

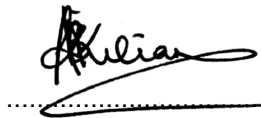
	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-1

CHAPTER 10: MANAGEMENT SYSTEM

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Author declaration:

I declare that appropriate diligence and quality assurance was applied in the compilation of this report. As such I am confident in the results here described and the conclusions drawn.



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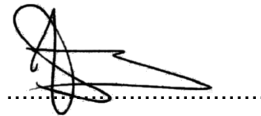
I declare that this report has undergone independent peer review by myself, that comments were addressed to my satisfaction, and that as such, it is considered fit for publication.



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 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-2

AMENDMENT RECORD			
Rev	Draft	Date	Description
0		April 2015	New chapter.
0a		June 2026	Chapter updated and translated to the latest template.
0b		June 2026	Minor editorial corrections made.
0c		August 2026	NNR comments addressed.

	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-3

EXECUTIVE SUMMARY

The main purpose of Chapter 10 is to present a summary of the management system and oversight activities that were applied during the development and update of the TSSR taking into consideration the quality and safety requirements contained in RD-0034.

As compared to the original compilation of the Thyspunt Site Safety Report (TSSR) which was outsourced holistically to a team of specialist consultants, the update of the TSSR, Chapter 1; 2; 3; 4; 5.1; 6; 7; 8; 9; 10; and 11 were developed or updated inhouse by Eskom. Eskom appointed SRK, PRDW and the Council for Geoscience (CGS) to update Chapter 5 (Site Characteristics) of the DSSR. The three companies are accredited in terms of ISO 9001:2015 and qualified in terms of the safety and quality classification system in RD-0034 (National Nuclear Regulator, 2008). Details of quality assurance activities are contained in the project quality plans (PQPs) as well as Quality Control Plans (QCPs) accepted by Eskom prior to commencement of any work. The update of the TSSR to address NNR comments is performed using Technical Specification for the SSRs (Eskom, 2014e; Eskom, 2022). All work was performed using approved method statements and risks identified have been addressed accordingly in line with their risk ratings. The work is carried out under the Nuclear Engineering management system (Eskom, 2025b) which is based on Eskom policies, strategies and standards.

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-4

CONTENTS

10	MANAGEMENT SYSTEM	7
10.1	Introduction	7
10.1.1	Purpose and Scope	9
10.1.2	Terms and definitions	9
10.2	The Organisation	9
10.3	Management System Documentation.....	12
10.3.1	Documentation and Records Management	13
10.4	Safety and Quality Classification	13
10.5	Management Responsibility.....	15
10.5.1	Management Commitment	15
10.5.2	Safety Culture	16
10.5.3	Responsibility and Authority	17
10.5.4	System Planning and Objectives	21
10.6	Human Resource Management.....	21
10.6.1	Eskom.....	22
10.6.2	SRK Consulting	22
10.6.3	Council for Geoscience Nuclear Geo-Hazards Group	22
10.6.4	PRDW.....	22
10.6.5	Competence, Training and Awareness.....	23
10.7	Procurement.....	23
10.7.1	Qualification of Suppliers	23
10.8	Project and Contract Management	25
10.8.1	Project Management	25

	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-5

10.8.2	Contract Management.....	25
10.8.3	Communication.....	25
10.9	Product Realisation	26
10.9.1	Product/Service Specifications	26
10.9.2	Supplier Processes.....	26
10.9.3	SRK	27
10.9.4	The CGS-NGG	27
10.9.5	PRDW.....	28
10.9.6	Clarifying Requirements through Working Groups	28
10.9.7	Maintaining Customer Intelligence and Validation	30
10.9.8	Peer Reviews	30
10.9.9	Site Visits.....	31
10.9.10	Workshop Attendance	31
10.9.11	Working Meeting Attendance.....	31
10.9.12	Integration of Information and Traceability	31
10.9.13	Customer Property	32
10.9.14	Preservation of Products	32
10.9.15	Monitoring and Measuring Equipment.....	33
10.10	Measurement, Analysis and Improvement.....	33
10.10.1	Customer Satisfaction	34
10.10.2	Assessments and Audits	34
10.10.3	Monitoring and Measurement of Processes	35
10.10.4	Verification and Validation (V&V) of Modelling and Simulation of Siting Related Processes.....	36
10.10.5	Monitoring and Measurement of Product.....	36

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-6

10.10.6	Environmental Management.....	37
10.10.7	Security.....	37
10.10.8	Improvement.....	37
10.10.9	Control of Non-conforming Products	38
10.10.10	Corrective and Preventive Action	38
10.11	Conclusion.....	38
10.12	References	40

TABLES

Table 10. 1:	List of updated chapters/sections completed by Eskom/outsourced and safety/quality level of outsourced chapters/sections.....	7
Table 10. 2:	SSR Safety and Quality Classes	14
Table 10. 3:	SSR Development Working Groups	29

FIGURES

Figure 10. 1:	High level NSS link to overall NOU structure.....	10
Figure 10. 2:	Original TSSR Project Organisation	11
Figure 10. 3:	Updated Overall TSSR Project Organisation.....	12
Figure 10. 4:	Example of the Supplier Qualification Interactions	24

APPENDICES

Appendix 10. A:	NSS Value Chain.....	44
Appendix 10. B:	SRK High Level Process Chart	45
Appendix 10. C:	PRDW Process Diagram – Update Section 5.9 of TSSR Rev 0.....	46
Appendix 10. D:	CGS NGG Process for Geological Investigations	47
Appendix 10. E:	SSR Oversight Activities.....	48

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-7

10 MANAGEMENT SYSTEM

10.1 Introduction

The purpose of this chapter is to present the management system that was employed during the preparation of the TSSR including its update.

Following the review of the TSSR Rev 0 by the NNR, Eskom updated the TSSR to address NNR comments and to align with latest data, local requirements and international best practices. To perform the update, Eskom employed a different strategy as opposed to the original TSSR (TSSR Rev 0) whereby all the chapters were updated by an external team of consultants/contractors appointed by Eskom. For the update of the TSSR, some of the chapters/sections were updated by Eskom internally and some of the sections/chapters were outsourced to a team of specialist's consultants/contractors. **Table 10. 1** provides a list of updated chapters/sections completed by Eskom and those that were outsourced, including the safety and quality level in accordance with RD-0034 (National Nuclear Regulator, 2008) at which the outsourced services were procured.

Table 10. 1: List of updated chapters/sections completed by Eskom/outsourced and safety/quality level of outsourced chapters/sections

Chapter/ Section	Chapter/Section Description	Author	Safety / Quality Level
1	Introduction	Eskom	L3, Q3
2	Legal and Regulatory Basis		L3, Q3
3	Overview of Planned Activities		L3, Q3
4	Site Investigation Approach		L3, Q3
5.1	Geography and Site Location		L4, Q3
5.2	Monitoring	SRK Consulting	L4, Q3
5.3	Ecology		L3, Q3
5.4	Demography		L3, Q3
5.5	Land and Water Use		L3, Q3
5.6	Adjacent Sea Use		L3, Q3
5.7	Nearby Transportation, Industrial and Military Facilities – External Man-made hazards		L2, Q2
	Nearby Transportation, Industrial and Military Facilities – Civil Infrastructure and Installations		L3, Q3
5.8	Meteorology	PRDW	L3, Q3
5.9	Oceanography and Coastal Engineering – Flooding from the Sea		L1, Q1
	Oceanography and Coastal Engineering – Availability of Cooling Water, Thermal Plume Dispersion		L3, Q3
5.10	Hydrology and Hydraulics	SRK Consulting	L3, Q3
5.11	Geohydrology		L4, Q3

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-8

Chapter/ Section	Chapter/Section Description	Author	Safety / Quality Level
5.12	Water Supply		L4, Q3
5.13	Geology – Surface Faults and Rupture, Ground Motion	Council for Geoscience	L1, Q1
	Geology – Regional Ground Motion, Subsurface Instability and Subsidence, Local Fault Studies, Fault Corridor Investigations (Preliminary Fault Characterisation), Marine Terrace Studies (Marine Terrace Investigations (Preliminary Fault Characterisation), Syntaxis Studies		L2, Q2
	Geology – Offshore Surveys, Site Response Investigations (Field Investigations)		L2, Q2
	Geology Data Gathering - Fault Corridor Investigations (Planning and Fieldwork, Drilling and Excavation, Sampling for Dating), Regional Coastal Marine Platform Study (Planning and Fieldwork / Sampling), Marine Terrace Investigations (Planning and Fieldwork, Drilling, Sampling for Dating), Stress Data Analysis		L3, Q3
5.14	Seismic Hazard – Site Characterisation for Ground Motion Response,		L1 / QL1
	Seismic Hazard – Bedrock Ground Motion Characterisation, Site Response Investigations (Interpretation), Refinement of a Seismic Catalogue)		L2, Q2
	Seismic Hazard – Site Response Investigations (Field Investigations)		L3, Q3
5.15	Geotechnical Characterisation	SRK Consulting	L3, Q3
6	Evaluation of External Events	Eskom	L2, Q2
7	Potential Radiological Impact on the Public and the Environment		L2, Q2
8	Emergency Planning		L2, Q2
10	Management Systems		L3, Q3
11	Conclusions		L3, Q3

The scope of this work was executed under the Nuclear Analysis and Siting Studies Department (NAS) and the group Nuclear Siting Studies (NSS). NAS reports to Nuclear Engineering, which in turn, reports to the Nuclear Operating Unit (see **Figure 10. 1**).

Eskom (NSS Group) contracted SRK Consulting, the Council for Geoscience (CGS) and PRDW Consulting Port and Coastal Engineers (PRDW) to perform the updating of the TSSR under three separate contracts. This work was overseen by Eskom under Nuclear Engineering Management Systems (Eskom, 2025b).

All requirements (i.e. safety, quality, environmental, security, economic etc.) needed for the realisation of the TSSR were integrated into the contracts awarded

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-9

to the three entities and was achieved through quality planning, safety, health and environmental plans, and method statements. All interfaces were managed through formal Employer Supplier contract mechanisms. The requirements of RD-0034 (National Nuclear Regulator, 2008) with safety and quality culture were used as the cohesive elements to bring together the management systems based on ISO 9001:2015 (International Organisation for Standardization, 2015).

10.1.1 Purpose and Scope

This chapter describes the integrated quality management and safety system of the Eskom NSS and of each of the main contractors, namely SRK, PRDW and the CGS used in the update of the TSSR.

The scope of this chapter includes the interactions between Eskom NSS, its greater Eskom environment and each of its contracted suppliers and demonstrates compliance of the integrated management systems (IMS) with the NNR requirements stipulated in RD-0034 (National Nuclear Regulator, 2008). The legal and regulatory framework for the overall TSSR is contained in **Chapter 2** of this TSSR.

10.1.2 Terms and definitions

The terms related to management systems used in this chapter are in line with the RD-0034 (National Nuclear Regulator, 2008), ISO 9001 (International Organisation for Standardization, 2015) and the Eskom Nuclear Sites Glossary of Definitions, Terms and Abbreviations (Eskom, 2026d).

