leadership and Management for Safety, identifies the following guidelines when implementing Safety culture self-assessments:</p> <ol style="list-style-type: none"> <li>1. The self-assessment of safety culture should include the entire organisation. The 2017 and 2018 Safety culture self-assessments consisted of two team members who reviewed condition reports raised on Devonway.</li> <li>2. A designated team representing all organisational levels and functions at the installation should carry out the self-assessment. The 2017 and 2018 Safety culture self-assessments consisted of two team members.</li> <li>3. A specialist in safety culture should be included in the team for ensuring that appropriate assessment tools are developed and applied, as well as for carrying out an analysis of the results (including a statistical analysis of the results of questionnaires) and their interpretation.</li> <li>4. The self-assessment team should receive training in how to develop the assessment tools and in the steps to be considered in the assessment process.</li> <li>5. The focus groups should include cross-functional representatives and/or representatives from an organisational unit. There should be enough focus groups to obtain a realistic assessment of the entire organization.</li> <li>6. A follow-up assessment should be performed, account being taken of the time needed for improvement actions to have their full effect on the safety culture.</li> </ol> <p>Although not applying all IAEA industry guidelines may be feasible, an attempt to follow best practice is recommended.</p> | NOU |
| AU 39424-007 QA | <p><b><i>All the actions and recommendations identified during the 2016 Nuclear Safety Culture survey as well as the 2018 Nuclear Safety Culture self-assessment, have not been captured on Devonway as related items or additional actions.</i></b></p> <p>Although it is noted that the survey is executed by an external supplier and the report may not strictly be a self-assessment,</p>   | NOU |

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| AU 39424-008 QA | <p>Actions related to self-assessments, whether general or corrective in nature are required to be appropriately assigned in order to ensure actions are tracked to completion. When actions are not visible to the wider organisation and the assigned owners, the following impact may be experienced:</p> <ul style="list-style-type: none"> <li>• The assigned action owners are unaware of actions and related expectations;</li> <li>• The organisation may not be able to continuously track actions during implementation up until appropriate closure.</li> <li>• Furthermore if actions are not loaded in such a portal as Devonway, the validation of actions closed and the follow-up effectiveness review of these actions may not be possible.</li> </ul> <p>In order to ensure actions are appropriately assigned and tracked to completion, may necessitate raising these actions, whether general or corrective in nature on Devonway. When actions are not visible to the wider organisation and to the assigned owners, the organisation may be challenge the continuous tracking of actions during implementation up until appropriate closure. Furthermore if actions are not loaded in such a portal as Devonway, the validation of actions closed and the follow-up effectiveness review of these actions may not be possible.</p> <p>The 2016 Nuclear Safety Culture survey, SE35153 titled, Focused SE 57722 Nuclear Safety Culture assessment (NNR Progress report 2016) – ISED was initiated on 2015/08/06 and closed 2017/06/06. No actions have been loaded on Devonway even though ten recommendations were recorded in the report. A second entry for the 2016 Nuclear Safety Culture survey captured as SE 57722 was noted. SE 57722 titled, Nuclear Safety Culture assessment (NNR Progress report 2016) was initiated and closed on 2016/04/11.</p> <p>In reviewing Devonway data associated with SE 38462, the following anomalies were observed: The 2018 Nuclear Safety Culture self-assessment, SE 38462, titled <i>NOU Nuclear Safety Culture 2018 report</i> was initiated and closed on 2019/06/11. No actions have been loaded on Devonway even though six strategic actions were recorded in the report. A link to the report has been provided. There is no evidence that the relevant manager would be able to determine if all actions identified during the 2018 Nuclear Safety Culture self-assessment report, have been tracked to completion based on the SE item Devonway data available.</p> | NOU |
|                 | <p><b>Resolution of certain actions and recommendations identified during the 2017 NSC self-assessment and reported in 2018 (SE 37932) have not been timeously completed, based on Devonway data reviewed.</b></p> <p>According to a Devonway Query (2020-03-11) certain actions associated with the self-assessment completed in 2017 have not all been closed and are indicated as overdue on Devonway</p> <p>The following two actions have been noted as overdue:</p> <ol style="list-style-type: none"> <li>SE 37932-006 GA (Raised: 2018/11/13 &amp; Due date 2019/04/30) - Assess current proficiency levels in all areas across the NOU. (SGM)</li> <li>SE 37932-007 GA (Raised: 2018/11/13 &amp; Due date 2019/04/30) - Develop and Implement customised leadership training to address the following behaviours: Accountability, Trust and Respect (ISE DR)</li> </ol> <p>According to the same Devonway query, the following two actions remain open with noted dues dates in the future:</p> <ol style="list-style-type: none"> <li>SE 37932-003 GA (Raised: 2018/11/13 &amp; Due date: 2020/03/31): Develop and implement change management as it relates to</li> </ol>   |     |

