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RFQ Number	NLM-QUO-25/059
Request for Quotation Date	01 July 2025
RFQ Closing Date	04 July 2025
RFQ Closing Time	17:00
Compulsory Site Briefing	Not compulsory but if more information required can be arranged
Contact Person	Catherine Matima
Quotation Validity	90 Days from the closing date
Submission Details	RFQ Response must be sent to: catherine.matima@necsa.co.za
RFQ Description	To design, manufacture and supply Liquid Holding Tanks as per the attached specification sheets

Dear Service Provider

Kindly provide a quotation for goods and or services as outlined in section 2 of this document.

1. Introduction

The South African Nuclear Energy Corporation Limited (Necsa) is a state-owned public company (SOC), registered in terms of the Companies Act, (Act No. 61 of 1973), registration number 2000/003735/06.

The Necsa Group engages in commercial business mainly through its wholly-owned commercial subsidiaries: NTP Radioisotopes SOC Ltd (NTP), which is responsible for a range of radiation-based products and services for healthcare, life sciences and industry, and Pelchem SOC Ltd (Pelchem), which supplies fluorine and fluorine-based products. Both subsidiaries, together with their subsidiaries, supply local and global markets, earning valuable foreign exchange for South Africa and are among the best in their field in their respective world markets.

Necsa's safety, health, environment and quality policies provides for top management commitment to compliance with regulatory requirements of ISO 14001, OHSAS 18001 and RD 0034 (Quality and Safety Management Requirements for Nuclear Installations), ISO 9001 and ISO 17025.

Necsa promotes the science, technology and engineering expertise of South Africa and improves the public understanding of these through regular communications at various forums and outreach programmes to the community. We are a proudly South African company continuously striving, and succeeding in many respects, to be at the edge of science,

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technology and engineering related to the safe use of nuclear knowledge to improve our world.

For more information on Necsa, please visit: www.Necsa.co.za

2. Background

Necsa plans to establish a plasma gasification demonstration facility in a laboratory on-site to volumetrically reduce uranium-containing PTFE candle filters. Liquid holding tanks are utilized in various applications within the facility. A total of two tanks are required, as follows:

- i) One 2-m³ tank, T83155, to periodically prepare an aqueous solution containing 30% (w/w) potassium hydroxide. This is done by introducing solid potassium hydroxide flakes or pellets in a controlled manner into a batch of demineralized water inside the tank. The solid is added manually via the top of the tank, with the tank's contents continuously agitated to facilitate mixing. This is accomplished by means of an agitator that is mounted from the top of the tank. Owing to the heat generated during this exothermic process, the tank's contents is continuously recirculated through an external cooling loop and back into the tank to ensure that the solution temperature never exceeds 45 °C.

Further detail of tank T83155 is provided in the Specification Sheet [02] and the Piping and Instrumentation Diagram (P&ID) [03], as per Section 4 of this document.

- ii) One 1.5-m³ tank, T83237, to serve as a buffer tank for the holding of demineralized water in the primary cooling system. Water is continuously drawn from the tank and recirculated to various users in the facility for cooling purposes. The water is then returned to the tank, after it is cooled in an external heat exchanger. In this way, the water temperature in the tank never exceeds 30 °C.

Further detail of tank T83237 is provided in the Specification Sheet [01] and the P&ID [04], as per Section 4 of this document.

3. Scope of Work

Item Description	Quantity
To design, manufacture and supply the required liquid holding tanks, T83155 and T83237, as per the attached Specification Sheets, [02] and [01], respectively.	2 (i.e. one of each tank)

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Specifically for tank T83155, a suitable agitator shall be sourced by the supplier and installed on the tank for the intended purpose. All other equipment and components identified in Section 2 and/or shown in the P&IDs [03] and [04] are outside the scope of work considered here.	
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4. Attachments