10.2 The Organisation

The TSSR was updated under the NOU within the Nuclear Engineering Business Area and under the Nuclear Engineering management system (Eskom, 2025b) (see **Figure 10. 1**). NSS group, under NAS is responsible for the overall update of the TSSR as the custodian of the siting and site evaluation activities within the NOU. The group is supported by a project manager assigned to this activity from the Nuclear Project Management (NPM) organisation within the NOU.

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-10

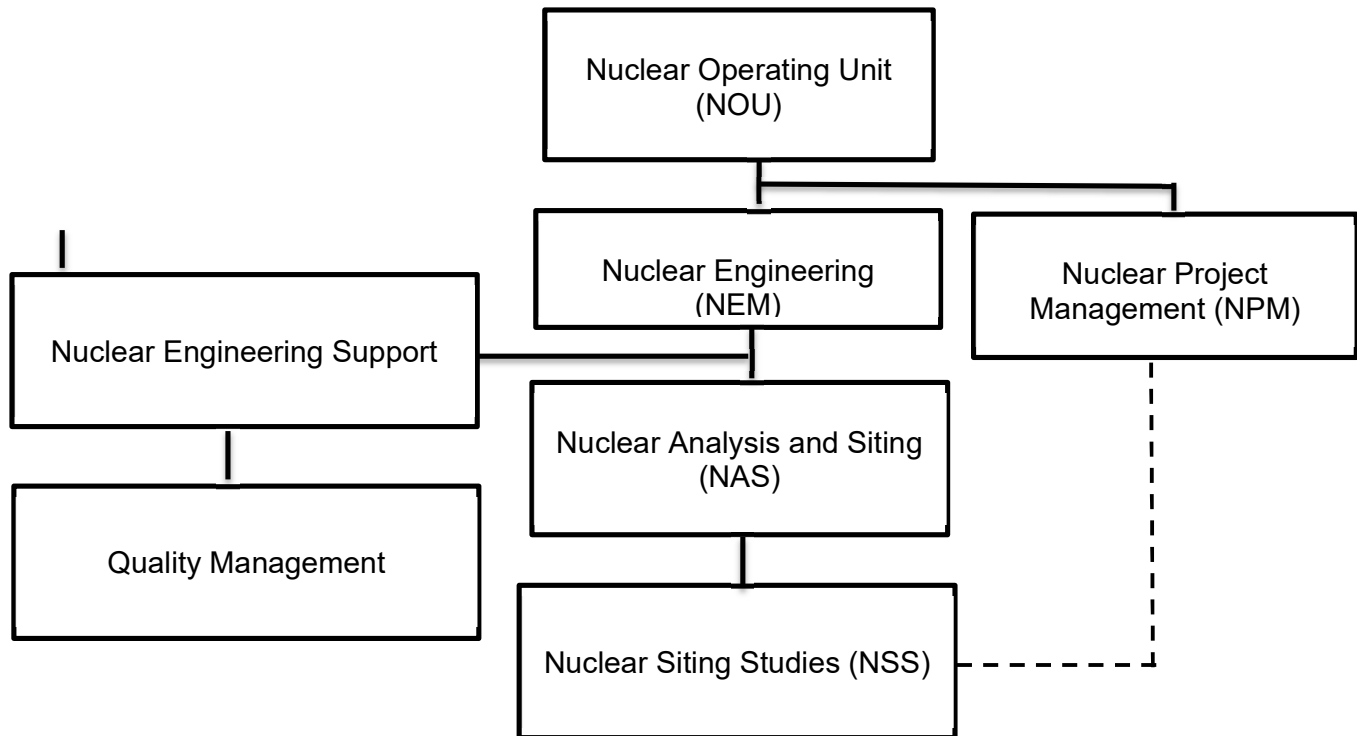


Figure 10. 1: High level NSS link to overall NOU structure

The Project Manager is appointed through the Nuclear Siting Studies (NSS) group to manage the contractors and resources appointed for the realisation of the technical information required and the compilation thereof into the TSSR. The TSSR Development Process Owner within the NSS manages the review and acceptance of the SSR to its final state. The acceptance review is coordinated within NSS with technical support acquired from the overall NOU resources depending on the subject area. Quality remains independent from the project execution organisation.

The contractors on the project were initially SRK Consulting and the CGS-NGG (**Figure 10. 2**). Later, during the update of the TSSR, PRDW was awarded a separate contract to update **Section 5.9** (Oceanography and Coastal Engineering). Therefore, the update of the TSSR following the initial reviews of the TSSR by the NNR was done under three separate contracts (namely, CGS; PRDW and SRK) under the Nuclear Engineering Management System (Eskom, 2025b) (refer **Figure 10. 3**).

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-11

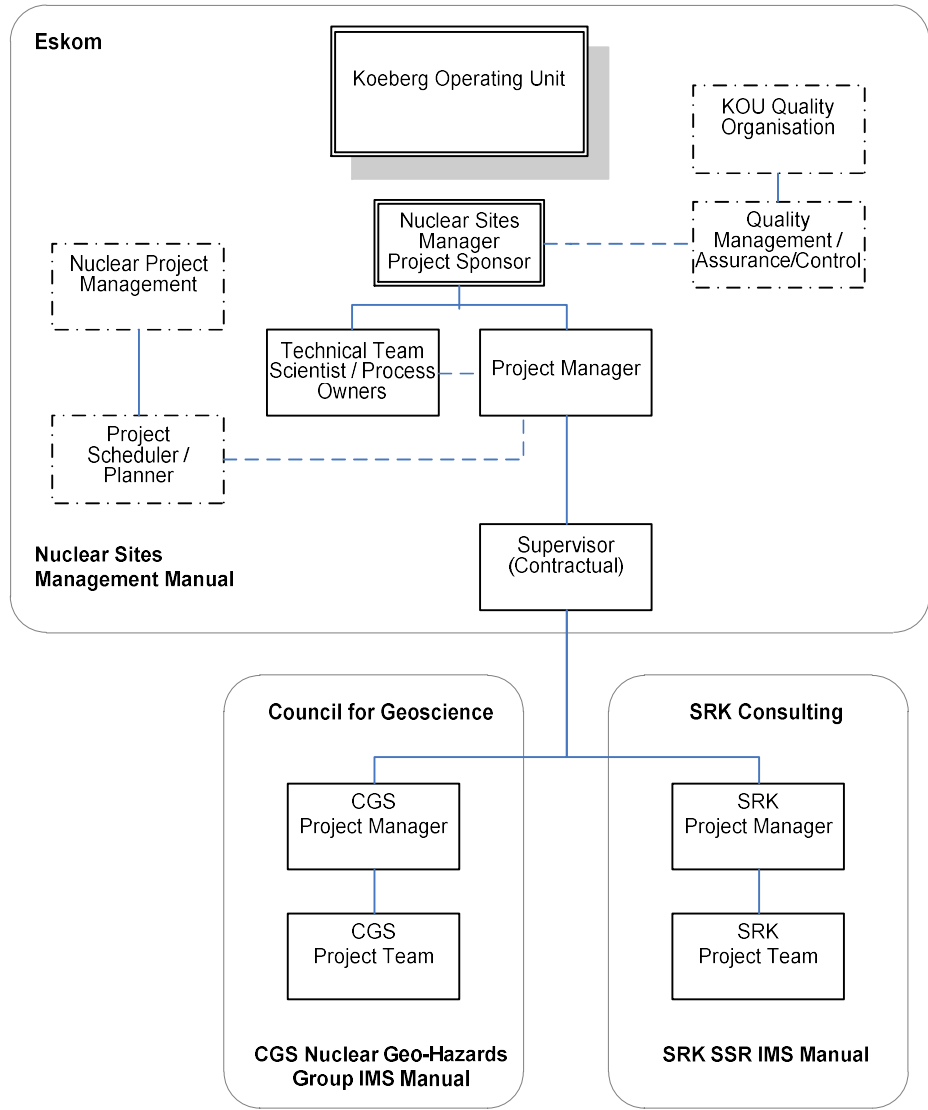


Figure 10. 2: Original TSSR Project Organisation

	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-12

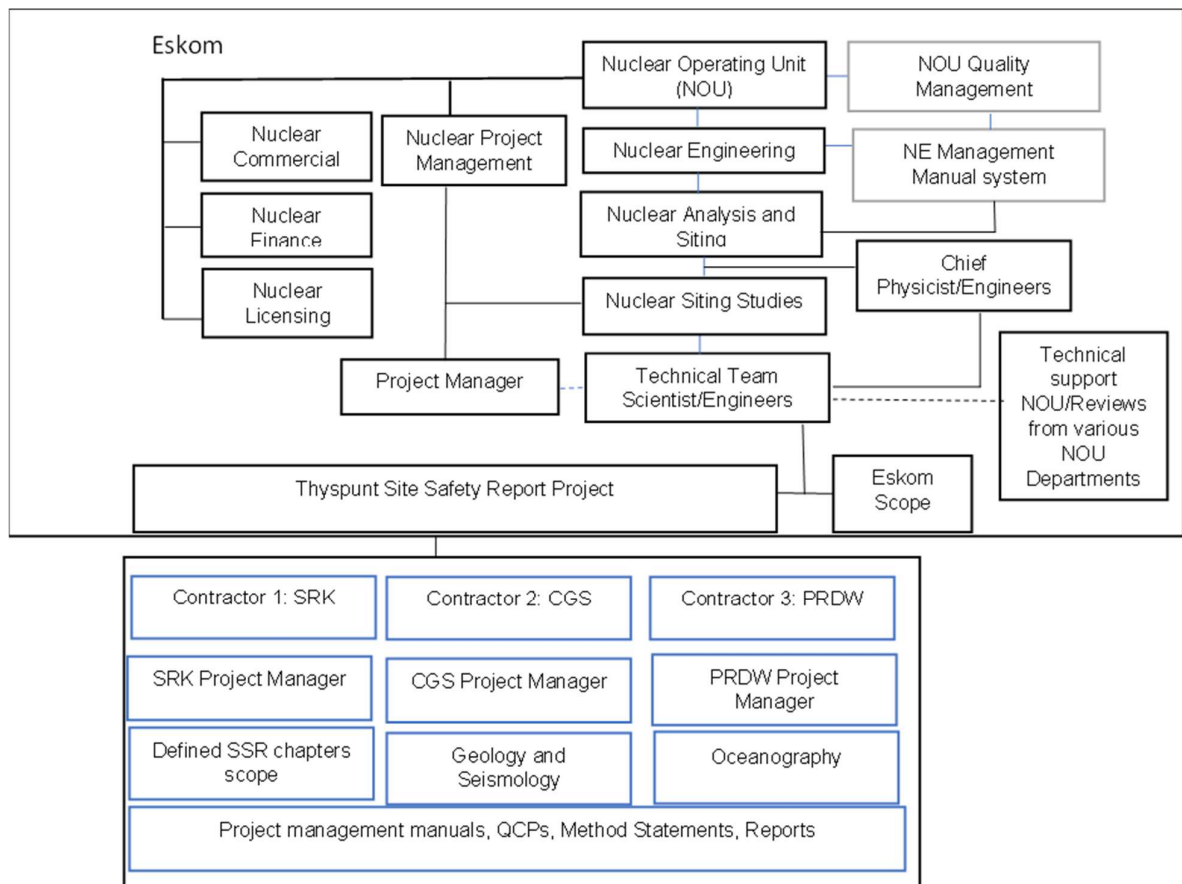


Figure 10. 3: Updated Overall TSSR Project Organisation

The high-level siting value chain presented in **Appendix 10. A** illustrates that the TSSR development was managed as a project under the Site Qualification process of the value chain.

