

	Specification	Operating Unit – Koeberg Nuclear Power Station
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Abbreviations

COA	Certificate of Analysis
COC	Certificate of Conformance
CSR	Critically Safety Related
KNPS	Koeberg Nuclear Power Station
MFR	Manufacturer
MSDS	Material Safety Data Sheet
OHS Act	Occupational Health and Safety Act No. 85 of 1993
QA	Quality Assurance
SANS	South African National Standards
SDS	Safety Data Sheet

Definitions

Certificate of Analysis	Certificate of Analysis is a manufacturer/testing laboratory data sheet indicating the total halogens, total sulphur, and heavy metal content of the tested product on the manufacturer/testing laboratory letterhead
CRACK	Control of Chemical Products at Koeberg Nuclear Power Station.
Globally Harmonized System of Classification and Labelling of Chemicals	Means an internationally agreed-upon system to standardize chemical hazard classification and communication.
Material Safety Data Sheet	Mean a document that is aligned to the GHS, providing information on hazard classification, properties of hazardous chemicals, procedures for handling or working with hazardous chemicals in a safe manner, and the effects of the hazardous chemical on health and safety at a workplace and that is prepared in accordance with regulation 14A of the Regulations for Hazardous Chemical Agents of 2021 (OHS Act 85 of 1993).
Wet Chemicals	Chemicals supplied in a liquid form.

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1. Introduction

This User Requirements Specification for Liquid Chemicals for application at Koeberg Nuclear Station within Eskom's Generation Division. At KNPS liquid chemicals are sometimes referred to as wet chemicals.

Background:

Koeberg Nuclear Power Station (KNPS) is situated at Duynfontein, 27km north of Cape Town on the Atlantic coast. It has operated safely and efficiently for nearly 40 years, and currently Eskom is doing upgrades to the plant and structures for long term operations.

Nuclear power stations are complex facilities that require meticulous attention to detail and a steadfast commitment to excellence. This unwavering dedication to excellence ensures the safe and reliable generation of electricity for millions of people around the country. At the heart of KNPS lies a culture of adherence to standards and quality.

This commitment to quality is reflected in the rigorous standards that govern every aspect of KNPS. These standards cover everything from the design and construction of plant systems to the Liquid (Wet) Chemicals used on the plant, and they provide a robust foundation for the safe and reliable operation of the facility.

This document outlines the user requirements for Liquid (Wet) Chemicals to be supplied at Koeberg Nuclear Power Station (KNPS). The purpose of this specification is to ensure that Wet Chemicals supplied to KNPS meet the necessary requirements for efficient and safe operation.

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2. Generic scope of Wet Chemicals to supplied:

This specification applies to all Wet Chemicals used at KNPS, including but not limited to:

- a) Nitric Acid - (HNO₃)
- b) Ethanolamine (100 %) / Monoethanolamine (64%) - (HO-CH₂-CH₂-NH₂)
- c) Ammonia Solution / Ammonium Hydroxide – 25% NH₄OH
- d) 100% Hydrazine Hydrate / 64% Hydrazine (N₂H₄)
- e) Antifreeze Coolant - Ethylene Glycol (100%) ((CH₂OH)₂)
- f) Sodium Hydroxide / Caustic Lye Solution (NaOH)
- g) Hydrochloric Acid – 33% (HCL)
- h) Potassium Hydroxide Liquid (30%) KOH
- i) Hydrogen Peroxide

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3. Generic User Requirements:

3.1 Functional Performance:

- 3.1.1 Wet Chemicals shall meet the necessary performance requirements for use in plant operations and equipment at KNPS.
- 3.1.2 Wet Chemicals supplied shall be CRACK approved prior to be supplied to site where alternative or equivalent products shall be considered.
- 3.1.3 Any potential incompatibility with existing design specifications at Koeberg Nuclear Power Station for Chemicals shall be brought to Eskom's attention at the time of tender.