Ref #	DOCUMENT NAME	DESCRIPTION
01	ENS-FDP-SPE-24015, Rev. 1	Specification Sheet for Primary Cooling Water Tank T83237
02	ENS-FDP-SPE-24016, Rev. 1	Specification Sheet for KOH Solution Top-Up Tank T83155
03	ENS-FDP-PID-24003, Rev. 5	PTFE Facility Destruction Project: P&I Diagram – KOH Scrubber System 831
04	ENS-FDP-PID-24004, Rev. 4	PTFE Facility Destruction Project P&I Diagram – Cooling Water System 832

5. Pricing

- All price quoted to include all applicable taxes.
- Price must be fixed and firm.
- Price should include additional cost elements such as freight, insurance until acceptance, duty where applicable, disbursements etc.
- Quotation must be completed in full, incomplete quote could result in a quote being disqualified.
- Payment will be according to Necsa's General Conditions of Purchase.

6. Evaluation

6.1. Phase 1- Functionality Evaluation / Technical Evaluation

Where functional or technical evaluation criterion is applicable, assessment will be performed in terms of the criterion listed below and the criterion may include Technical, Performance, Quality and Risk.

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If the Bidder's response to the Technical templates does not indicate that the Bidder can support an acceptable technical solution, the Bidder's response will be rejected and not evaluated further.

Together the Technical, Performance & Quality and Risk criteria make up the functionality criterion and a Bidder's Proposal will be evaluated for functionality out of a possible 100 points. Only RFQ responses achieving an evaluation score of greater than the set threshold points out of the possible 100 points and which score a number of points for functionality that is greater than or equal to the set threshold points of the number of points achieved by the highest scoring Bid for functionality will be selected to progress to the second stage.

If the Bidder's response to the Technical templates does not indicate that the Bidder can support an acceptable technical solution, the Bidder's response will be rejected and not evaluated further.

Item	Requirement	Weight	Points	Criteria
1	Company Experience (40 points). Relevant company (or JV/Sub-contractor) experience in the design and manufacture of liquid holding tanks. Completed projects: List of past projects, which must include information on the client's details, scope of work, project value, duration of the project, etc. The supplier must adequately demonstrate how experience gained in past projects aligns with the scope of work for the Necsa project considered here.	40	40	More than 10 projects completed
			30	Seven to Nine projects completed
			20	Five to Six projects completed
			10	Two to Four projects completed
			0	Less than two projects completed
2	Traceable reference letters from previous clients for whom the supplier has designed and manufactured liquid holding tanks (30 points). 1. Company letter head 2. Contact details of the company 3. Purchase order amount 4. Nature of the service rendered by the supplier.	30	30	Three (3) or more reference letters from the companies for whom the supplier has designed and manufactured liquid holding tanks
			20	Two (2) reference letters from the companies for whom the supplier has designed and manufactured liquid holding tanks
			10	One (1) reference letter from a company for whom the supplier has designed and manufactured liquid holding tanks
			0	No reference letter.

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Item	Requirement	Weight	Points	Criteria
3	ISO 9001: 2015 (or latest) accreditation (30 points). Must provide evidence (ISO certificate or equivalent)	30	30	ISO 9001 accreditation
			0	Not ISO 9001 accredited
Total		100		

Note: Bidders that score <80 out of 100 in respect of Technical/Functional evaluation criteria will be regarded as submitting a non-responsive bid and will not be evaluated further.

6.2. Phase 2 - Evaluation In Terms Of Preferential Procurement Policy Framework Act, 2022

This bid will be evaluated and adjudicated according to the 80/20 point system, in terms of which a maximum of 80 points will be awarded for price and 20 points will be allocated based on the specific goals (B-BBEE status level).

	POINTS
PRICE	80
SPECIFIC GOALS (B-BBEE status level)	20
Total points for Price and SPECIFIC GOALS	100

Preference goal
B-BBEE status level contributor

B-BBEE Status Level of Contributor	Number of points (80/20 system)
1	20
2	18
3	14
4	12
5	8

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6	6
7	4
8	2
Non-compliant contributor	0

7. Required Documentation

- Tax Clearance Certificate (Tax pin issued by SARS)
- Declaration of interest (SBD 4)
- BEE Certificate / Applicable Affidavit if classified as EME
- Letter of Good Standing (COID) only if Applicable due to the nature of work required
- Any other document or certification that might have been requested on this RFQ