10.3 Management System Documentation

An entire set of governing documents specifically developed for the nuclear environment in Eskom follows on the Nuclear Policy (Eskom, 2024f). The management system documents with applicability to the NOU are mainly notated by the prefix number '238'. These documents interpret corporate policy for deployment into Eskom's nuclear environment and form the basis of the system that was based on ISO 9001:2015 (International Organisation for Standardization, 2015).

The Eskom Nuclear Policy 32-83 (Eskom, 2024f) governs Eskom's nuclear environment, including prospective new build. Specific business and nuclear objectives and priorities are cascaded from the Nuclear Operating Unit (NOU) into

	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-13

each business area (BA) and departments' key performance areas (KPAs). Specific requirements for the TSSR development are cascaded to the suppliers and managed through the contracts. The update of the TSSR was performed under the Nuclear Engineering Management system (Eskom, 2025b). Each contractor/supplier compiled a quality plan, which serves as the basis for the quality assurance actions to be performed on the work.

10.3.1 Documentation and Records Management

All NAS documents and records are uniquely identifiable either through a unique number and/or a fixed relational structure within a unique number. Documents and records transference between the NSS and its suppliers are controlled under a transmittal note system.

The appointed contractors complete their work according to the processes identified in each of their management systems as documented in their integrated management system manuals (Council for Geoscience, 2013a; PRDW, 2018; SRK Consulting, 2023). Their manuals describe the documents, over and above the Eskom documents, that were used within their organisations and how their documents and records were controlled based on their systems and procedures. All the suppliers' management systems are ISO 9001:2015 certified.

The appointed contractors (specialists) complete their work according to the Technical Specifications for Site Safety Reports as provided by Eskom (Eskom, 2022). All activities were carried out in terms of the appropriate quality and safety classification (Eskom, 2023b), see Section 10.4 below.

10.4 Safety and Quality Classification

The impact of quality and safety were considered in all activities completed for the development of this TSSR. The NSS developed and applied a procedure for Safety and Quality Classification of SSR related Products and Processes NSIP01432 (Eskom, 2023b).

Table 10. 2 provides an overview of the safety and quality classes categorised by the NSS and their relation to RD-0034 (National Nuclear Regulator, 2008).

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-14

Table 10. 2: SSR Safety and Quality Classes

RD-0034	Safety and Quality Class	RD-0034 Description	Minimum Quality Requirements	Supplier Quality Level
Level 1	A	High importance to nuclear safety (direct influence on the safety performance of the nuclear installation)	Comply with ISO 9001 (International Organisation for Standardization, 2015) or equivalent + nuclear specific processes / codes / standards applied + IMS which integrates safety management system and safety culture	Q1 (238-101)
Level 2	B	Important to nuclear safety	Comply to ISO 9001 (International Organisation for Standardization, 2015) or equivalent + nuclear specific processes / codes / standards applied	Q2 (238-102)
Level 3	C	Not important to nuclear safety (but related to a license application for, or the operation of, a nuclear installation)	Comply with ISO 9001 (International Organisation for Standardization, 2015) or equivalent or Eskom accepted programme related to the product or activity, but based on ISO 9001 (International Organisation for Standardization, 2015) principles.	Q3 (238-103)
-	D	No direct or indirect impact on the safety of SSC of proposed plant	Eskom accepted programme related to the product or activity but based on ISO 9001 (International Organisation for Standardization, 2015) principles.	Q3

The safety classification aligns with the potential consequences that erroneous data/modelling/assessment generated during the development of the SSR could have on the safety of the nuclear installation and the severity of such an event. The broader intent of nuclear safety has subsequently been considered to recognise the potential impact of erroneous data and conclusions not only on the plant, but also on public safety through for example information to support the development of a Nuclear Emergency Plan.

The evaluation of an activity, its processes and sub-processes and data sets was completed by a work team that consists of suitably qualified persons with applicable knowledge, skill and experience for each field assessed. The outcome of the classification of each section is included in the Technical Specification for Site Safety Reports, NSIP01388 (Eskom, 2022). The classification exercises resulted in the suppliers, SRK classified as a Safety Level 2, Q2 and the CGS-NGG and PRDW being classified as Safety Level 1, Q1 suppliers. The classification was mainly driven by the following activities:

- the CGS-NGG was responsible for characterising the geology and

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-15

seismology which included the seismic hazard analysis study which is key to the identification of any potential fatal flaw on the site. Seismic events (if not adequately characterised) could lead to accidents that are beyond the design basis of the nuclear installation.

- PRDW was responsible for the Oceanography and Coastal Engineering studies which include flooding hazards (e.g. Tsunami hazard). If not properly characterised, the terrace height might not be suitable for the potential tsunami hazard for the site, hence this, and a combination of other hazards (e.g. seismic events), could lead to accidents that are beyond the design basis of the nuclear installation.
- SRK was responsible for the overall site characterisation section of the Site Safety Report except for the Geology, Seismology and the Oceanography chapters. Although this includes external events characterisation (e.g. ambient temperature, rain, wind, etc.), these events are not considered to impact the site and its environs in such a way that a beyond design accident could be experienced.

10.5 Management Responsibility

10.5.1 Management Commitment

Eskom's Nuclear Policy 32-83 (Eskom, 2024f) commits senior management to the safe, controlled and responsible use of nuclear power and nuclear technology. It specifically instructs that an integrated management system be implemented, that considers safety, quality, health, environmental, and economic elements, to ensure that these aspects are properly considered in all its nuclear activities. This policy is authorised by the Chief Executive Officer of Eskom Soc. Ltd.

The Nuclear Division Integrated Management System Description (Eskom, 2026c) was created to convey the philosophy, structure and requirements of an IMS to comply with the requirements of the RD-0034 (National Nuclear Regulator, 2008). It served as a basis for developing and implementing the Nuclear Safety and Quality Manual (Eskom, 2023a) which is updated and improved and commits management at different levels to adhere to the Eskom and NOU/KOU policies and standards and to implement and improve the processes required to maintain an effective management system.

Management review committees exist on several levels within the NOU, and the implementation is directed by a KOU standard, Management Reviews (Eskom, 2024d).

Eskom's procurement requirement for suppliers to implement a suitable and current management system forms part of the contract documentation. The KOU further requires from suppliers in the nuclear environment that the requirements of RD-0034 (National Nuclear Regulator, 2008) be implemented following a

	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-16

graded approach. The requirements for Safety Level 1 and Safety Level 2 suppliers are captured in procurement specifications 238-101 (Eskom, 2024a) and 238-102 (Eskom, 2024b) respectively. SRK; PRDW and the CGS-NGG describe their top managements' commitment in their respective management manuals (SRK Consulting, 2023; PRDW, 2018; Council for Geoscience, 2013a).

10.5.2 Safety Culture

The NOU Safety, Health, Environmental and Quality (SHEQ) policy (Eskom, 2026b) portrays commitment from the highest level of nuclear management within Eskom on these matters.

A Safety Culture Enhancement Programme (SCEP), 238-28 (Eskom, 2024e) was developed for the Koeberg Operating Unit which includes the NSS. The Safety Culture Enhancement Programme, 238-28 (Eskom, 2024e) was used for the overall implementation of the safety culture programme.

Safety culture enhancement activities form part of discussions during monthly Safety Meetings and are used as an opportunity to create awareness, education and communication. The Minutes of Meetings capture the specific actions and topics.

NSS's activities are additionally informed by Operating Experience (OE) and safety messages from the KOU. The consultants are also provided with opportunities to invite Eskom subject specialists for OE and safety awareness presentations as part of their SCEP.

It is required of Safety Level 1 suppliers to the NOU to establish a SCEP in their own organisations. Although only the CGS-NGG was originally classified as a Safety Level 1 supplier, it was accepted that the implementation of a Safety Culture (SC) would be a common requirement for the project to ensure the highest level of confidence in the SSR development processes. Hence, SRK, although classified as a Safety Level 2 supplier also implemented SC principles. SRK and the CGS-NGG participate in Eskom KOU SCEP activities. PRDW was subsequently appointed as a Safety Level 1, Q1 supplier during the update of the TSSR and thus appropriate supplier qualification as well as safety level requirements which includes SCEP were implemented by PRDW.

The CGS-NGG implemented a SCEP, CGS Report 2010-0192 (Council for Geoscience, 2013b) as described in their management manual (Council for Geoscience, 2013a) and had their safety culture independently assessed (Council for Geoscience, 2013c) to determine its status and opportunities for improvement.

SRK as a level 2 activity supplier did not have the requirement to implement a safety culture enhancement programme in terms of RD-0034.

	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-17

10.5.3 Responsibility and Authority

Eskom retains overall responsibility and authority for its nuclear activities including outsourced functions. The KOU management system interprets corporate policy for deployment into Eskom's nuclear environment and contains a description of the responsibilities within the unit.

The roles and responsibilities as well as the delegation of authority for the development and review of this SSR are defined in the management manuals. The main responsibilities are described in the paragraphs below which provide an overview of the responsibilities in terms of the development of the TSSR.

Eskom

The Group Executive (Generation)

The Executive Officer is accountable to the Group Chief Executive, Eskom, for the management and safe conduct of all Eskom's nuclear activities.

Chief Nuclear Officer (KOU)

The Chief Nuclear Officer (CNO) is accountable to the Group Executive (GE) (Generation) for the safe conduct of all nuclear activities associated with the lifetime operation of Koeberg Nuclear Power Station, and any subsequent Nuclear Installations, through the implementation of the Nuclear Build programme as required. This includes:

- the acquisition of sites for future nuclear installations.
- compliance with all nuclear programme-related licenses and regulatory authorisations issued to Eskom, assigning responsibilities for compliance to specific designations.
- establishment of the appropriate divisional integrated management system and organisation structure to achieve the safety and quality objectives.

Senior Manager (NE)

The Senior Manager (Nuclear Engineering), accountable to the CNO, is responsible for the safety of Koeberg Power Station and nuclear build engineering through the custodianship of the design basis. This includes:

- maintaining the design basis, safety case, site safety report, maintenance basis and operating technical specifications for Koeberg;
- development of engineering specifications, classifications, and engineering support to supply chain activities. This includes physical verification activities when required;
- recommendation when safety improvement to, or refurbishment of, nuclear generation assets is required (capacity expansions or life extensions);

	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-18

- the provision of an accident management strategy.

For future new nuclear build:

- conducting siting studies and development of the SSR;
- providing engineering consulting and advisory services to other areas of Eskom involved in new nuclear build activities.

Nuclear Siting Manager (NSS) (Project Sponsor)

Responsibilities of the Siting Studies, the Manager include:

- overall development of this SSR;
- ensuring that goals, strategies, plans and objectives defined for the management system are achieved as defined in the procedures;
- providing the equipment, infrastructure and working environment to enable the work to be carried out,
- annual reviews to assess personnel requirements, establishing job profiles/descriptions, selection of staff based on qualification and experience using approved human resource processes, specific qualification requirements for critical or unique job categories, establishing training plans;
- fostering a strong safety culture and open communication.