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|                 | the formalised structures. (PSM)<br>b) SE 37932-005 GA (Raised: 2018/11/13 & Due date: 2020/05/31): Develop and Implement formalised handover process as it relates to stand-in/acting management positions (PSM).  |                                 |
| AU 39424-009 QA | <b>238-128 Rev 3, Management Review Standard has not documented sufficient detail regarding the record retention requirements to demonstrate compliance to ISO 9001:2015 and RD-0034 requirements.</b><br><br>Keeping the following requirements in mind, it was observed that inconsistencies were noted in the retention periods assigned to Management Review Meeting minutes across the NOU. Examples include, either six years, 10 years and some instances the retention periods are undefined.<br>ISO 9001:2015 states; 'The organization shall retain documented information as evidence of the results of management reviews.' While RD-0034 Rev 0, <i>Quality and Safety Management Requirements for Nuclear Installations</i> , paragraph (45) states: 'A management review process must be established within the organisations to ensure that an evaluation of the efficiency and effectiveness of the management system with respect to the requirements of this RD is done.'   | Nuclear Strategy and Regulation |
| AU 39424-010 QA | <b>Clarity regarding the various types of safety culture plans adopted within KNPS and NOU is required to ensure that configuration is maintained and the current safety culture plan is always updated and accessible.</b><br><br>When the safety culture plans for KNPS were requested, two different Excel spreadsheets were provided to the auditor, depicting KNPS safety culture plans 2018-2019.<br><br>The following safety culture plans were provided:<br>1. KNPS Nuclear Safety Culture Plan 2018-2019 (Rev 0a) - noted seven elements such as: Safety Culture Awareness and Communication; Individual Awareness/Questioning Attitude; Safety Leadership; Audits and Reviews (Internal and External); Safety Culture Surveys and Monitoring; Continuous Improvement (Learning from Events); Control of Safety Culture Enhancement (Safety Culture Steering Committee)<br>2. Nuclear Safety Culture Plan- Koeberg Power Station 2018/2019 - (no revision noted) contained Nuclear safety culture report actions for the following categories: Organisational, leadership and Individual categories<br>It is also uncertain how often certain KNPS and NOU Safety culture plans have been updated since no revision/version control has been applied on a sample of safety plans provided and reviewed during the audit.<br>1) The following safety culture plans were provided from a number of individuals in preparation of the audit:<br>a) KNPS Nuclear Safety Culture Plan 2018-2019 (Rev 0a) – provide by NSEG individual<br>b) Nuclear Safety Culture Plan- Koeberg Power Station 2018/2019 - no revision noted – provided by the former NOU Safety culture acting manager<br>c) Nuclear Safety Culture Plan- Koeberg Operating Unit 2018/2019 - no revision noted – provided by the former NOU Safety culture acting manager<br>d) Nuclear Safety Culture Plan- Koeberg Operating Unit 2019/2020 - no revision noted - provided by ISSED manager<br>Note previous QA finding (GC 78525) noted in 2013 also highlighted that revision/ change control for safety culture plans were not implemented. | KNPS                            |