8. Important

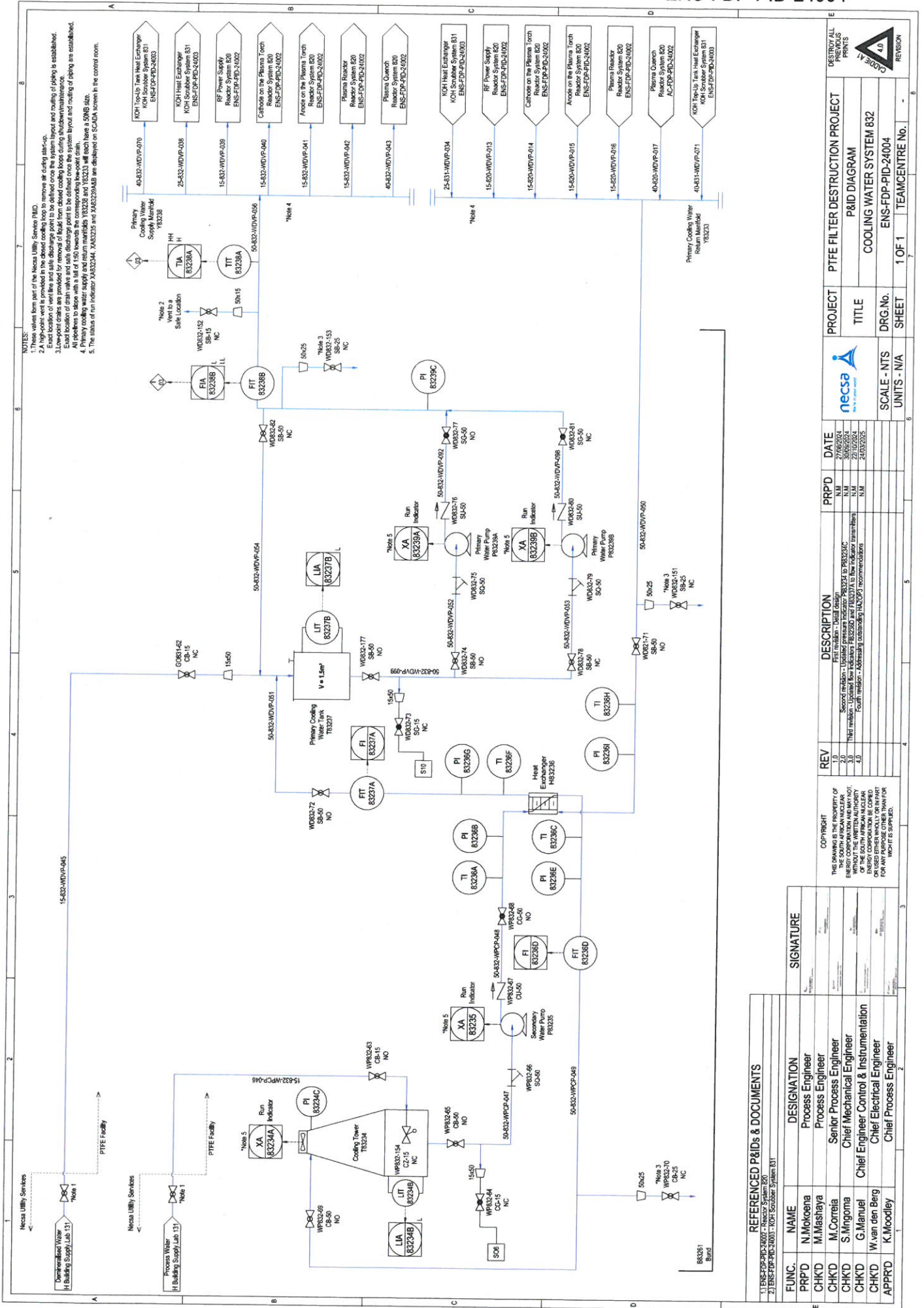
- 8.1. Quotation must be submitted on or before the RFQ closing date and time stated above.
- 8.2. Orders above R 30 000 will be evaluated according to the PPPFA 80/20-point system and a functionality scorecard where applicable and the ones above R 1 Million will be subjected to the tender process.
- 8.3. This RFQ is subjected to the Necsa's General Conditions of Purchase, Preferential Procurement Policy Framework Act 2000 and the Preferential Procurement Regulations, 2022, the General Conditions of Contract (GCC) and, if applicable, any other legislation or special conditions of contract.
- 8.4. Failure on the part of a bidder to submit proof of B-BBEE Status level of contributor together with the bid, will be interpreted to mean that preference points for specific goals are not claimed.
- 8.5. The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to specific goals, in any manner required by the purchaser.
- 8.6. For a Bidder to obtain clarity on any matter arising from or referred to in this document, please refer queries, in writing, to the contact details provided above. Under no circumstances may any other employee within Necsa be approached for any information. Any such action might result in a disqualification of a response submitted in competition to this RFQ.
- 8.7. No goods and/or services should be delivered to Necsa without an official Necsa Purchase order.
- 8.8. Necsa reserves the right to; cancel or reject any quote and not to award the RFQ to the lowest Bidder or award parts of the RFQ to different Bidders, or not to award the RFQ at all.