Project Manager

The Project Manager is responsible for:

- ensuring the delivery of this SSR by the planning and coordination of all activities;
- ensuring that the authority and responsibilities of the persons and organisational units performing activities affecting quality and/or nuclear safety are clearly established and defined in writing in the contracts between NSS and SRK; NSS and CGS-NGG;
- acting as a main interface between NSS and the various suppliers and sub-suppliers;
- providing a single-point of contact and information;
- monitoring the project against scope, cost and time delivery requirements.

Technical Advisors(s)

Scientists from the NSS's Technical and Regulatory Group (TRG), who are responsible for:

- overall scope determination of the project;
- planning and coordination of reviews of areas under their responsibility;

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-19

- close-out of all open issues under their areas of responsibility;
- establishing and monitoring technical requirements;
- compilation of inhouse developed chapters as reflected in **Section 10.1**
- review and approval of supplier personnel and documents (i.e. curricula vitae, processes, method statements and implementation plans);
- process owner for the SSR development and SSHAC process responsible for the coordination of internal and external SSR reviews;
- technical oversight over all activities performed;
- technical and regulatory compliance assurance.

Quality Advisors(s)

Quality Advisors are responsible for quality oversight on all activities, which includes:

- assuring alignment with approved Eskom policies and practices;
- facilitating the common interpretation of safety and quality requirements for the siting environment;
- monitoring quality and safety of the SSR development on and off-site;
- assuring the project follows prescribed processes;
- arranging and participating in supplier assessments and audits;
- ensuring validation of deliverables, including the requirements of NNR RD-0016;
- verifying input from the CGS-NGG, SRK and the NSS to this chapter.

SRK

The Project Partner and Project Manager appointed for this project is responsible and accountable for the quality assurance and safety culture of the services provided and the quality of work produced to ensure the Client's, the NSS's requirements are met in accordance with their IMS.

SRK, originally appointed as a main contractor for the development of this SSR, was responsible for:

- ensuring that goals, strategies, plans and objectives defined for the management system are achieved as defined in the procedures;
- ensuring that the authority and responsibilities of the persons and organisational units performing activities affecting quality and/or nuclear safety are clearly established and defined in writing in the contracts between SRK and their sub-suppliers;
- project management of their contributing activities;

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-20

- quality assurance on all their own and their sub-contractors' activities;
- liaison/interface with the NSS represented by the NSS Project Manager;
- the consolidation of this SSR document;
- organising local and international peer reviewers for their subject areas;
- production and development of all chapters/sections excluding **Sections 5.13** and **5.14** and **Chapter 10**.

SRK was later appointed to perform an update of the TSSR based on NNR comments with focus on Chapter 5 (Site Characterisation), excluding 5.9, 5.13 and 5.14 and Chapters 1; 2; 3; 4; 6; 7; 8; 9; 10 and 11.

CGS-NGG

The CGS-NGG is responsible for geological investigations and management of the SSHAC process and output leading to the completion of the PSHA. This entails the responsibility for:

- ensuring that goals, strategies, plans and objectives defined for the management system are achieved as defined in the procedures;
- project management of their activities related to **Sections 5.13** and **5.14** of **Chapter 5**;
- ensuring that the authority and responsibilities of the persons and organisational units performing activities affecting quality and/or nuclear safety are clearly established and defined in writing in the contracts between CGS-NGG and their sub-suppliers;
- quality assurance on all their own and their sub-contractors' activities;
- liaison/interface with NSS represented by the NSS Project Manager;
- organising local and international peer reviewers for subjects under their responsibility;
- providing input information to **Chapters 6, 10** and **11**;
- production and development of the following sections:
Sections 5.13 (Geology) and **5.14** (Seismic Hazard).

The CGS was appointed again in 2022 to perform a limited update on the TSSR and to address NNR comments. A similar quality and safety oversight was applied to ensure the quality of the product remains acceptable to Eskom.

PRDW

PRDW was appointed to perform a limited update on Section 5.9 (Oceanography) based on comments received from the National Nuclear Regulator and latest monitoring data.

	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-21

10.5.4 System Planning and Objectives

The SSR is a component of a licensing document required in terms of the siting regulations. Over and above the legal and regulatory requirements as addressed in **Chapter 2**, the requirements from the following Eskom entities are considered in determining the objectives and planning the processes (**Appendix 10. A**) for the TSSR development:

- Nuclear Licensing, serving as contact point with the NNR [compliance to siting regulations];
- Nuclear Engineering (NE) main technical lead, providing site characteristics important for plant design, emergency planning zones, Plant Parameter Envelope (PPE), External Hazards Standard, review of the Technical Specifications];
- Environmental Management [interface on EIA, impact of the Nuclear Installation (NI) on the environment and vice versa];
- Finance [approvals, budgeting, payments];
- Procurement [approvals, control of contracting].

The NSS team performs the initial planning for the development of this SSR, defines the requirements for the production processes and the product and appoints the suppliers for production planning and product realisation, whilst the responsibility for overall coordination remains with NSS. The overall siting value chain (**Appendix 10. A**) shows the core processes as site identification, site selection and confirmation, site acquisition, site qualification, site rezoning and site license maintenance and management. SSR development forms part of the site qualification core process. The breakdown of the Site Qualification process (Eskom, 2017) indicates how the production of the SSR is managed through a project that involves contracting and managing suppliers. The lower-level process maps are backed up by process definition and description documents that identifies the process owners, objectives, business rules, etc. and responsibility and communication matrices defining the interface requirements.

10.6 Human Resource Management

Considering the wide scope and complexity of the site characterisation for the development of this SSR, the NSS evaluated the resources available within the organisation and made the decision to outsource the production of the SSR while retaining the functions for the overall development, including review and approval, and the management of the project in-house. The production of the original TSSR was contracted to two main suppliers, SRK and the CGS-NGG, who in turn contracted further to, Eskom approved resources for specialised activities and to perform tasks under the rules and practices of their respective management systems. Each organisation managed their resources within the parameters of its approved management system to fulfil the necessary functions. The contracting

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-22

and sub-contracting of expertise invoked Eskom oversight to retain customer intelligence. Several oversight activities were therefore integrated throughout product realisation.

10.6.1 Eskom

The NSS, as for the whole of the Eskom organisation, applies resource management practices as defined, implemented and verified by Eskom corporate through its Human Resources (HR) business unit (BU). This means that each employee's appointment into a position is based on requirements for that position, formal performance reviews are conducted, and development plans are implemented. Eskom expertise outside of the NSS was selected and appointed for specific tasks, for example the review of a specific technical field or chapter of this TSSR and quality management, assurance and control in the project.

10.6.2 SRK Consulting

To provide the range of technical expertise required for the characterisation of the site and development of this SSR, SRK supplemented their project team with a number of consultants for specialised activities. They form part of the SRK project team and are therefore subject to the requirements of the SRK management system and product realisation processes. The work is carried out in terms of the Eskom accepted project quality plan (SRK, 2025) supported by method statements and quality control plans for each a specific chapter/section.

10.6.3 Council for Geoscience Nuclear Geo-Hazards Group

The CGS-NGG has been performing geological investigations and seismic monitoring for identified Eskom sites since the early 1990s. They embarked on further geological investigations for input to the site Probabilistic Seismic Hazard Analysis (PSHA) following the Senior Seismic Hazard Analysis Committee (SSHAC) Level 3, process.

The CGS-NGG contracts specialised resources to augment their project team. The qualifications and experience of each of these resources are evaluated and Eskom's approval sought before appointment. They form part of the CGS-NGG project team and are subject to the requirements of the CGS-NGG management system and product realisation processes.

10.6.4 PRDW

PRDW operates under an ISO 9001:2015 certified Quality Management System (QMS) for consulting engineering services in the fields of port and coastal engineering, that meets the requirements for a Q2/L2 approved supplier to Eskom for the Thyspunt work. PRDW execute their tasks on the TSSR Section 5.9

	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-23

Update project under PRDW's QMS (PRDW, 2024) whereas the update of the Tsunami hazard study for the Duynefontyn site was done under Q1/L1.

10.6.5 Competence, Training and Awareness

The suppliers' project teams are constituted of already suitably qualified and experienced persons. CVs of the project team and specialists are evaluated by the respective project manager and submitted to NSS technical team for approval of specialised functions. Where necessary, replacement specialists are appointed on the same basis.

The NSS personnel involved are part of the Nuclear Analysis and Siting team and their qualification and training records are available from Nuclear Engineering records. Other Eskom role players are assigned based on their qualifications and experience.

10.7 Procurement

10.7.1 Qualification of Suppliers

SRK Consulting and the CGS were originally selected from the Eskom Approved Suppliers List (ASL). During the course of the project the NNR published requirements document RD-0034 (National Nuclear Regulator, 2008), in terms of Clause 4 of which all parties that are in any way involved in activities important to nuclear safety related to siting, design, manufacture, construction, operation, modification and eventual decommissioning of a nuclear installation, as defined in the NNR's Siting Regulations, are required to develop, introduce and maintain management systems that appropriately comply with the applicable requirements of this RD. Whereas PRDW was initially subcontracted to SRK, subsequent update of the TSSR resulted in PRDW being appointed separately as a standalone organisation with their own quality management system.

Prior to the implementation of the RD-0034 (National Nuclear Regulator, 2008) the suppliers were contracted based on an evaluation of their management system against the requirements of 240-129883544 (Eskom, 2024g) and a previous revision of the NSS Management Manual, GGM0902 (Eskom, 2007).

SRK Consulting had implemented an ISO 9001:2000 compliant quality management system (QMS) since 2006. This system was subsequently revised to comply with ISO 9001:2008 (International Organisation for Standardisation, 2008) and subsequently ISO 9001:2015 (International Organisation for Standardization, 2015).

The CGS opted to ring-fence the NGG and obtain ISO 9001:2008 (International Organisation for Standardisation, 2008) certification for this Group during the course of the project and subsequently ISO 9001:2015 (International Organisation

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-24

for Standardization, 2015).

PRDW was appointed to update section 5.9. This was done under their Quality System Manual (PRDW, 2008) which complies to ISO 9001:2015 (International Organisation for Standardization, 2015). The PRDW QMS requires the development of a Quality Management Plan (QMP), comprising of PRDW Generic and Project Specific Quality Plans (PSQP) (PRDW, 2018; PRDW, 2024). The PSQP describes how the Contract Quality Management Plan requirements of the Eskom specification 238-102 are addressed in PRDW's management system.

The suppliers were assessed by the Procurement Quality Engineering (PQE) group within the Nuclear Commercial (NC) Business Area in the KOU following the requirements of 238-105 (Eskom, 2024c). The diagram in **Figure 10. 4** depicts an example of the interactions with the different Eskom role players for the supplier qualification process.