3.2 Safety and environment:

- 3.2.1 Wet Chemicals shall be provided in a safe packaging / containers for use in the power generation station, with no risk of environmental spillage.
- 3.2.2 Wet Chemicals shall pose no risk to explosion and emitting hazardous vapours to personnel and the environment as far as possible.
- 3.2.3 Wet Chemicals shall be sourced from a manufacturer whose facilities operates an Environmental Management System which complies with the requirements of ISO 14001: 2015

3.3 Quality and cleanliness:

- 3.3.1 Wet Chemicals shall meet the necessary quality standards for KNPS as specified.
- 3.3.2 Wet Chemicals shall be manufactured and/or supplied by reputable and qualified suppliers.
- 3.3.3 All Wet Chemicals shall be free from particulates, sediment, suspended matter and other impurities.
- 3.3.4 The supplier shall notify Eskom of any significant formulation changes that may affect the use of the chemical in and/or its compatibility with existing equipment.

3.4 Storage, Handling and Expiry Dates:

- 3.4.1 All wet chemicals shall be transported in a manner that prevents damage to the packaging or its contents.
- 3.4.2 All necessary precautions shall be taken to prevent leaks or spills during transportation.
- 3.4.3 Wet Chemicals shall be stored, handled, and transported in accordance with the manufacturer's instructions and industry best practices prior being delivered to site.

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- 3.4.4 Wet Chemicals shall be protected from contamination and degradation during storage, transportation, and handling.
- 3.4.5 The lubricant packaging and condition shall be such that when stored, unopened, for a period of 24 months, under normal atmospheric conditions, the wet chemical shall still meet the relevant performance standard and be suitable for use.
- 3.4.6 Adhesive labels shall be suitable for outdoor storage for a period of at least 2 years.
- 3.4.7 Safety data sheet (SDS) required with every delivery and must include manufacturing date, expiry date and allowable deviation of product.
- 3.4.8 All chemicals with a shelf-life, shall not expire within one (1) year from the date of delivery to site.
- 3.5 Testing and Inspection:
- 3.5.1 Wet Chemicals shall be tested and inspected to ensure that they meet the necessary requirements before being supplied to site.
- 3.5.2 Eskom reserves the right to have check analyses carried out by the analysing laboratory of its choice in order to verify the quality of the chemical to verify.
- 3.5.3 If the check analysis report shows that the chemical does not present the required characteristics, Eskom reserves the right to refuse the batch which has been delivered. This batch shall be removed and replaced at the Vendor/Supplier/Contractor's expense.
- 3.5.4 The supplier shall make provision for Quality Control and Procurement Quality Engineering inspections during manufacturing, where applicable.
- 3.5.5 The time, duration, and conditions of such inspections shall be determined by the parties so as not to interfere with, nor unreasonably delay the progress of the concerned manufacturing operations.
- 3.5.6 When during such inspections the Employer detects defaults or defects, the Employer may reject the chemicals as a batch or part thereof. If the rejection shall not be justifiable or necessary, the Employer may give to the Supplier any comments that the Employer shall deem appropriate to make the chemicals comply with the concerned contract. The Contractor shall promptly remedy said defaults and defects and carry out any appropriate corrective actions.

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3.6 Documentation:

3.6.1 Each delivery to site of Wet Chemicals shall be accompanied by the following documentation:

3.6.1.1 Safety Data sheets,

3.6.1.2 Technical data sheets, and

3.6.1.3 Certificates of analysis (COA)

The Certificate of Analysis will demonstrate that the chemical characteristics in every requirement of the design specification guideline (DSG).

The following elements listed below depending on characteristics and concentration will have a negative impact on equipment, coolant pollution and activation products:

- Total halogens and halides
- Total sulphur
- Heavy metals

3.6.1.4 Certificate of conformance.

The certificate of conformance shall state Wet Chemicals meets the requirements for chemical products and materials for use at KNPS as described in the relevant DSG. An Eskom authorised personnel shall review the Certificate of Compliance prior to release and use of the chemical. All documentation must be completely legible.

3.6.2 The documentation shall be submitted to and kept on file by KNPS as per the station records management system.

3.6.3 Eskom reserves the right to have a verification analysis carried out by the analytical laboratory of its choice to verify the quality of the received Wet Chemicals.