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- 8.9. The supplier shall under no circumstances offer, promise or make any gift, payment, loan, reward, inducement, benefit or other advantage, which may be construed as being made to solicit any favour, to any Necsa employee or its representatives. Such an act shall constitute a material breach of the Agreement and the Necsa shall be entitled to terminate the Agreement forthwith, without prejudice to any of its rights
- 8.10. By responding to this request, it shall be construed that: the bidder, hereby acknowledge to be fully conversant with the details and conditions set out in the Necsa's General Conditions of Purchase, Preferential Procurement Policy Framework Act 2000 and the Preferential Procurement Regulations, 2022, the General Conditions of Contract (GCC), Technical Information and Specifications attached, and hereby agree to supply, render services or perform works in accordance therewith.



- NOTE:
1. SECONDARY ENCLOSURE IS A CONTINUATION OF THE SAME BOB BEHINDING ACJING-PHONG-PADE.
2. LINE AND SWAYER MIGHT BE CONTINUED DURING DESIGN OF THE VENTILATION SYSTEM.
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REFERENCED P&IDs & DOCUMENTS

- ENS-FDP-PID-24002 - Reactor System 200
- ENS-FDP-PID-24003 - T&P Reactor System 200

FUNC.	NAME	DESIGNATION	SIGNATURE
PRPD	N. Mokone	Process Engineer	
CHKD	M. Mashaya	Process Engineer	
CHKD	M. Correia	Senior Process Engineer	
CHKD	S. Mngoma	Chief Mechanical Engineer	
CHKD	G. Manuel	Chief Engineer Control & Instrumentation	
CHKD	W. van den Berg	Chief Electrical Engineer	
APPRD	K. Moodley	Chief Process Engineer	

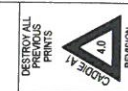
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REV

REV	DESCRIPTION	PRPD	DATE
1.0	First Edition - Initial Design	N.M.	27/07/2024
2.0	Second revision - Updated pressure indicator PR224 to PR224C	N.M.	27/07/2024
3.0	Third revision - Updated flow indicator PR225 to PR225A to flow indicator transmitter	N.M.	27/07/2024
4.0	Fourth revision - Addressing outstanding IACS recommendations	N.M.	24/03/2025



PROJECT	PTFE FILTER DESTRUCTION PROJECT
TITLE	P&ID DIAGRAM
DRG. No.	COOLING WATER SYSTEM 832
SCALE - NTS	ENS-FDP-PID-24004
UNITS - N/A	1 OF 1
TEAMCENTRE No.	



1

2

3

4

5

DO NOT SCALE!