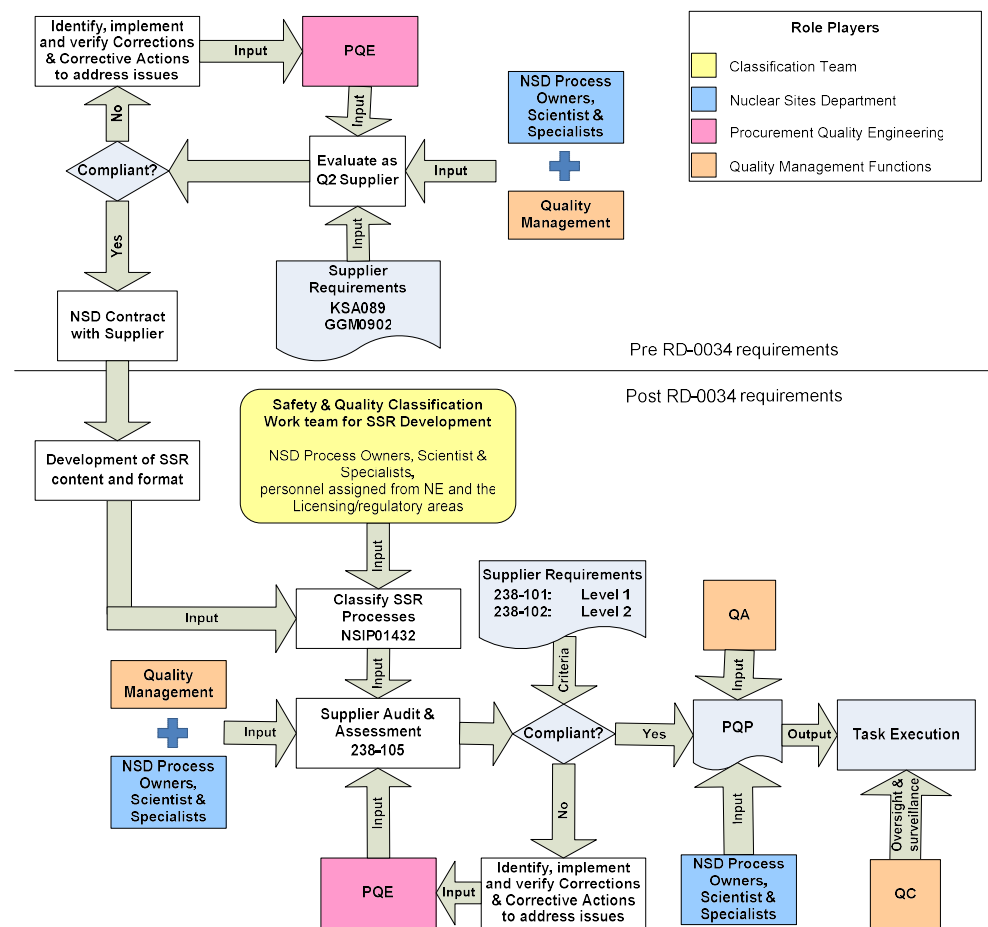


Figure 10. 4: Example of the Supplier Qualification Interactions

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-25

All consultants and specialist resources that augment the main suppliers' teams work to the requirements of the respective main supplier's management system. The classification exercise further indicates that the sub-contracted deliverers of products as distinguished from the mentioned consultants and specialist resources working within the main suppliers' systems, are all found to be operating on a safety and quality level 3 or lower. Eskom is informed of the selection processes, selections are motivated and Eskom retains the right to intervene, if necessary, as in the case of the surveillances at the dating laboratories by Eskom staff supported by an experienced nuclear consultant.

10.8 Project and Contract Management

10.8.1 Project Management

The Eskom NSS team developed processes for the development of SSRs and for managing the project (Eskom, 2017) that produced the TSSR through the services of SRK and the CGS-NGG.

NSS is the overall lead for the development of the SSR and developed a high-level project quality plan (Eskom, 2012b). Interfaces and communication are defined in the contracts.

10.8.2 Contract Management

The NSS Project Manager is responsible for the completion of the project and therefore manages the contracts in accordance with contractual requirements as contained in the NEC and applicable Eskom documentation to ensure:

- financial management according to budget allocations;
- deliverables according to overall schedule and sub-project schedules;
- scope of work according to contracted conditions;
- quality assurance and inspections;
- management of non-conformances and issues to ensure project delivery.

The contracting process was executed within the parameters of Eskom's procurement policies and practices.

10.8.3 Communication

The NSS project manager, with the assistance of the site supervisors or technical team, was responsible for communication requirements with both contractor and ensuring resolution of any problems arising from the project.

The NSS project manager and process owners ensure that both Eskom internal as well as consultant subject matter experts are kept abreast of new regulatory

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-26

developments pertaining to the scope through regular communication.

The consultant project managers similarly ensure that their subject matter experts and sub-consultants/contractors as well as the Eskom NSS process owners are kept abreast regarding developments and progress on the processes used by their various subject matter experts and sub-consultants/contractors.

Interface is facilitated by means of the following:

- monthly/bi-monthly contractor's meetings, attended by the NSS Project Manager, scientists/supervisors and quality advisers;
- monthly progress meetings (NSS with SRK and CGS-NGG);
- ad hoc meetings (where necessary) with the NSS;
- workshops
- weekly and monthly progress reports;
- the NSS project manager as the main point of contact, all information flows through him;
- extensive use of e-mails;
- working groups.

10.9 Product Realisation

10.9.1 Product/Service Specifications

The requirements of this SSR are defined in the SSR Technical Specification (SSR-TS), NSIP01388 (Eskom, 2022). The services required to be delivered from the suppliers are stipulated in their respective procurement contracts.

Comments that are raised during the development and/or review of the TSSR and that have bearing on the Technical Specification, are addressed and all changes reviewed, and ultimately were accepted by independent technical experts within Eskom. A record of the changes to the specification occurring after the Nuclear Build Review Committee (NBRC) approval of the specification is kept. All review comments, their close-out and acceptance are also recorded for all chapters/sections of the SSR-TS (Eskom, 2014e).

10.9.2 Supplier Processes

The sets of requirements from the SSR-TS (Eskom, 2022) and the contracts entail that the supplier has the responsibility to unpack the requirements to implement suitable processes in their own organisations for product realisation. This is endorsed by Eskom through acceptance of the proposals from the supplier, as well as additional details which includes, the scope of work and the use of suitability qualified and experienced personnel to execute the work.

	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-27

10.9.3 SRK

The overall process that SRK implemented is described in (**Appendix 10. B**) and is implemented in accordance with their management system (SRK Consulting, 2023). The high level process is supported by process descriptions, method statements and safety, health and environmental (SHE) plans as appropriate per scientific or engineering field of investigation specified in the SSR-TS (Eskom, 2022) and that they had responsibility for delivering.

SRK appoints the approved specialists into their team to execute the work. The list of specialists together with their CVs are provided prior to commencement of work.

SRK manages their sub-suppliers by means of standard contracts, e.g. New Engineering Contracts (NEC), Engineering and Construction Subcontract (ECS2) and submission to SRK of relevant documents which includes method statements, risk assessments, safety health and the environment documentation and accreditation certificates for approval prior to work commencing.

Work is managed through a detailed project schedule accepted by Eskom and monitored through bi-weekly/monthly progress meetings. The schedule is periodically reviewed and updated during the project and communicated to all specialists and contractors involved in the development and review of this SSR.

Contractors and subcontractors that are ISO 9001 certified may choose to comply with SRK's IMS or to work to their own, but equivalent IMS provided that no conflicts or ambiguities exist and interfacing can happen seamlessly. In addition, method statements and protocols are required to provide more specific detail on the product realisation processes. Where site work is applicable, a Health, Safety and Environmental Management Plan (HSEMP) and a Risk Assessment are established and documented. Safety culture principles and aspects are cascaded down to all contractors and subcontractors involved on the SSR Project. Interfaces between the various processes, whether within SRK or with or between contractors and subcontractors, are clearly indicated in the project programme as well as in respective process charts.

10.9.4 The CGS-NGG

The CGS-NGG was responsible for geology and seismology. The processes are fully described in the Project Execution Plan (Council for Geosciences, 2010) that they implemented, and the management of the specialists contracted onto their team.

As part of the CGS-NGG product realisation processes for the site characterisation certain services such as dating, drilling and velocity tests are contracted out to sub-suppliers. The list is provided to Eskom for review and acceptance prior to commencement of work.

The CGS-NGG develops a detailed project schedule for their activities to produce

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-28

section 5.13 and section 5.14 of the TSSR. This is done in consultation with the NSS who coordinates the requirements with other contractors/specialists and provides input to the CGS-NGG planning. The schedule is periodically reviewed and updated during the project and communicated to all contractors involved in the development and review of this SSR.

Similarly, project management responsibilities are allocated at the CGS-NGG to a project manager who manages internal processes and arranges selection and appointment of team members and sub-suppliers and manages the execution of the project. The CGS high level process is reflected in **Appendix 10. D**.

10.9.5 PRDW

PRDW was initially subcontracted by SRK to develop the oceanography section of the TSSR. Later on, Eskom contracted PRDW to perform a limited update of the oceanography section of the TSSR. PRDW operates under an ISO 9001:2015 certified Quality Management System (QMS) for consulting engineering services in the fields of port and coastal engineering, that meets the requirements for a Q2/L2 approved supplier to Eskom. PRDW executed their tasks on the TSSR Section 5.9 in accordance with the SSR-TS (Eskom, 2022), their generic project quality plan (PRDW, 2018) and project specific quality plan (PRDW, 2024).

PRDW also develops a detailed project schedule in consultation with the NSS who coordinates the requirements with other contractors/specialist and provides input to the overall NSS plans. The schedule is periodically reviewed and updated during the project and communicated to all contractors involved in the development and review of this SSR.

Similarly, project management responsibilities are allocated at the PRDW project manager who manages internal processes and arranges selection and appointment of team members and sub-suppliers and manages the execution of the project. PRDW process is reflected in **Appendix 10. C**.

10.9.6 Clarifying Requirements through Working Groups

In the early stages of the project, several working groups were convened for clarifying requirements and to ensure alignment within the development and production team and to determine positions for addressing stakeholder requirements. The working groups are listed in **Table 10. 3**. The resultant position papers are kept as records, but the positions are written into the SSR-TS (Eskom, 2022).

These working groups were constituted of process owners, subject matter experts from Eskom and other relevant specialists (where necessary).

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-29

Quality assurance data packs consisting of the product, supporting elements, processes followed and controls implemented for the SSR project were compiled and are available in the NSS document management repository.

Table 10. 3: SSR Development Working Groups

Working Group	Scope of responsibility
Potential Radiological Impact on the Public and Environment (PRIPE)	Scope, methods, assumptions and regulatory and technical issues for all siting related Eskom projects to ensure alignment of the site-specific activities, so Eskom can present a single position when interacting with the NNR.
Emergency Planning	Modelling input parameters, meteorology from which emergency zones were estimated.
SSR format	Scope of work required for the SSR, the Technical Specification, interfaces between the SSR and the Safety Analysis Report (SAR)
Regulatory Interpretation	Obtain clarification on applicable local and international standards, to ensure a common understanding of national nuclear regulatory requirements and terms used, to clarify any requirements necessary for the development and maintenance of a strategic reserve of nuclear sites and to ensure coordination and alignment between the different working groups.
Monitoring Programmes	Define the regulations, guides and international best practice relevant to monitoring programmes, define the site-specific characteristics and environmental data that must be monitored to obtain a siting license, and maintain the validity of such a license over the lifetime of the site.
External Hazards	Define the regulations, guides, codes and international best practices in order to identify the types of external hazards that should be assessed as part of the licensing process, to interpret the documents above in terms of the quantification approach to be followed, the minimum standard of models and codes and the monitoring required in order to obtain a siting license.