3.7 Packaging, Transportation and Shipping

3.7.1 Only clean new containers shall be used to package Eskom Wet Chemicals.

3.7.2 Package sizing shall be in accordance with the specific required set out below.

3.7.3 Packaging shall be of such a nature as to ensure the lubricant's quality and condition are (no contamination, deterioration and/or loss) maintained during handling, transportation, and storage.

3.7.4 All information required shall be clearly visible and legible on the container. The information reflected on the packaging shall include the following as a minimum:

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- 3.7.4.1 The Chemical Brand Name and Supplier Name.
- 3.7.4.2 The Batch Number and the date of manufacture.
- 3.7.4.3 The quantity in litres.

3.8 General

- 3.8.1 This URS is the minimum applicable technical and chemical specifications of Wet Chemicals associated with the use and application of these products. It is the responsibility of the Supplier to advise and inform the Employer of any new developments on their effects on health, safety, environment, and the applicability of regulatory limitations prior to supply to site.
- 3.8.2 Where deviations are required, the Supplier shall clearly demonstrate that the alternative Wet Chemicals Standards to be supplied meet and/or surpass the minimum requirements as set out Table 2 below, they are fully compatible with products currently being and shall be Control of Chemical Products at Koeberg Nuclear Power Station (CRACK) approved before being supplied to KNPS.
 - 3.8.2.1 No deviation or exception shall be permitted without the written approval of the Employer.
 - 3.8.2.2 Compliance to this specification shall not relieve the Supplier of the responsibility of furnishing Wet Chemicals that meets the environmental requirements and free from any unauthorized at KNPS.

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4 Generic and specific descriptions and applications of Wet Chemicals to be supplied to KNPS.

Table 1 below gives a generic description and application of Wet Chemicals to be supplied to KNPS. This table provides general guidance on the product characteristics and their application. For specific product quantities, please refer to Table 2 below.

Table 1: Generic description and application of Wet Chemicals to be supplied.

Wet Chemical type	Generic description	Application
<p>NITRIC ACID (HNO₃) (55%)</p>	<p>33-34 KG; 25l drum, 55 % HNO₃ The Certificate of Compliance must comply with the chemistry specifications in DSG -317-094. The technical data sheet (TDS) is required with every delivery and must include manufacturing date, expiry date; and all chemicals with a shelf life shall not expire withing one (1) year.</p>	<p>Chemical Dosing for pH adjustment and neutralisation in liquid water tanks.</p>
<p>ETHANOLAMINE/ MONOETHANOLAMINE (98% wt.) (HO-CH₂-CH₂-NH₂)</p>	<p>220 kg drum, 98 % ETHANOLAMINE The Certificate of Compliance must comply with the chemistry specifications in DSG - 317- 090. The technical data sheet (TDS) is required with every delivery and must include manufacturing date, expiry date; and all chemicals with a shelf life shall not expire withing one (1) year.</p>	<p>Ethanolamine (ETA) is Clear, Colourless Liquid used in industrial applications as corrosion protection in pipelines and vessels.</p>

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<p>AMMONIA SOLUTION / AMMONIUM HYDROXIDE – 25% NH₄OH</p>	<p>190 KG; 210 L drum, 25 % NH₃ The Certificate of Compliance must comply with the chemistry specifications in DSG -317-031. The technical data sheet (TDS) is required with every delivery and must include manufacturing date, expiry date; and all chemicals with a shelf life shall not expire withing one (1) year.</p>	<p>Ammonium Hydroxide is colourless liquid used for pH adjustment. It is a strong base chemical.</p>
<p>100% HYDRAZINE HYDRATE / 64% HYDRAZINE N₂H₄</p>	<p>210 L; Drum The Certificate of Compliance must comply with the chemistry specifications in DSG -313-001. The technical data sheet (TDS) is required with every delivery and must include manufacturing date, expiry date; and all chemicals with a shelf life shall not expire withing one (1) year</p>	<p>64% Hydrazine is used as an oxygen scavenger in power generation steam / water systems.</p>
<p>SODIUM HYDROXIDE / CAUSTIC LYE SOLUTION (NaOH)</p>	<p>210 L drum, 45% The technical data sheet (TDS) is required with every delivery and must include manufacturing date, expiry date; and all chemicals with a shelf life shall not expire withing one (1) year</p>	<p>Sodium Hydroxide is colourless liquid used for pH adjustment. It is a strong base chemical used for neutralisation of the liquid waste treatment.</p>