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| AU 39424-011 QA | <p><b>Based the 2019 HPOC Departmental Feedback forms reviewed, it is evident that emerging human performance issues are not identified using the trending mechanisms available through Devonway and guidance provided in KGA-078, Coaching and Job Observation at Koeberg Nuclear Power Station, in order to ensure that human performance strategies for improvement are determined.</b></p> <p>A total of (ninety-three) of HPOC Departmental Feedback forms were reviewed in order to determine if trend data was appropriately assessed and used to identify potential adverse trends.</p> <p>It was also observed that the process of collecting and forming meaningful insights from observation cards may be negatively impacted by line groups bypassing Devonway controls by entering "fullstops" in the comment field, when needed, instead of value-adding comments. This practice was pervasive in certain groups assessed during this review.</p> <p>It has also been noted that the Devonway portal can facilitate effective trending but when attention to detail and information is deliberately omitted, the data recorded may not fully support meaningful data analysis.</p> <p>Even though the current HPOC Departmental Feedback form does allow for related information to be captured. What may be lacking is the critical review and assessment of the Observation data available.</p> <p>Besides trending from the Station CAR process, which results in adverse trends being identified and common cause assessments being performed, the CAP/ NSEG trending capacity is limited due to the station quarterly trend report or similar report not being compiled. It was also observed that KAA-828 Rev 0 <i>Trending at Koeberg Power Station</i> has been withdrawn in 2019/02/27 which potentially may further diminish the trending capability/function provided by NSEG.</p> | KNPS- |
| AU 39424-012 QA | <p><b>Certain actions and recommendations identified during the common cause assessment (SE 38585) titled, Self-Assessment of Recent Plant Events Related to Human Performance, have not been loaded on Devonway, based on the Devonway data reviewed</b></p> <p>The self-assessment was initiated 2019/07/19 and was closed on 2019/10/21.</p> <p>Based on a comparison of actions documented in the self- assessment report, which was endorsed by the Plant and/ or ISED Managers, and the report generated from Devonway (2020/03/02 and 2020/03/11), it was evident that the following actions were identified in the report but were not captured in Devonway.</p> <ol style="list-style-type: none"> <li>1) Actions 6.1 to 6.9 – Related to groups performing a needs analysis on HP training for their specific group (Due date: 2019/12/15)</li> <li>2) Action 7- Amend HP KPI's to reflect input from the HP forum, PSC forum and PSR forum (Due date 2020/01/31)</li> <li>3) Action 8- Appoint a station HP custodian (Due date: 2019/12/15)</li> </ol> <p>Self-assessment actions related to self-assessments, whether general or corrective in nature are required to be appropriately assigned in order to ensure actions are tracked to completion. When actions are not visible to the wider organisation and the assigned owners, the following impact may be experienced:</p> <ul style="list-style-type: none"> <li>• The assigned action owners are unaware of actions and related expectations;</li> <li>• The organisation may not be able to continuously track actions during implementation up until appropriate closure.</li> </ul>   |       |