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-30

Working Group	Scope of responsibility
Nuclear Sites IMS	Interpretation and understanding of the requirements contained in the NNR document RD-0034 (National Nuclear Regulator, 2008), to reach agreement on the safety classification methodology for siting activities, processes and products and to present a position to the NNR, to discuss and agree on the format and content of the Nuclear Sites MS.

10.9.7 Maintaining Customer Intelligence and Validation

Several observation and surveillance activities were performed or arranged by the NSS to maintain intelligence of processes and products of the SSR production. This supported the validation of results. Eskom developed compliance matrixes (**Chapter 2** of the TSSR) to ensure that they understand regulatory requirements, international best practices and the quality of the product when delivered by the consultants.

10.9.8 Peer Reviews

The NSS requires that suitably qualified and experienced, pre-approved peer reviewers be appointed on all the technical disciplines that SRK had the responsibility for.

Independent peer reviewers are therefore appointed by SRK with the NSS's approval for all technical disciplines and sections of this SSR. Reviewers are selected based on international reputation, experience in the relevant discipline, availability and commitment. Where relevant, the reviewers are required to visit the site. A programme for the peer review process is drawn up for each discipline and reports are submitted on reviews carried out.

The CGS-NGG similarly appointed peer reviewers for the Geological Investigations part of the work. This is in addition to peer reviews that form an integral part of the SSHAC Level 3 process as described in the CGS-NGG PEP (Council for Geosciences, 2010). These reviews are implemented within both the Seismic Source Characterisation and the Ground Motion Characterisation Technical Teams. Peer reviewing is continuous for the work of these teams and work is especially tested during the teams' working meetings and in the formal workshops. A Participatory Peer Review Panel (PPRP) is also constructed as part of the process with oversight on behalf of the Client. The role of the PPRP is made clear in the CGS-NGG PEP (Council for Geosciences, 2010).

	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-31

10.9.9 Site Visits

Technical staff from the NSS visits the Thyspunt site and surrounding area to observe and report on work being performed by, or under the supervision of either SRK or the CGS-NGG. Site visit reports are compiled and stored in the NSS record system.

10.9.10 Workshop Attendance

The SSHAC Level 3 process specifies three formal workshops within the process where the client, Eskom, observes the proceedings. The NSS invited relevant other Eskom employees to also attend the workshops.

10.9.11 Working Meeting Attendance

Over and above the SSHAC workshops, technical members from the NSS also attend and observe working meetings of both the Seismic Source Characterisation and the Ground Motion Characterisation technical team meetings. The observation reports are available from the NSS record system.

10.9.12 Integration of Information and Traceability

The NSS, SRK and the CGS-NGG ensure that the sources of any data used in the characterisation of the site and the development of this SSR are traceable and validated for this specific application.

All information, data and documentation used to produce, and resulting from output per activity to deliver the TSSR is sorted into data packs for traceability purposes. The in-process data packs are stored at each supplier's offices according to their management system processes and copies supplied to the NSS for recording within their system until such time that the fully configured complete data and information packs are delivered to the NSS as part of final product delivery.

The procedures for safeguarding all relevant data and information and preservation of the integrity are outlined in the appropriate management.

SRK was originally assigned to integrate all the chapters and sections of the TSSR, with input from the CGS-NGG and input and oversight from the NSS, into this one final report. They appointed a Technical Writer that assisted with the compilation of the TSSR.

Eskom performed the review and acceptance of each section and chapter prior to submission to the NNR.

	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-32

10.9.13 Customer Property

The requirements regarding intellectual property are contained in the contracts.

The suppliers and their sub-suppliers sign confidentiality agreements prior to commencement of any work or access of any confidential information belonging to the employer. Confidentiality agreements are regarded as records and are subject to record control in accordance with the requirements for records management of the KOU (Eskom, 2025a).

The site environment is well controlled in line with Eskom access control requirements. Approvals and permits required for work are obtained by contractors prior to commencement of tasks.

10.9.14 Preservation of Products

The TSSR is considered the final product of this project and being a document is preserved by the NSS control of records processes.

All input data, information and processes and results of analyses are important for the integrity and traceability of the product and are therefore stored in the suppliers' records systems according to the prescriptions in their respective management systems before handing over to the NSS packaged into configured data packs.

The NSS makes use of an EDMS and complies with the 32-6 (Eskom, 2020) requirements for the control of documents and records which has been further cascaded into 238-6 (Eskom, 2025a). This provides further detail on the unique numbering system to ensure retrieval of any document stored electronically, the classification of documents, the different storage media available (EDMS GIS, hardcopy) and the archiving of records.

All organisations involved in the development of this SSR have measures in place to ensure that records are retained to provide evidence of activities affecting quality and safety. These records are retained in such a manner as to ensure that they are readable, complete, identifiable and easily retrievable for the required retention times.

	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-33

10.9.15 Monitoring and Measuring Equipment

The NSS does not own or operate any monitoring and test equipment (MTE), but their suppliers made use of monitoring and measurement equipment. Therefore, the NSS implements oversight of such activities to ensure the process is managed and implemented in accordance with the requirements of the standard (International Organisation for Standardisation, 2008; International Organisation for Standardization, 2015).

SRK, PRDW and the CGS-NGG ensure that procedures are established within their management systems and their sub-suppliers to ensure that tools, gauges, instruments and other measuring and testing equipment used in activities affecting quality are suitable, properly controlled, calibrated and adjusted at specified periods to maintain specified measuring accuracy. These procedures are referenced in the respective quality documents for the different disciplines/organisations.

Certain technical disciplines require field measurement of parameters and on-going monitoring. All equipment used is checked and calibrated to the required level of accuracy before each site visit in accordance with procedures for measuring and test equipment or monitoring protocols. Results are captured and filed according to data management and document and record control processes described in their respective management systems documentation.

10.10 Measurement, Analysis and Improvement

Oversight of SSR activities is performed via the NSS technical specialists for technical and regulatory matters. This includes reviews and scope of this SSR and technical activities and engagement of quality assurance or quality control (QA/QC) personnel to perform monitoring and assessment on the different project activities.

To ensure that the expectations of the NSS are met the following mechanisms are used:

- participation of NSS representatives at the regular bi-weekly meetings of the project team;
- regular communication (electronic or hard copy) on outstanding issues and questions that need consideration;
- early warning meetings to resolve comments, differences and disagreements;
- review of the draft TSSR by NSS prior to finalisation with comments lists produced and saved;
- final review of the TSSR, before submission to the NNR;

	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-34

- incorporation and documentation of comments and recommendations by SRK and the CGS-NGG on the TSSR processes and document;
- site visits by NSS site supervisors and quality personnel documented in site reports;
- the NSS attendance at audits/self-assessments performed by SRK and/or CGS-NGG on sub-suppliers, as observers, to ensure sufficient oversight, with reports provided to NSS EDMS;
- verification of compliance with management system documents and plans.

10.10.1 Customer Satisfaction

All chapters of the TSSR are reviewed by representative specialists nominated by the NE BA who is primarily the end user. The reviewers' acceptance of the chapters is recorded (Eskom, 2014c). For the updated version of the TSSR, records are shown on the front cover of each chapter/section.

To ensure compliance with the requirements set in the SSR Technical Specification (Eskom, 2022), the review of the resultant TSSR is performed by the selected NE personnel familiar with the relevant subject area. The NE BA is the end user of the information, findings and conclusions presented in the TSSR. This review process is formally documented with each comment noted, addressed and closed out by a way of signing off the review sheet or the front cover of the chapter/section. The review report (Eskom, 2014h) is available from the NSS records system. The reviewers' CVs containing their qualifying credentials are also available from the NSS records system.

10.10.2 Assessments and Audits

The NSS is subjected to internal quality and safety audits by Eskom quality auditors throughout the project. Also, throughout the duration of the project, the Eskom NOU, of which the NSS is a part, retained its ISO 9001:2015 certification.

The CGS-NGG performs internal audits by an independent auditor according to the CGS-NGG audit schedule, as part of their management system (Council for Geoscience, 2013a) implementation. The NSS is involved in the resolution of some of the audit findings or recommended areas of improvement to ensure that Eskom requirements are met in any changes to the management system. The CGS; SRK and PRDW are ISO 9001:2015 certified.

Supplier assessments are performed on SRK; PRDW and the CGS-NGG by the KOU PQE Department responsible for nuclear supplier qualifications. Technical representatives from the NSS and quality representatives from NE participated in the supplier requalification audits to RD-0034 (National Nuclear Regulator, 2008) requirements. PQE performed the supplier conformance audits on the three suppliers.

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-35

SRK carries out audits on the subcontracted activities to ensure compliance with their management system requirements. The NSS and NE quality personnel act as observers.

The NSS is involved during the visits to the dating laboratories to act as observer to the independent review completed.

10.10.3 Monitoring and Measurement of Processes

The on-site investigative activities are monitored by NSS and NE quality and technical personnel to ensure safety and quality matters are addressed in a way which satisfies requirements.

Specialists are required to submit risk assessments, method statements and health, safety and environmental management plans to SRK and the NSS for approval before permission for site work is granted.

SRK develops and submits the following documents to the NSS for approval before starting work on site:

- health, safety and environmental management plans for sections requiring site work;
- risk assessments for sections requiring site work;
- project quality plans (PQP) where applicable;
- approved documentation;
- method statements (including process charts);
- monitoring protocol.

The following aspects are monitored:

- use of pre-job briefs and toolbox meetings, when information is given to the site personnel by the supervisor. This includes safety, safety culture, quality information and the expected daily schedule;
- use of personal protection equipment, when applicable (these include safety helmets, gloves, work shoes and protective goggles);
- presence of relevant documentation: processes, plans, procedures, risk assessments and field note books;
- treatment of non-conformities, where applicable;
- efficiency of communication within the team: information about schedule, new risks identified and expected weather conditions;
- use of human performance tools to assist communication and the correct interpretation of verbal messages;

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-36

- activities of the contractor's quality control (QC) personnel: independence from the activity being performed, presence of calibration certificates, preservation and storage of samples, traceability of information;
- correct use of lifting equipment, harnesses, and electrical equipment.

The CGS-NGG develops detailed QCPs for each activity and performs quality monitoring functions during site work, including safety, safety culture and risk assessment. Quality Advisors sign off on all QCPs.

Eskom witnesses not only the daily proceedings of the SSHAC workshops, but also of the technical teams' working meetings. A functionally representative core team from Eskom also attends the daily feedback sessions of the PPRP to the SSC and GMC technical leads and directs assurance questions from the broader Eskom team to the PPRP members, the technical leads or the CGS-NGG Project Manager for clarification. An NNR representative that attended the workshops observed most of these sessions.

TUV-Nord South Africa was contracted by the NSS as independent auditors/assessors of the SSR development by their:

- participation in the CGS-NGG working meetings in Germany and the USA;
- attending the SSHAC level 3 workshops in South Africa;
- performing reviews of documentation of the CGS-NGG and NSS;
- visiting the Thyspunt site to observe activities;
- participating in the surveillances of the international dating laboratories.

The Eskom Assurance and Forensics Department performed oversight on the SSHAC processes to provide independent and objective assurance that contributes visibly to the achievement of Eskom's business strategy and objectives. The results are contained in the combined assurance report (Eskom, 2014f).

