

SHE SPECIFICATION

NUCLEAR SITING STUDIES

Title: SHE Specification for Nuclear Siting Studies Contracts

Compiled by

FA van Mosseveld

Project Manager

Date: 2022-02-25

Functional Responsibility

Thompsus

A Khudunyane

NPM SHE Representative

Date: 2022-03-01

Authorised by

I Sekoko

Nuclear Analysis and Siting Manager

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1 INTRODUCTION

The Occupational Health and Safety (OH&S) Act No.85 of 1993 requires the *Employer* to provide *Contractors/Consultants* involved in the execution of work on Eskom sites with a Safety Health and Environmental (SHE) specification. The SHE specification that the *Employer* is responsible to provide is based on the risk profile of the envisaged work. This SHE specification is thus a guide to the various *Contractors/Consultants* that Nuclear Siting Studies (NSS) enter into contracts with to conduct various activities associated with monitoring and analyses on the existing and proposed nuclear sites. Although construction and demolition work is not anticipated, there may be elements associated with the sinking/maintenance of boreholes and other activities that do require consideration of the OH&S Act Construction Regulations, hence the inclusion in this SHE specification. The Works Information for the specific Scope will provide greater clarification as to the applicability of the various sections in this SHE Specification.

2 SCOPE

Applicable to Contractors/Consultants in the execution of work on contracts entered into with the Eskom NSS.

2.1 PURPOSE

Provides guidelines to NSD *Contractors/Consultants* on the Eskom SHE requirements and interpretation of the OH&S Act regulations that they have to comply with whilst executing work on NSS contracts.

2.2 APPLICABILITY

This document shall apply to Eskom NSS contracts.

3 REFERENCES

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

3.1 NORMATIVE

- 1. Occupational Health and Safety Act No.85 of 1993.
- 2. 32-136 Eskom Standard for Contractor Health and Safety Requirements.
- 3. 32-95 Eskom Environmental, Occupational Health and Safety Incident Management Procedure.
- 4. NSIP03281 Eskom Real Estate Generic Environmental Requirements.

3.2 INFORMATIVE

- MANDIR-009: Personal Protective Equipment Code for the Nuclear Portfolio.
- 2. MANDIR-0912: Issuing of Yellow Cards for Nuclear Safety, Health, Environmental and Human Performance Offenders Issuing of Green Cards for Nuclear Safety, Health, Environmental and Human Performance.

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- 3. National Building Regulations and Building Standards Act No. 103 of 1977.
- National Environmental Management Act. No. 107 of 1998.
- 5. SABS EN 1808: The South African Bureau of Standards Code of Practice: Safety Requirements on Suspended Equipment, Design Calculations, Stability Criteria, Construction Tests.
- 6. South African Qualifications Authority Act No. 58 of 1995.

4 DEFINITIONS AND ABBREVIATIONS

4.1 DEFINITIONS

- **Competent Person**: any person having the knowledge, training, experience and qualifications specific to the work or task being performed: Provided that, where appropriate qualifications and training are registered in terms of the provisions of the South African Qualifications Authority Act, these qualifications and training shall be deemed the required qualifications and training.
- **Construction Vehicle**: a vehicle used for the conveyance of persons or material or both, on and off the construction site for the purposes of performing construction work.
- Contractor: an employer, as defined in section 1 of the OH&S Act, who performs construction work and includes principal contractors (requirements that apply to the Contractor or Consultant as defined in the NEC contract documents shall apply to all subconsultants/sub-contractors).
- **Employer**: the client as referred to in the OH&S Act. Person for whom construction work is performed.
- **Employer's Agent**: the client's agent/representative as referred to in the OH&S Act (the Employer's Agent, Project Manager or Employer's Representative as referred to in the NEC document and Works Information.)
- **Environment**: the surroundings within which humans exist that are made up of:
 - a) the land, water and atmosphere of the earth;
 - b) micro- organisms, plant and animal life;
 - c) any part or combination of a) and b) and the interrelationships among and between them; and
 - d) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well- being.
- **Ergonomics**: the application of scientific information concerning humans to the design of objects, systems and the environment for human use in order to optimise human well-being and overall system performance.
- **Hazard**: a source or a situation with a potential for harm in terms of human injury or ill- health, damage to property, damage to the work place environment, or a combination of these.
- **Hazard Identification**: the identification and documenting of existing or expected hazards to the health and safety of persons, which are normally associated with the type of construction work being executed or to be executed.
- **Health and Safety File**: a file, or other record in permanent form, containing the information required as contemplated in these regulations.