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|                 | <ul style="list-style-type: none"> <li>Furthermore if actions are not loaded in such a portal as Devonway, the validation of actions closed and the follow-up effectiveness review of these actions may not be possible.</li> </ul>  |                            |
| AU 39424-013 QA | <p><b>Reference to a KNPS document, KGA-093, which has been withdrawn since 2013-02-19, has been noted in 240-119091328 Rev 5, Safety Culture Enhancement Programme (for NPM) which was authorised in September 2019.</b></p> <p>240-119091328 rev 5, authorised in September 2019, references KGA-093, which has been withdrawn since 2013-02-19. The reference to KGA-093 has been referenced in paragraph 2.2.2 and as part of the Informative references and in the body of the document, paragraph 3.1 dealing with Individual Awareness/Questioning Attitude.</p>  | Nuclear Project Management |
| AU 39424-014 QA | <p><b>Insufficient detail regarding the SC Health assessments planned and executed were included in the FY2019 and FY2020 NPM SC plans.</b></p> <p>During the Initial verification interview held on 2020/02/27 with the NPM SCEP co-ordinator, he stated he was not aware of any NSC Self-assessments recently completed within NPM. During the NPMSCC meeting held on Friday 2020/02/28, it was mentioned by a member of the committee that a Safety culture self-assessment related to willingness of suppliers to raise concerns, was completed. The following details related to this self-assessment was noted: Date of SE: 2019/02/18, unique SE number: SE 38130 and title, Self-assessment on the Contractor Evaluation criteria. Four identified actions were noted on Devonway .</p> <p>In reviewing the plans it was observed that typically an entry only noting 'SC health Assessment' was recorded for NS self-assessments . Since the SCEP Co-ordinator has only been appointed since May 2019, if the details of this self-assessment was noted on the plan, the individual would have been able to review and demonstrate the completion of the NSC self-assessment</p>  | Nuclear Project Management |
| AU 39424-015 QA | <p><b>The frequency of the NPM Safety Culture Committee meetings have not been defined in 240-119091328 rev 5, Safety Culture Enhancement Programme (for NPM)</b></p> <p>240-119091328 rev 5 Safety Culture Enhancement Programme (for NPM) only states that, 'The NPMSCC meets regularly to discuss the status and effectiveness of the SCEP. " as noted in section 3.4 Control of Safety Culture Enhancement</p>   | Nuclear Project Management |
| AU 39424-016 QA | <p><b>Resolution of Nuclear Commercial Safety Culture and Human Performance Plan actions, have not been timeously completed.</b></p> <p>A sample of forty-five Nuclear Commercial Safety Culture and Human Performance Plan (2017-2020) actions were reviewed and it was observed that certain actions important to the Nuclear commercial core business and issues currently requiring attention, have either not been completed or implemented as planned based on the evidence recorded on the Nuclear Commercial Safety Culture and Human Performance Plan and Devonway.</p> <p>Examples include:</p> <p>1) <i>Create awareness of safety culture with suppliers at supplier forums.</i> There is no objective evidence that this action was completed for FY2019 and FY2020. Only the action for FY2018 was indicated as completed.</p> <p>Furthermore certain Periodic Safety Culture and Human Performance self-assessments were noted as in progress or have been rolled over from year to year.</p> <p>A total of seven different periodic Safety Culture and Human Performance assessments (nine entries) were identified and planned across the three NC Safety Culture and Human Performance Plans reviewed. Of the open Self-assessment actions, the self - assessment, SE35232, titled, <i>The availability of spares</i> has been rolled over from the 2017/2018 plan and still remains open on</p> | Nuclear Commercial         |

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|                 | <p>the current Nuclear Commercial Safety Culture and Human Performance Plan (2019/2020). It was also noted that SE35232 has an initiated date of 2015/09-02 on Devonway and still remains open, with a due date of 2020/2/28, which was overdue at the time of conducting this audit. According to the plans reviewed, only four of these seven actions have been completed. (Note the closure of these actions was verified on Devonway).</p>  |                     |
| AU 39424-017 QA | <p><b><i>The impact of withdrawing the Nuclear Engineering Safety Culture Enhancement procedure 331-8 Rev 0, while ensuring compliance to SCEP requirements, may not have been holistically assessed.</i></b></p> <p><i>For example, records generated from the period 2014-02-27 to 2019-07-15 when 331-8 Rev 0, The Nuclear Engineering Safety Culture Enhancement procedure was applicable, are no longer being managed as a records. Records have not been stipulated in the terms of reference, used to manage the aspects of the Nuclear Engineering SCEP.</i></p> <p><i>At the time of 331-8 applicability, it was required that each year's Safety Culture Enhancement Plan and all Safety Culture Assessment results were to be kept as permanent records. In reviewing the QRL applicable at that time, it was confirmed that the records have not been indexed and archived at the time when 331-8 Rev 0 was enforced</i></p> <p><i>In light of the anomalies noted in the current revision of the NOU Nuclear Safety Management Programme, withdrawing 331-8 Rev 0, The Nuclear Engineering Safety Culture Enhancement and replacing it with 331-499 Rev 1, Nuclear Engineering Safety Culture and Human Performance Committee Meeting Terms of Reference may potentially have weakened the process required demonstrate Safety Culture Programme implementation.</i></p> | Nuclear Engineering |
| AU 39424-018 QA | <p><b><i>It is uncertain how often the NE Safety culture plans for the period 2017 to 2019 have been updated since no revision/version control has been applied for NE SC and HP plan</i></b></p> <p><i>One version of a plan was provided for each financial year for the period 2017-2019. Although a status column had been added and presumably updated, there was no further indication of the plan being updated such as revisions/ versions or date annotation to suggest multiple updates. As a result, it is difficult to demonstrate that the plan has been updated periodically since there is no indication when plans were initiated and subsequently updated.</i></p>   | Nuclear Engineering |
| AU 39424-019 QA | <p><b><i>There is potential risk that the Nuclear Engineering Safety Culture and Human Performance Committee may not meet the due date of end of March for completing the self-evaluation whereby its performance and effectiveness for the period April 2019 to March 2020 will be assessed.</i></b></p>   | Nuclear Engineering |