10.10.4 Verification and Validation (V&V) of Modelling and Simulation of Siting Related Processes

Based on the requirements of RG-0016 (National Nuclear Regulator, 2016b) a report needs to be submitted for all tasks involving modelling and simulation to demonstrate the implementation of adequate processes for V&V. These reports are reviewed and accepted by the NSS.

10.10.5 Monitoring and Measurement of Product

There are several steps in the final product approval process. All work delivered by the project team members, whether by members of their own organisation or resources contracted, is reviewed by the Technical Writer that also assessed the

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-37

regulatory relevance and compliance of the work presented in the TSSR chapters. The customer, through the nominated reviewers and their teams, then reviews the product and the review processes (Eskom, 2026e) is managed by the NSS process owner to ensure that all comments are satisfactorily resolved. This is verified by the NE quality representative for siting activities.

In terms of SSHAC process, the PPRP plays the major role as outlined in the CGS-NGG PEP (Council for Geosciences, 2010). The CGS-NGG Project Manager assures that the PPRP are satisfied that their comments are resolved.

Eskom used a multi-functional team to evaluate observed and documented evidence that all issues related to the product delivered by the CGS-NGG, the PSHA for Thyspunt, were closed. The results are contained in the combined assurance report (Eskom, 2014f).

10.10.6 Environmental Management

The Environmental Management Plan (EMP), NSIP01014 (Eskom, 2012a), was implemented for the site and is managed by the Land and Environmental Management Group (previously the Environmental and Land Management Department) now part of Eskom Real Estate (ERE) Division.

Conformance to the EMP is continually assessed by Eskom Site Environmental Control Officer and confirmed during site visits by NSS quality and technical personnel.

10.10.7 Security

Information is classified as confidential, with all project team personnel that come into contact with information relating to the SSR development, required to sign confidentiality agreements before being provided access to such information.

The physical safeguarding and security of the site follows a graded approach based on the level of threat and measures as prescribed in 238-14 (Eskom, 2023c). The physical security of the site is managed by Eskom Real Estate (ERE) Division.

10.10.8 Improvement

In the development of this SSR, the NSS, SRK and CGS-NGG ensure that programmes for the auditing and inspection of activities affecting quality and safety are established and executed to verify conformance to the relevant documented procedures, instructions and other requirements as per RD-0034 (National Nuclear Regulator, 2008).

	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-38

Eskom monitor, review and improve their integrated management systems through gap assessments, internal self-assessments, internal audits, corrective actions identified, OE, management reviews, project meetings, etc.

The culture of continuous improvement results in a series of workshops that the NSS arrange with its suppliers also after completion of the work to gather lessons learned for future applications.

10.10.9 Control of Non-conforming Products

The non-conformance of this SSR (product) is controlled via a review process where each comment, i.e. non-conformance, is documented and the status and changes (corrections) are traced as prescribed in NSIP00704 (Eskom, 2026e) . These documents were not updated further as NSS was integrated into NE management systems.

10.10.10 Corrective and Preventive Action

Non-conformances of the NSS are managed according to and follow the NOU Corrective Action Standard (Eskom, 2026a). This document describes the process for evaluation of a non-conformance, levels of responsibility, reporting and follow-up to close-out.

As part of their management systems, SRK and the CGS-NGG have their own procedures for reporting non-conformances and handling subsequent corrective and preventive actions and for reporting and preventing potential problems. The issues are reported to the NSS Project Manager and are dealt with in accordance with the applicable contract mechanisms.

10.11 Conclusion

Eskom has used the Nuclear Engineering Management system to provide oversight into the update of the TSSR. As part of the contract, assurance is provided by ensuring that the contract develops a quality plan, method statements as well as quality control plans for the execution of the work. Accordingly, all activities and procedures involved in implementing this update to the SSR are controlled and supervised through a documented management system throughout each stage of the process. Lessons learned and corrective actions are implemented to improve the systems where possible and used for further improvement of future SSR development.

The specialist areas are peer reviewed by suitably qualified and experienced experts and reviewed by subject experts in Eskom or appointed on behalf of Eskom. Their comments are documented and tracked to resolution.

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-39

In conclusion, the IMS implemented for the update of this TSSR to ensure that the product comply with requirements. Technical competence of all parties involved in the production of this TSSR was assured from the onset, monitored and actions taken where required for correction and sustainability in the execution of processes to deliver the required product.

The integrated system among the NSS and its suppliers was effective in ensuring that the statutory and regulatory requirements could be met in order to provide confidence in the product and the quality of the data, information, analysis and conclusions of this TSSR.

The compliance matrix (Eskom, 2014g) provides an overview of the requirements of RD-0034 (National Nuclear Regulator, 2008) and where they have been incorporated and addressed in this chapter and within the overall NSS management system to ensure compliance to the applicable requirements.

	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-40

10.12 References

1. Council for Geoscience, 2013a. *Nuclear Geo-Hazard Group Integrated Management System Manual. Report number 2010-0168*, Pretoria: CGS.
2. Council for Geoscience, 2013b. *Safety Culture Enhancement Programme. 2010-0192*. Pretoria: CGS.
3. Council for Geoscience, 2013c. *Safety Culture Report for the Thyspunt Siting Project. 2013-0275*, Pretoria: CGS.
4. Council for Geosciences, 2010. *Project Execution Plan. 2010-0174*, Pretoria: CGS.
5. Department of Energy, 2011. *R.927: The Regulations on Licensing of Sites for New Nuclear Installations*. Pretoria: South African Government.
6. Eskom, 2007. *Nuclear Sites Management Manual. GGM0902*, Cape Town: Eskom.
7. Eskom, 2012a. *Environmental Management Plan (Nuclear Sites) NSIP01014*, Cape Town: Eskom.
8. Eskom, 2012b. *Project Quality Plan for the Development of the Thyspunt, Duynfontyn and Bantamsklip Site Safety Report, (SSR). NSIP00925*, Cape Town: Eskom.
9. Eskom, 2014a. *Record of and justification for changes made to the Technical Specification for SSRs. NSIP03198*, Cape Town: Eskom.
10. Eskom, 2014b. *A Summary of Reviews of the Verification and Validation (V&V) Reports submitted for Computer-Based Prediction Models for the Thyspunt Site Safety Report (TSSR). NSIP03199*, Cape Town: Eskom.
11. Eskom, 2014c. *Record of the Thyspunt SSR Chapters and Sections' sign-off. NSIP03170*, Cape Town: Eskom.
12. Eskom, 2014d. *Assurance and Forensic Charter. 32-653*, Johannesburg: Eskom.
13. Eskom, 2014e. *Review of the Technical Specification for the Development of SSRs. NSIP01935*, Cape Town: Eskom.
14. Eskom, 2014f. *Combined Assurance Report - SSHAC Finalisation. NSIP03115*, Cape Town: Eskom.
15. Eskom, 2014g. *RD-0034 Compliance Matrix for the 2014 TSSR. NSIP03203*,

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-41

Cape Town: Eskom.

16. Eskom, 2014h. *Review of the Thyspunt SSR Chapters and Section sign off. NSIP03169*, Cape Town: Eskom.
17. Eskom, 2017. *Nuclear Sites Investigation Programme Process Maps, NSIP01444*, Cape Town: Eskom.
18. Eskom, 2020. *Document and Record Management Procedure. 32-6*, Cape Town: Eskom.
19. Eskom, 2022. *Technical Specification for Site Safety Reports, NSIP01388*, Cape Town: Eskom.
20. Eskom, 2023a. *Nuclear Safety and Quality Manual. 238-8*, Cape Town: Eskom.
21. Eskom, 2023b. *Safety and Quality Classification of SSR related Products and Processes. NSIP01432*, Cape Town: Eskom.
22. Eskom, 2023c. *Security Requirements for Nuclear Power Stations, 238-14*, Cape Town: Eskom.
23. Eskom, 2024a. *Nuclear Division Supplier Safety and Quality Requirements. 238-101*, Cape Town: Eskom.
24. Eskom, 2024b. *Nuclear Safety Level 2 Supplier Quality Management Requirements. 238-102*, Cape Town: Eskom.
25. Eskom, 2024c. *Nuclear Supplier Qualification Manual. 238-105*, Cape Town: Eskom.
26. Eskom, 2024d. *Management Reviews. 238-128*, Cape Town: Eskom.
27. Eskom, 2024e. *Nuclear Division Safety Culture Programme. 238-28*, Cape Town: Eskom.
28. Eskom, 2024f. *Nuclear Policy. 32-83*, Cape Town: Eskom.
29. Eskom, 2024g. *Procurement Quality Engineering Requirements. KSA089*, Cape Town: Eskom.
30. Eskom, 2024h. *Eskom Standard: Nuclear Engineering Plant Parameter Envelope Doc ,NSIP03179*, Cape Town: Eskom.
31. Eskom, 2025a. *Document and Record Management Requirements. 238-6.*, Cape Town: Eskom.