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- **Health and Safety Plan**: a documented plan which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified.
- **Health and Safety Specification**: a documented specification of all health and safety requirements pertaining to the associated works on a construction site, so as to ensure the health and safety of persons.
- **Incident**: an unplanned, undesired or unexpected event that could result in physical harm to a person and/or damage to assets and/ or have a negative impact on the environment.
- **Medical Certificate of Fitness**: a certificate valid for one year issued by an Occupational Health Practitioner, issued in terms of these regulations, whom shall be registered with the Health Professions Council of South Africa.
- **Method Statement**: a document detailing the key activities to be performed in order to reduce as reasonably as practicable the hazards identified in any risk assessment.
- **Mobile Plant**: machinery, appliances or other similar devices that is able to move independently, for the purpose of performing construction work on the construction site.
- **Person Day**: one day for carrying out construction work by a person on a construction site for one normal working shift.
- **Principal contractor**: an employer, as defined in section 1 of the OH& S Act who performs construction work and is appointed by the client to be in overall control and management of a part of or the whole of a construction site. (the *Contractor* or *Consultant* as referred to in the NEC documents and Works Information).
- **Professional Engineer or Professional Certificated Engineer**: any person holding registration as either a Professional Engineer or Professional Certificated Engineer under the Engineering Profession Act.
- **Professional Technologist**: any person holding registration as a Professional Technologist under the Engineering Profession Act.
- **Provincial Director**: the provincial director as defined in regulation I of the General Administrative Regulations under the OH& S Act.
- **Public domain**: published in any public forum without constraints (either enforced by law, or discretionary).
- **Risk Assessment**: a program to determine any risk associated with any hazard at a construction site, in order to identify the steps needed to be taken to remove, reduce or control such hazard.
- **Risk Profile**: A profile based on results of a risk assessment process that indicates the significance and the category (assets, people or environment) of risks to Safety, Health and Environment.
- **Safety**: includes the activities related to injury prevention, fire prevention, damage control and occupational hygiene.

4.2 ABBREVIATIONS

Abbreviation	Description	
Act	Occupational Health and Safety Act No.85 of 1993	
cm	centimetre	
COC	Certificate of Compliance	

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Abbreviation	Description	
NEMA	National Environmenta Management Act	
NSD	Nuclear Sites Department	
OH&S	Occupational Health and Safety	
PEB	Public Exclusion Barrier	
PPE	Personal Protective Equipment	
SABS	South African Bureau of Standards	
SHE	Safety, Health and Environment	
SHEQ	Safety, Health, Environment and Quality	

5 REGULATIONS

Applicability of OH&S Act, and in particular the Construction Regulations, as interpreted for the Provision of the Services by the *Contractor* is as follows:

5.1 HEALTH AND SAFETY PLAN IN TERMS OF THE CONSTRUCTION REGULATIONS

A principal contractor shall provide and demonstrate to the *Employer* a suitable and sufficiently documented health and safety plan, based on the *Employer's* documented health and safety specifications contemplated in regulation 4 (1) (a), Construction Regulations (OH&S Act) which shall be applied from the date of commencement of and for the duration of the construction work.

5.2 RISK ASSESSMENT

- (1) The principal contractor performing construction work shall, before the commencement of any construction work and during construction work, cause a risk assessment to be performed by a competent person appointed in writing and the risk assessment shall form part of the health and safety plan to be applied on the site and shall include at least:
 - a) the identification of the risks and hazards to which persons may be exposed to;
 - b) the analysis and evaluation of the risks and hazards identified;
 - c) a documented plan and applicable safe work procedures to mitigate, reduce or control the risks and hazards that have been identified;
 - d) a monitoring plan; and;
 - e) a review plan;
- (2) The principal contractor shall ensure that a copy of the risk assessment is available on site for inspection by an inspector, the *Employer*, the *Employer's Agent*, contractor, employee, representative trade union, health and safety representative or any member of the health and safety committee.