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<p>HYDROCHLORIC ACID – 33% (HCL)</p>	<p>220kg / 210l DRUM; 33% The Certificate of Compliance must comply with the chemistry specifications in DSG -317-096. The technical data sheet (TDS) is required with every delivery and must include manufacturing date, expiry date; and all chemicals with a shelf life shall not expire withing one (1) year</p>	<p>HCL is a strong acid used for scale removal in Industrial applications.</p>
<p>POTASSIUM HYDROXIDE LIQUID (30%) KOH</p>	<p>220kg / 210l DRUM; 30% The Certificate of Compliance must comply with the chemistry specifications in DSG -317-094. The technical data sheet (TDS) is required with every with every delivery and must include manufacturing date, expiry date; and all chemicals with a shelf life shall not expire withing one (1) year</p>	<p>Potassium hydroxide (KOH) is an alkaline solution that is used in hydrogen generating plants.</p>
<p>ANTIFREEZE COOLANT - ETHYLENE GLYCOL (100%) (CH₂OH)₂</p>	<p>1 L; 210 L Drum The Certificate of Compliance must comply with the chemistry specifications in DSG -317-076. The technical data sheet (TDS) is required with every delivery and must include manufacturing date, expiry date; and all chemicals with a shelf life shall not expire withing one (1) year.</p>	<p>Antifreeze is liquid used as a coolant engine radiators to regulate the high temperatures in the engine.</p>

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ANTIFREEZE COOLANT - ETHYLENE GLYCOL (50%) (CH ₂ OH) ₂	1 L; 210 L Drum The Certificate of Compliance must comply with the chemistry specifications in DSG -317-076. The technical date sheet (TDS) is required with every delivery and must include manufacturing date, expiry date; and all chemicals with a shelf life shall not expire withing one (1) year.	Diluted Antifreeze is liquid used as a coolant engine radiators to regulate the high temperatures in the engine.
Hydrogen Peroxide 50% (H ₂ O ₂)	210 L Drum The Certificate of Compliance must comply with the chemistry specifications in DSG -317-076. The technical date sheet (TDS) is required with every delivery and must include manufacturing date, expiry date; and all chemicals with a shelf life shall not expire withing one (1) year.	Strong Oxidising Agent
Hydrogen Peroxide 30% (H ₂ O ₂)	25 L Drum The Certificate of Compliance must comply with the chemistry specifications in DSG -317-076. The technical date sheet (TDS) is required with every delivery and must include manufacturing date, expiry date; and all chemicals with a shelf life shall not expire withing one (1) year.	Strong Oxidising Agent

Table 2: Specific description and application of Wet Chemicals to be supplied.

Material	Description	Internal Comment	Unit of Measure	5 Year Demand
0257020	NITRIC ACID (HNO ₃)	DSG-317-094; 0384/87Q; Q4:NSF:NC:NEV; (MATERIAL SAFETY DATA SHEET (MSDS) AND OR TECHNICAL DATE SHEET (TDS) REQUIRED WITH EVERY DELIVERY AND MUST INCLUDE MANUFACTURING DATE, EXPIRY DATE AND ALLOWABLE DEVIATION OF PRODUCT); ALL CHEMICALS WITH A SHELF-LIFE, SHALL NOT EXPIRE WITHIN ONE (1) YEAR; COMM GR 55% NITRIC ACID; MNF:N/A; P/NO:N/A; CONTAINER:33kg	kg	800