 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-42

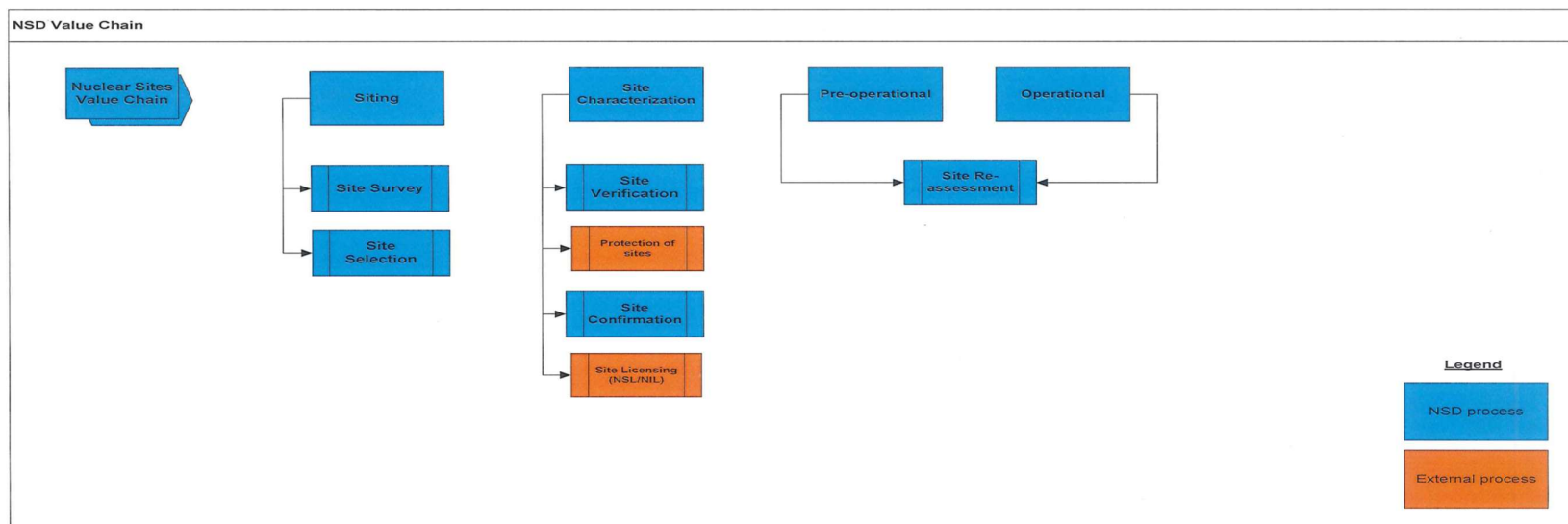
32. Eskom, 2025b. *Nuclear Engineering Management Manual*. 331-2, Cape Town: Eskom.
33. Eskom, 2026a. *Corrective Action Standard*. 238-83, Cape Town: Eskom.
34. Eskom, 2026b. *Koeberg Operating Unit SHEQ Policy*. 238-160, Cape Town: Eskom.
35. Eskom, 2026c. *Nuclear Division Integrated Management System Description*. 238-1, Cape Town: Eskom.
36. Eskom, 2026d. *Nuclear Sites Glossary of Definitions, Terms and Abbreviations*, Cape Town: Eskom.
37. Eskom, 2026e. *Site Safety Report Review Procedure*. NSIP00704, Cape Town: Eskom.
38. International Organisation for Standardisation, 2008. *ISO 9001:2008, Quality Management Systems- Requirements*, Geneva: ISO.
39. International Organisation for Standardization, 2015. *ISO 9001:2015: Quality Management System - Requirements*, Geneva: ISO.
40. National Nuclear Regulator, 2008. *Quality and Safety Management Requirements for Nuclear Installations*. RD-0034, Rev 0, Centurion: National Nuclear Regulator.
41. National Nuclear Regulator, 2016a. *RG-0011, Interim Guidance for the Siting of Nuclear Facilities*. Centurion: National Nuclear Regulator.
42. National Nuclear Regulator, 2016b. *Regulatory Guide: Guidance on the Verification and Validation of Evaluation and Calculation Models used in Safety and Design Analyses*, RG-0016, Centurion: NNR.
43. National Nuclear Regulator, 2018. *Interim Guidance on Safety Assessment of Nuclear Facilities*, RG-0019, Rev 0, Pretoria: National Nuclear Regulator.
44. PRDW, 2008. *PRDW Quality System Manual (QSM)*, Rev 3. Cape Town: PRDW.
45. PRDW, 2018. *Project Quality Management System: Generic Project Quality Plan*. S5006-QP-001, Cape Town: PRDW.
46. PRDW, 2024. *Addressing of NNR Comments in the Update of the Thyspunt SSR Section 5.9 in Support of the Thyspunt Nuclear Installation Site Licence Application. Project Specific Quality Plan (PSQP)*. SAR230013-QP-QM-001-R1_PSQP, Cape Town: PRDW.

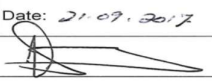
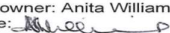
 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM		10-43

47. SRK Consulting, 2013. *Safety and Quality Policy and Procedures Manual for the Integrated Management System for Site Safety Reports*, Rondebosch: SRK.
48. SRK Consulting, 2023. *Integrated Quality Management System*, Rondebosch: SRK.
49. SRK, 2025. *Project Quality Plan: SSR Update Project. NSIP04382*, Cape Town: SRK.

 Eskom	SITE SAFETY REPORT FOR THYSPUNT		Rev 0c	Chapter-Page
	MANAGEMENT SYSTEM			10-44

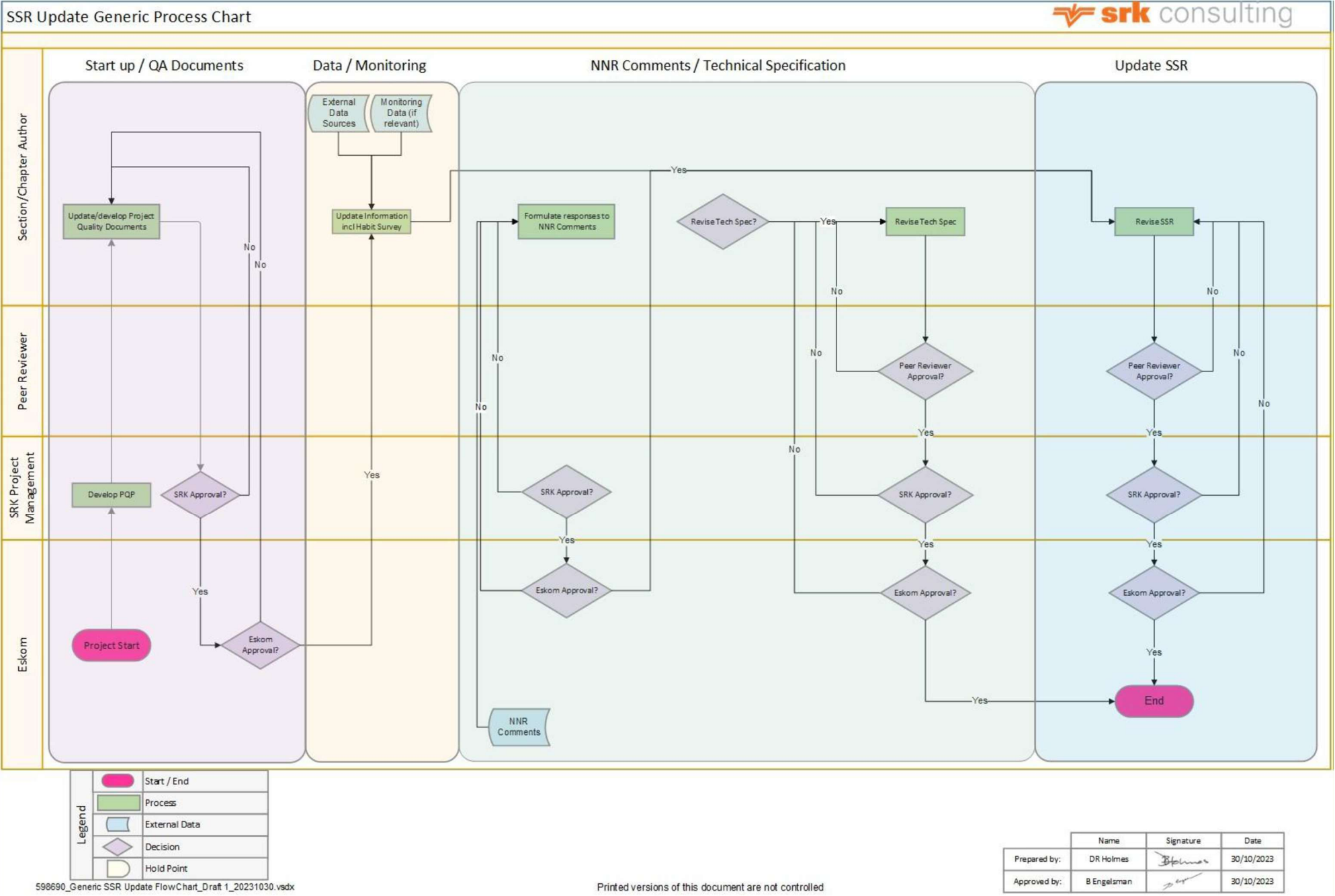
Appendix 10. A: NSS Value Chain



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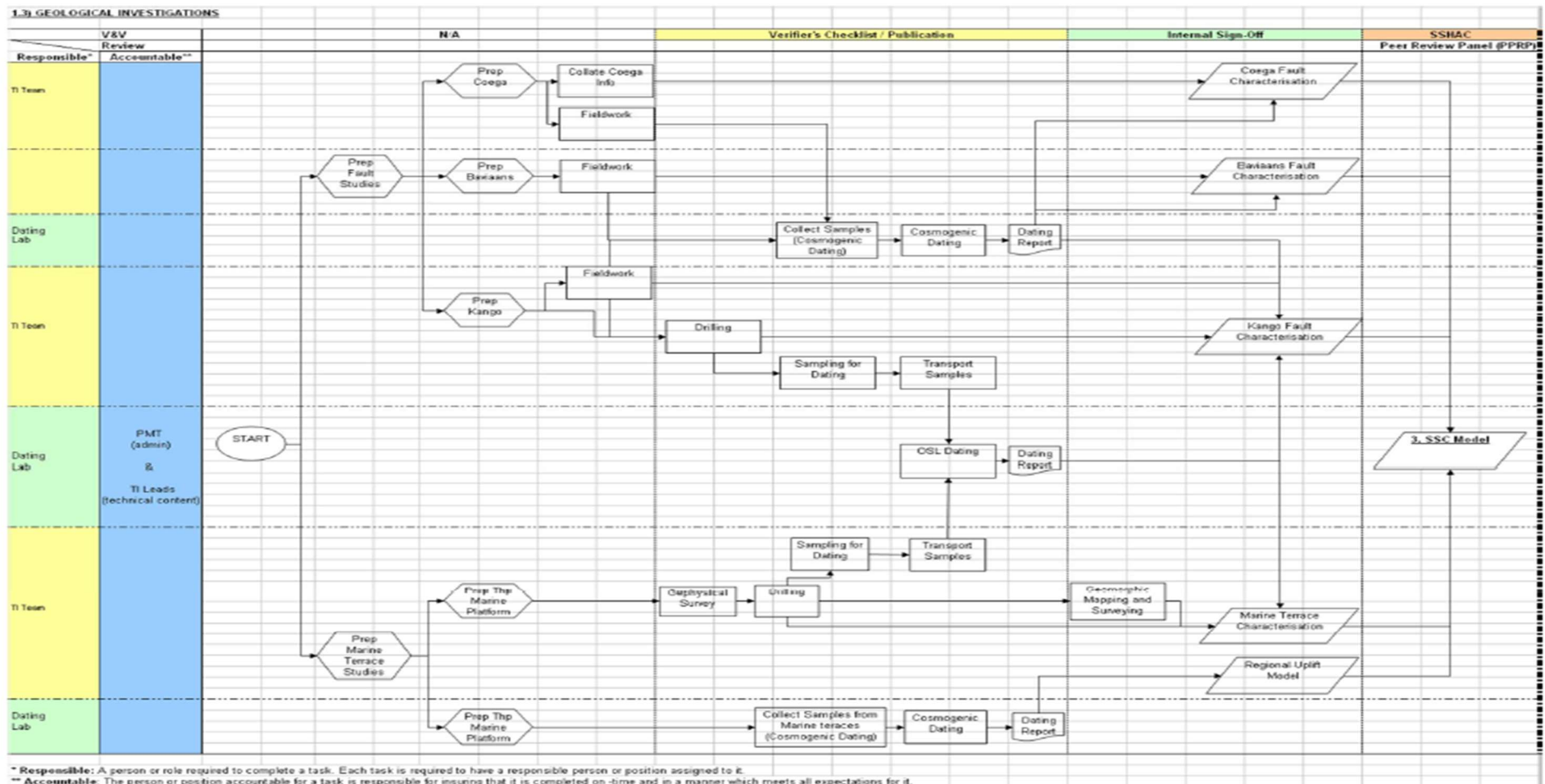
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Appendix 10. B: SRK High Level Process Chart



 Eskom	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter- Page
	MANAGEMENT SYSTEM		10-47

Appendix 10. D: CGS NGG Process for Geological Investigations



	SITE SAFETY REPORT FOR THYSPUNT	Rev 0c	Chapter- Page
	MANAGEMENT SYSTEM		10-48

Appendix 10. E: SSR Oversight Activities