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(3) The principal contractor shall consult with the health and safety committee or, if no health and safety committee exists, with a representative group of employees, on the development, monitoring and review of the risk assessment.

- (4) The principal contractor shall ensure that all employees under his or her control are informed, instructed and trained by a competent person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the risk assessment.
- (5) The principal contractor shall ensure that all contractors are informed regarding any hazard as stipulated in the risk assessment before any work commences, and thereafter at such times as may be determined in the risk assessment.
- (6) The principal contractor shall ensure that as far as is reasonably practicable, ergonomic related hazards are analysed, evaluated and addressed in the risk assessment.
- (7) Notwithstanding the requirements laid down in sub-regulation (4), no principal contractor shall allow or permit any employee or person to enter any site, unless such employee or person has undergone health and safety induction training pertaining to the hazards prevalent on the site at the time of entry.
- (8) The principal contractor shall ensure that all visitors to a construction site undergoes health and safety induction pertaining to the hazards prevalent on the site and shall be provided with the necessary personal protective equipment.
- (9) Every employee on site shall:
 - be in possession of proof of the health and safety induction training as determined in sub regulation (7), issued by a competent person prior to the commencement of construction work; and;
 - carry the proof contemplated in paragraph (a) for the duration of that project or for the period that the employee will be on the construction site. The principal contractor shall review the relevant risk assessment- (a) where changes are effected to the design and or construction that result in a change to the risk profile; or (b) when an incident has occurred.

5.3 REPORTING OF ACCIDENTS

- (1) All injuries, illness and environmental incidents shall be reported immediately but not later than at the end of the shift. Injuries shall be reported on the standard Problem Notification report form which is available from the *Employer's Agent*.
- (2) Copies of the Accident Report are to be given, within 24 hours to the following:
 - a) Contractor Representative/Manager.
 - b) *Employer's* Representative.

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6 APPOINTMENT OF REPRESENTATIVES

6.1 CONTRACTOR'S REPRESENTATIVE

The *Contractor* shall appoint a representative experienced in the nature of the work be to performed. The *Contractor's* representative shall be familiar with any legal and/or Employer requirement pertaining to the work he is to perform. All work carried out by the *Contractor* shall be under the supervision of the *Contractor's* representative. A person so appointed shall, when he is absent from the site for a period exceeding one day, give due notice of such absence

6.2 THE EMPLOYER'S REPRESENTATIVE

The *Employer* will nominate a representative to liaise with the *Contractor* on all aspects pertaining to the contract. The *Contractor* may not commence with work on site unless authorised to do so by the *Employer's* representative *Employer's Agent*. The *Employer's Agent* is empowered to stop any work which is not performed in accordance with the contract. The *Employer's Agent* will appoint a supervisor, if so required, to oversee work performed on or in the plant.

6.3 CONSTRUCTION SAFETY OFFICER

- (1) The Contractor shall upon having considered the size of the project, the degree of dangers likely to be encountered or the accumulation of hazards or risks on the site, appoint a full-time or part-time construction safety officer in writing to assist in the control of all safety related aspects on the site: Provided that, where the question arises as to whether a construction safety officer is necessary, the decision of an inspector shall be decisive.
- (2) The appointed construction safety officer shall as far as is reasonably practicable be utilised to give input at the early design stage and where not appointed at this stage, he or she shall be given the opportunity to input into the health and safety plan when wanting to do so, and a record of such shall be kept in the health and safety file.
- (3) The *Contractor* shall not appoint a construction safety officer to assist in the control of safety related aspects on the site unless he or, she is reasonably satisfied that the construction safety officer he or she intends to appoint, has the necessary competencies and resources to assist the *Contractor*.

7 PERSONAL PROTECTIVE CLOTHING AND EQUIPMENT

The *Contractor* shall ensure that he complies with the General Safety Regulations, Section 2 of the OHS Act, which stipulate the issuing and maintenance of PPE. PPE issued is required to comply with SABS standards.

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8 ROAD TRAFFIC REGULATIONS

(1) All motor vehicles operated by the *Contractor*/sub-contractors shall, in all respects, comply with the Road Traffic Ordinance, Ord. 21 of 1966 and regulations framed thereunder. All vehicles must be inspected daily and shall not be used unless they meet the required roadworthy condition.