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0256965	ETHANOLAMINE/ MONOETHANOLAMINE (98% wt.) (HO-CH ₂ -CH ₂ -NH ₂)	DSG-317-094 + COA; GROUP-21; 0029/99Q; Q3:NSF:NC:NEV;CHEMICAL; MNF: CJ PETROW/UNION CARBIDE; TYPE: PRIMARY AMINE; FORM: COLOURLESS LIQUID; CONTAINER CAPACITY: 220 KG; CONTAINER: DRUM; TRADE NAME: MONOETHANOLAMINE; (MATERIAL SAFETY DATA SHEET (MSDS) AND OR TECHNICAL DATE SHEET (TDS) REQUIRED WITH EVERY DELIVERY AND MUST INCLUDE MANUFACTURING DATE,EXPIRY DATE AND ALLOWABLE DEVIATION OF PRODUCT); ALL CHEMICALS WITH A SHELF-LIFE, SHALL NOT EXPIRE WITHIN ONE (1) YEAR); MONOETHANOLAMINE THE MONO-ETA WILL BE USED ON THE - SECONDARY SYSTEMS OF BOTH UNITS 1 & 2 FOR PH ADJUSTMENT; CRACK APPROVED - CATEGORY 1; DIMEN:220 KG DRUMS; FREEZING POINT:10.5 DEG C; BOILING POINT:170 DEG C; STORAGE TEMPERATURE:18 DEG C TO 35 DEG C; MATL:PLEASE SUPPLY IN PLASTIC DRUMS OF 210kg AS REQUESTED BY CHEMISTRY	kg	21,000
0256966	AMMONIA SOLUTION / AMMONIUM HYDROXIDE 25% NH ₄ OH	DSG-317-031; \GROUP-21; 0029/99Q; Q3:NSF:NC:NEV; (MATERIAL SAFETY DATA SHEET (MSDS) AND OR TECHNICAL DATE SHEET (TDS) REQUIRED WITH EVERY DELIVERY AND MUST INCLUDE MANUFACTURING DATE,EXPIRY DATE AND ALLOWABLE DEVIATION OF PRODUCT); ALL CHEMICALS WITH A SHELF-LIFE, SHALL NOT EXPIRE WITHIN SIX (6 MONTHS); CHEMICALLY PURE AMMONIA SOLUTION CRACK APPROVED - CATEGORY 1; MFR: A.E.C.I; P/N: NH 4 OH; DIMEN: 190KG; (RETURNABLE PLASTIC DRUM-210 LITRE); SODIUM:NOT MORE THAN 1PPM (M/M)AS NA	kg	14,200
0256981	100% HYDRAZINE HYDRATE / 64% HYDRAZINE(N ₂ H ₄)	DSG-313-001 + COA; GROUP-21; 0131/88Q; Q4:NSF:NC:NEV; CHEMICAL; MNF: BAYER SA; TYPE: HYDRAZINE HYDRATE; FORM: AQUEOUS SOLUTION; CONTAINER CAPACITY: 210 L; CONTAINER: DRUM; CONVERSION FACTOR 210 L = 210 KG; TRADE NAME: LEVOXIN 64 PCT; (MATERIAL SAFETY DATA SHEET (MSDS) AND OR TECHNICAL DATE SHEET (TDS) REQUIRED WITH EVERY DELIVERY AND MUST INCLUDE MANUFACTURING DATE,EXPIRY DATE AND ALLOWABLE DEVIATION OF PRODUCT); ALL CHEMICALS WITH A SHELF-LIFE, SHALL NOT EXPIRE WITHIN ONE (1) YEAR; HYDRAZINE HYDRATE (LEVOXIN 64%); MAX IMPUR: SP 1,032G / CM2; PH (20C) 1%; VISC -20C 1,50CP; BOIL P 120C; AMMONIA 0,15%; IRON 0,5PPM; SODIUM 0,2PPM; CHLOR -1PPM; NICKEL 0,05PPM; CHROM 0,05PPM; NOTE: ALL DELIVERIES CRACK APPROVED - CATEGORY 1; MUST HAVE RANGE: 200L;	L	50,000
0257019	SODIUM HYDROXIDE / CAUSTIC LYE SOLUTION 45%(NaOH)	C.O.C; 0113/86Q; Q4:NSF:NC:0; (MATERIAL SAFETY DATA SHEET (MSDS) AND OR TECHNICAL DATE SHEET (TDS) REQUIRED WITH EVERY DELIVERY AND MUST INCLUDE MANUFACTURING DATE,EXPIRY DATE AND ALLOWABLE DEVIATION OF PRODUCT); ALL CHEMICALS WITH A SHELF-LIFE, SHALL NOT EXPIRE WITHIN ONE (1) YEAR; CAUSTIC-LYE- SOL STRENGTH 45-50% MEMBRANE GRADE 210L DRUM CONTAINERS; SUGGESTED SUPPLIER:PROTEA IND	L	630