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#### 4.5.17 Detailed Effectiveness Review

| Date created           | Number        | Description   | Resolved/ Requires attention/ Not applicable |
|------------------------|---------------|---|--|
| <b>Nonconformities</b> |               |   |  |
| 2016/11/25             | CR 95398      | QANC: Assessment and measurement of the Nuclear Safety Culture (NSC) strength is not performed consistently within the KOU business areas as required.  | Requires attention<br>See items listed below |
|                        |               | 1. Annual self-assessments of NSC has not been implemented consistently across the KOU (Nuclear Commercial; Nuclear Project Management , Nuclear Engineering and Nuclear Support)                       | Requires attention<br>AU 39424-003 QA        |
|                        |               | 2. KPIs related to NSC have not been defined or implemented consistently across the KOU to gauge the strength of NSC (Nuclear Engineering, Nuclear Commercial)  | Requires attention<br>AU 39424-002 QA        |
|                        |               | 3. An annual Safety Culture Council meeting at KOU level which includes all Functional Areas (FAs) has not taken place for 2015 / 2016  | Requires attention<br>AU 39424-004 QA        |
| <b>OBSERVATIONS</b>    |               |   |  |
| 2016/11/25             | AU36318-001QA | A consolidated set of NSC safety indicators have not been defined at KOU level to holistically make visible weakness within the functional areas which may impact on KNPS safety management objectives. | Requires attention<br>AU 39424-002 QA        |
| 2016/11/25             | AU36318-002QA | R106 QA OBS: Nuclear Safety Culture (NSC) initiatives related to NSC plans across functional areas are not holistically assessed due to the KOU level committees and forums not being implemented.      | Requires attention<br>AU 39424-004 QA        |
| 2016/11/25             | AU36318-003QA | R106 QA OBS: 3. Anomalies have been noted relating to the compilation of 238-28 and the interpretation of requirements  | Requires attention<br>AU 39424-001 QA        |

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| Date created         | Number   | Description  | Resolved/ Requires attention/ Not applicable          |
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| <b>LEGACY ISSUES</b> |          |  |   |
| 2013/10/25           | GC 78534 | QAObS: There is no clear definition as to what constitutes NSC KPI's   | Resolved  |
| 2013/10/25           | GC 78527 | QAObS: The term SCEP is being used interchangeably to describe both the programme and the plan   | Resolved  |
| 2013/10/25           | GC 78532 | QAObS: There is no evidence to indicate that any corrective actions stemming from the 2010 Nuclear safety culture survey had been implemented within the KOU.  | Requires attention-AU 39424-007 QA                    |
| 2013/10/25           | GC 78530 | QAObS: There is currently no oversight NSC committee within the KOU.   | Requires attention AU 39424-004 QA                    |
| 2013/10/25           | GC 78541 | QAObS:The CA 30513 tracking the safety culture survey project does not reflect the current status of the listed actions. Examples are PR 107 1290773 has been closed on SAP and replaced with PR1071349659,and it also does not reference the Letter K-209                   | Not applicable  |
| 2013/10/25           | GC 78525 | QAObS:There were certain SCEPs (plans) that did not have a revision on them (change control).  | Requires attention AU 39424-010 QA<br>AU 39424-018 QA |
| 2013/10/31           | GC 78648 | QAObS:There is a lack of guidance as to when a full rollout of the requirements of 238-28 is required or when only specific elements are required to be adopted  | Requires attention AU 39424-003 QA                    |
|                      | GC 78545 | NONCONFORMITY DESCRIPTION. There is no formal training programme for nuclear safety culture within the KOU. CRITERIA DESCRIPTION: 238-28 Rev 0, para 8.1.3 states "More detailed safety culture training and awareness shall be given to personnel who<br>OBJECTIVE EVIDENCE | Not applicable  |
|                      |          | 1. There is no training programme available at KNPS or the KOU BA's.<br>limited training to their staff based on their interpretation of what is required.   | Not applicable  |
|                      |          | 2. There are only certain elements of nuclear safety culture training available, such as HP training NPM presents  | Not applicable  |

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