- (2) Drivers shall strictly obey all road traffic signs on the *Employer's* property and give clear and recognised signals of their intentions whilst operating a vehicle.
- (3) Drivers and passengers shall wear seatbelts at all times while driving on the Eskom KOU property and if found guilty of such offence will be subject to Koeberg's Mandir-091 concerning the enforcing of SHE Rules.
- (4) The principal contractor ensures that no passengers are transported on the back of LDV's (bakkies) or trucks within the boundaries of the *Employer's* property which starts at the Public Exclusion Barrier (PEB) or the entrances at the different sites. Failure to adhere will result in access onto the *Employer's* property being denied.
- (5) Vehicles shall not be overloaded. Drivers shall be held responsible for the observance of this regulation.
- (6) Drivers shall be responsible for the travel-worthiness of all loads conveyed by them. Precautions shall be taken to lash all loads properly.
- (7) Persons and material shall not be transported simultaneously as such material may move in transit and injure passengers.
- (8) Loads projecting from vehicles shall be securely lashed. In daytime a red flag, and during darkness a red light, shall be attached to the extreme end of such projecting material.
- (9) The overhanging portion of the weight of a load from a point over the hub of the rear wheels to the end of the projections shall not exceed one quarter of the total load.
- (10) Vehicle surveys will be carried out periodically by the officers of the SHE Group to establish roadworthiness of vehicles. They shall require all unroadworthy vehicles to be taken off the road until rectified.
- (11) All vehicle movements within the plant and works shall be carried out with due regard to the safety of pedestrians.
- (12) A general speed restriction of 50 km/h as indicated is in operation within the works area.
- (13) Speed limits displayed on the *Employer's* property must be complied with as they are legally enforceable. The speed limit on the Koeberg site is 35 km/h.

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9 CONSTRUCTION VEHICLES AND MOBILE PLANT

- (1) The *Contractor* shall ensure that all construction vehicles and mobile plants:
 - Are of an acceptable design and construction;
 - Are maintained in a good working order;
 - Are used in accordance with their design and the intention for which they are designed, having due regard to safety and health;
 - Are operated by workers who-have received appropriate training and been certified competent and been authorised to operate such machinery; and are physically and psychologically fit to operate such construction vehicles and mobile plant by being in possession of a medical certificate of fitness;
 - Have safe and suitable means of access;
 - Are properly organised and controlled in any work situation by providing adequate signalling or other control arrangements to guard against the dangers relating to the movement of vehicles and plant, in order to ensure their continued safe operation;
 - Are prevented from falling into excavations, water or any other area lower than the working surface by installing adequate edge protection, which may include guard rails and crash barriers;
 - Where appropriate, are fitted with structures designed to protect the operator from falling material or from being crushed should the vehicle or mobile plant overturn;
 - Are equipped with an electrically operated acoustic signalling device and a reversing alarm;
 and
 - Are on a daily basis inspected prior to use, by a competent person who has been appointed in writing and the findings of such inspection is recorded in a register.
- (2) The *Contractor* shall furthermore ensure that:
 - No person rides or be required or permitted to ride on any construction vehicle or mobile plant otherwise than in a safe place provided thereon for that purpose;
 - Every construction site is organised in such a way that, as far as is reasonably practicable, pedestrians and vehicles can move safely and without risks to health;
 - The traffic routes are suitable for the persons using them, sufficient in number, in suitable positions and of sufficient size;

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 Every traffic route is, where necessary indicated by suitable signs for reasons of health or safety;

- All construction vehicles and mobile plant left unattended at night, adjacent to a freeway in normal use or adjacent to construction areas where work is in progress, shall have appropriate lights or reflectors, or barricades equipped with appropriate lights or reflectors, in order to identify the location of the vehicles or plant;
- Whenever visibility conditions warrant additional lighting, all mobile plant are equipped with at least two headlights and two taillights when in operation;
- Tools and material are secured in order to prevent movement when transported in the same compartment with employees;
- Vehicles used to transport employees have seats firmly secured and adequate for the number of employees to be carried; and
- When workers are working on or adjacent to public roads, reflective indicators are provided and worn by the workers.

10 PERSONS IN A STATE OF INTOXICATION

Any person who is, or who appears to be, drunk or under the influence of drugs will be prevented from entering or remaining on site. No persons shall have in his possession or bring onto site intoxication liquor or drugs. Eskom's lifesaving rule "Be Sober" and General Administrative Regulation section 10 of the OH&S Act apply in this context.