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0256982	HYDROCHLORIC ACID – 33%(HCL)	DSG-317-096; 0113/86Q; Q4:NSF:NC:NEV; CHEMICAL; YPE: ACID; FORM: LIQUID; CONTAINER CAPACITY: 220 kg; CONTAINER: DRUM; TRADE NAME: HYDROCHLORIC ACID; COMPOSITION: 30- 33 PCT; COLOR: CLEAR AQUEOUS SOLUTION; CAS REGISTRY NUMBER: 7647-01-0/4; EINECS NUMBER: 231-595-7; MSDS NUMBER: 017-002-00-2; GRADE: TECHNICAL	kg	34100
0711412	POTASSIUM HYDROXIDE30% (KOH)	DSG-317-094; 0029/99Q; Q3:NSF:NC:0:L3; CHEMICAL; MNF: DYNACHEM; TYPE: 30% POTASSIUM HYDROXIDE; FORM: LIQUID; CONTAINER CAPACITY: 210 kg; CONTAINER: PLASTIC DRUM; TRADE NAME: POTASSIUM HYDROXIDE; COMPOSITION: KOH - POTASSIUM METAL CATION AND HYDROXYL ANION; COLOR: WHITE / SLIGHTLY YELLOW; CAS REGISTRY NUMBER: 1310-58-3; MSDS NUMBER: 215-181-3; GRADE: AQUEOUS; SPECIFICATION: HG/T3688-2010; SUPPLIER TO PROVIDE C.O.A OF THE PRODUCT CLEARLY STATING PURITY, CHLORIDE, SULPHATE SODIUM, SILICA AND IMPURITY LEVELS	210 L Drum	3
0528380	ANTIFREEZE COOLANT - ETHYLENE GLYCOL (100%) (CH ₂ OH) ₂	DSG-317-076; 0011/12C; Q3:NSF:NC:NEV; SEE EQUIVALENCE M052/11E REV1; SEE OLD MATERIALNO.0256199; (MATERIAL SAFETY DATA SHEET (MSDS) AND OR TECHNICAL DATE SHEET (TDS) REQUIRED WITH EVERY DELIVERY AND MUST INCLUDE MANUFACTURING DATE,EXPIRY DATE AND ALLOWABLE DEVIATION OF PRODUCT ALL CHEMICALS WITH A SHELF-LIFE,SHALL NOT EXPIRE WITHIN ONE (1) YEAR); ANTI-FREEZE/COOLANT; MFR:SASOL; SUPPLIER:SASOL; COOLANT TYPE:SASOL COOLANT CONC 100; CHEMICAL COMPOSITION:ETHYLENE GLYCOL TYPE; COLOUR:GREEN; KBA:0915G041091; M/MAN:310 VOL 1; 210L	L	27000
0256978	ANTIFREEZE COOLANT - ETHYLENE GLYCOL (50%) (CH ₂ OH) ₂	DSG-317-094; 0029/99Q; Q3:NSF:NC:NEV; (SEE EQUIVALENCE M044/09E); (SEE OLD MATERIALNO.0157158); (MATERIAL SAFETY DATA SHEET (MSDS) AND OR TECHNICAL DATE SHEET (TDS) REQUIRED WITH EVERY DELIVERY AND MUST INCLUDE MANUFACTURING DATE,EXPIRY DATE AND ALLOWABLE DEVIATION OF PRODUCT); ALL CHEMICALS WITH A SHELF-LIFE, SHALL NOT EXPIRE WITHIN ONE (1) YEAR; ANTIFREEZE/COOLANT, FOR EMERGENCY DIESEL ENGINES; (CRACK APPROVED - CATEGORY 1); NAME:SHELL HD ULTRA ELC COOLANT PRE-DILUTED 50/50; TYPE:MONO-ETHYLENE-GLYCOL BOILING POINT @ 101.3KPA:>129°C DENSITY @ 15°C:1120 FREEZING POINT 4°C:-37°C; M/MAN:310 VOLUME 1; 210L	L	210
0614161	HYDROGEN PEROXIDE 50% (H ₂ O ₂)	210L Drum	L	420