11 HORSEPLAY AND ASSAULTS

The *Contractor* shall make an effort to prevent horseplay or assaults at the *Employer's* premises. Any offender will be removed from site.

12 PORTABLE ELECTRICAL TOOLS INCLUDING HAND LAMPS

NOTE: Portable Electrical Tools shall comply to the Regulations as defined in the Electrical Machinery Regulations in Section 9 and 10.

- (1) A record book shall be provided and kept up to date by the *Contractor* for the inspection by a person who has been trained to carry out such inspections (and such person shall be a *Contractor's* employee), of all portable tools and shall include welding machines and hand lamps.
- (2) These portable tools shall be inspected and tested at least once a week and the record book signed by the person conducting such inspection.

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(3) Portable tools are to be clearly/uniquely marked and identified that the construction of these tools complies with double insulation. Please note that such appliances need to be earthed.

- (4) Earth leakage circuit protection is required during the usage of portable electrical tools including hand lamps. This is considered adequate protection when working in wet or damp conditions or in closely confined spaces inside metal vessels.
- (5) All portable tools shall be maintained in good and safe working order. The wiring of 3 point plugs must comply with the following:
 - Cable Sheath clamped to plug
 - Earth Conductor wired with a loop to provide earth protection during forced disconnection
 - Such record book shall be made available to the Employer's representative on request.

13 GOOD HOUSEKEEPING

- (1) Grounds surrounding the works should be cleaned and kept clean of superfluous material. Remember that good housekeeping is absolutely essential to ensure a safe work place.
- (2) Workshops and temporary work areas within the *Employer's* ground and plant areas shall provide designated areas for smoking, stacking, storage and task performance. Walkways are to be demarcated and shelves used for storage shall be adequately designed. The boundary lines for temporary work areas within the plant precincts shall be demarcated with white barrier tape to limit unauthorised access. Further, the principle of "A place for everything and everything in its place all the time" shall apply at all times, during task performance.

14 MEDICAL NOTIFICATION

- (1) All Contractor employees must notify the Employer's Agent (Medical Group at Koeberg site) of any communicable disease or illness they are suffering from immediately it becomes known to them, or on commencement of work irrespective whether they contracted the ailment prior to employment on the Eskom site.
- (2) The following diseases / illnesses are noticeable:
 - All contagious/infectious diseases such as German Measles, Measles, Mumps
 - Food handlers must report the following illnesses: Typhoid; Hepatitis A; skin conditions; upper respiratory tract infections.
 - Tuberculosis (this can be treated by Health Services on site).

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15 SECURITY

The *Contractor* and all persons employed by the *Contractor* shall adhere to security requirements as defined and as amended from time to time.

16 ENFORCING SAFETY, HEALTH AND ENVIRONMENTAL RULES

The *Contractor* shall be subject to the *Employer's* Safety Health, Environment and Quality (SHEQ) Police 32-727 and shall ensure compliance to the *Employer's* Life Saving Rules as well as to the provisions outlined in the *Employer's* Management Directives MANDIR-009 and MANDIR-091 concerning the use of PPE and enforcing of SHE rules.

17 EMERGENCY NUMBERS

Telephone numbers to be used for the reporting of any emergency, the *Employer's Agent* should be informed of the emergency as soon as practicable, but before the end of work that day:

Eskom Land and Environmental Manager	Jurina le Roux	021 522 1257 / 0826633467
Thyspunt Site	Hennie de Beer	042 297 0029 / 0829404539
Duynefontyn Site	Frans van Mosseveld	021 522 1264 / 0825756954

18 DEVELOPMENT TEAM

Name	Designation or Business area	
FA van Mosseveld	NPM	
B Ngwenya	NSS Senior Scientist	

19 ACCEPTANCE AND AUTHORISATION

Name	Designation or Business area	
A Williams	NSS Senior Scientist	
M van Zyl	NSS Senior Scientist	
G Williams	NSS SHE Representative	
K Marcus	NSS Senior Scientist	
I Sekoko	NAS Manager	

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Feb 2016	0	FA van Mosseveld	Document compiled in conformance to KGA-073 for placement of NSD contracts.
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