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0613437	HYDROGEN PEROXIDE 30% (H ₂ O ₂)	25L Drum	L	20
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5 Categories of labour required.

5.1 The Contractor shall be responsible for the safe delivery of Wet Chemicals to KNPS Site Stores using roadworthy vehicles that comply with all relevant legislation including the following:

- National Road Traffic Act 93 of 1996
- National Road Traffic Regulation, 2000

5.2 The Contractor shall ensure that drivers delivering Wet Chemicals to KNPS meet Koeberg Nuclear Power Station access requirements:

- Have valid national driver's license.
- Not under the influence of intoxication substances including drugs and alcohol.
- Have no criminal record.

6 Timing and planning

6.1 Start Date 1 November 2024

6.2 Completion Date 30 October 2029

7 Shift work

Not applicable, however the supplier might be expected to supply outside the normal working hours including public holidays and weekends.

8 Training

8.1 The Contractor shall ensure that the Contractor's staff responsible for the delivery of Wet Chemicals are suitably qualified and have undergone an inhouse training specific to the work to be executed under the contract.

8.2 Site access training for delivery personnel, where applicable and required.

9 ACCESS FORMALITIES

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9.1 Access to the Koeberg Nuclear Power Plant is controlled and reserved. The Supplier shall comply with the various access requirements as stipulated in the KAA 777: "PROCESS FOR ACCESS TO KOEBERG NUCLEAR POWER STATION".

9.2 The mandatory Personal Protective Equipment (PPE) is displayed in various sections/areas at Koeberg Nuclear Power Station. However, the following are required as a minimum:

9.2.1 Hard hat with a chin strap,

9.2.2 Safety boot with a toe cap,

9.2.3 Gloves,

9.2.4 Ear protection and

9.2.5 Safety glasses

9.3 The service provider is responsible to supply all his/her staff with this PPE and any safety equipment required to perform work safely.

10 Eskom scope of supply

10.1 Eskom shall supply the following in support of the works:

- Access to Site.
- On / Offloading goods on KNPS Site

11 Quality requirements

11.1 As described in the contract document.

12 Documentation and References

12.1 DSG-317-094

12.2 DSG-313-090

12.3 DSG-313-001

12.4 DSG-317-076

12.5 DSG-317-031

12.6 DSG-317-096

12.7 DSG KAA 777: Process for access to Koeberg Nuclear Power Station

12.8 KAA: Chemical Restrictions And Controls At Koeberg (CRACK) Programme

12.9 Occupational Health and Safety Act, 85 of 1993

13 Pricing structure

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13.1 The contractual price agreed upon in the concerned contract shall include all taxes, contributions, and accessory expenses of all kinds, as well as delivery unloaded to KNPS.

13.1.1 Such price shall also include the following:

13.1.1.1 Cost of Wet Chemicals,

13.1.1.2 Costs associated with and related to all transportation and deliveries, contractor's employees, and PPE required for the implementation of the concerned contract,

13.1.1.3 Costs associated with and related to testing and accompanying certificates,

13.1.1.4 Costs associated with and related to the performance of the inspections,

13.1.1.5 Costs associated with and related to the contractor's insurance costs,

13.1.1.6 Costs associated with and related to meeting the requirements of the applicable legislations such as OHSAct, National Road Traffic Act and NEMA Regulations.

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