PROJECTION

IF IN DOUBT, ASK

DESCRIPTION

Task T1327 is used as a buffer for the holding of demineralised cooling water in the PTFE destruction demonstration facility

PLANT LOCATION

Outside Blockhouse 131, Building V442

SAFETY CLASSIFICATION

Necsa, Potentially, North-West Province

QUALITY CLASSIFICATION

Non-classified (N) and SC-3(C)

FLUID PROPERTIES

FLUID

Demineralised Water

MASS FLOW RATE (m³/h)

16129 [1]

DENSITY (kg/m³)

999.67 at 30 °C [8]

VISCOSITY (cP)

0.7 at 30 °C [8]

THERMAL CONDUCTIVITY (W/m.K)

0.615 at 30 °C [8]

SPECIFIC HEAT CAPACITY (kJ/kg.K)

4.18 at 30 °C [8]

CORROSION RISK TO

N/A

MASS EMPTY (kg)

Supplier to advise

CAPACITY OF TANK (L)

0.00

VOLUME OF FLUID (L)

-

TEMPERATURE (°C)

-

DESIGN

DESIGN

OPERATING

1595

MINIMUM

0

TEST

Supplier to advise

TYPE OF PRESSURE TEST

HYDROSTATIC

DESIGN CODE

ASME B31.3-2002 (RD 1981)

SPECIFICATION

N/A

LABELLING

N/A

TANK HEIGHT (m)

1.97 [4]

TANK DIAMETER (m)

0.98 [4]

No. of LEG SUPPORTS

3

AGITATOR REQUIREMENTS

AGITATOR REQUIRED

N

AGITATOR SPECIFICATIONS / DATASHEET NO.

N/A

COOLING/HEATING REQUIREMENTS

COOLING/HEATING REQUIRED

N

COOLING/HEATING SPECIFICATIONS / DATASHEET NO.

N/A

NOTES AND REFERENCES

(1) ENS-FDP-240405, Energy Balance Calculation for the PTFE Filter Destruction System

(2) ENS-FDP-240906, Equipment Pumping Sizing Report for PTFE Demonstration Facility

(3) ENS-FDP-240906, Equipment Pumping Sizing Report for PTFE Demonstration Facility

(4) ENS-FDP-240906, Equipment Pumping Sizing Report for PTFE Demonstration Facility

(5) ENS-FDP-240906, Equipment Pumping Sizing Report for PTFE Demonstration Facility

(6) PTFE Water Supply to Townsville Municipality, 1 Month Water Quality Report

MATERIAL

SHELL

SS 304L

FLANGES

SS 304L/COMPOUND, ASME B16.5

HEADS

SS 304L/COMPOUND, ASME B16.5

PIPE NOZZLES

SS 304L/COMPOUND, ASME B16.5

SUPPORTS

Stainless steel

GASKETS

1/16" thick flexible graphite aramid SS

UTILITIES

PTFE/316 SS BOLTS

MARK

NB

RATING AND ENDING

N/A

DESCRIPTION

Demineralised Cooling Water Inlet Nozzle

N1

15

Weld Neck Flange, RF, Class Rating 150

Demineralised Cooling Water Outlet Nozzle

N2

50

Weld Neck Flange, RF, Class Rating 150

Loose fitting for easy maintainability

N3

-

Supplier to advise

NON DESTRUCTIVE TESTING (NDT)

DYE/PENETRANT

N

CHEMICAL CLEANING

N

MAGNETIC PARTICLE TESTING

N

ULTRASONIC

N

HARDNESS TESTING

N

X-RAY

N

QUALITY CONTROL BLOCK

N

REVISION HISTORY

Revision

1

Description

First Issue

By

Mmole Nkomo

Date

10-09-24

APPROVAL

DISCIPLINE

NAME

SIGNATURE

DATE

Prepared

Process Engineer

MK Nkomo

Checked

Process Engineer

BM Mokoena

Checked

Senior Process Engineer

BM Khumalo

Checked

Mechanical Engineer

M. Mase

Checked

Chief Mechanical Engineer

S. Mngoma

Checked

Chief CAI Engineer

G. Manuel

Approved

Chief Process Engineer

K. Moodley

REVISION HISTORY

Revision

1

Description

First Issue

By

Mmole Nkomo

Date

10-09-24

CONFIDENTIAL

Document No.

ENS-FDP-SPE-24015

Revision

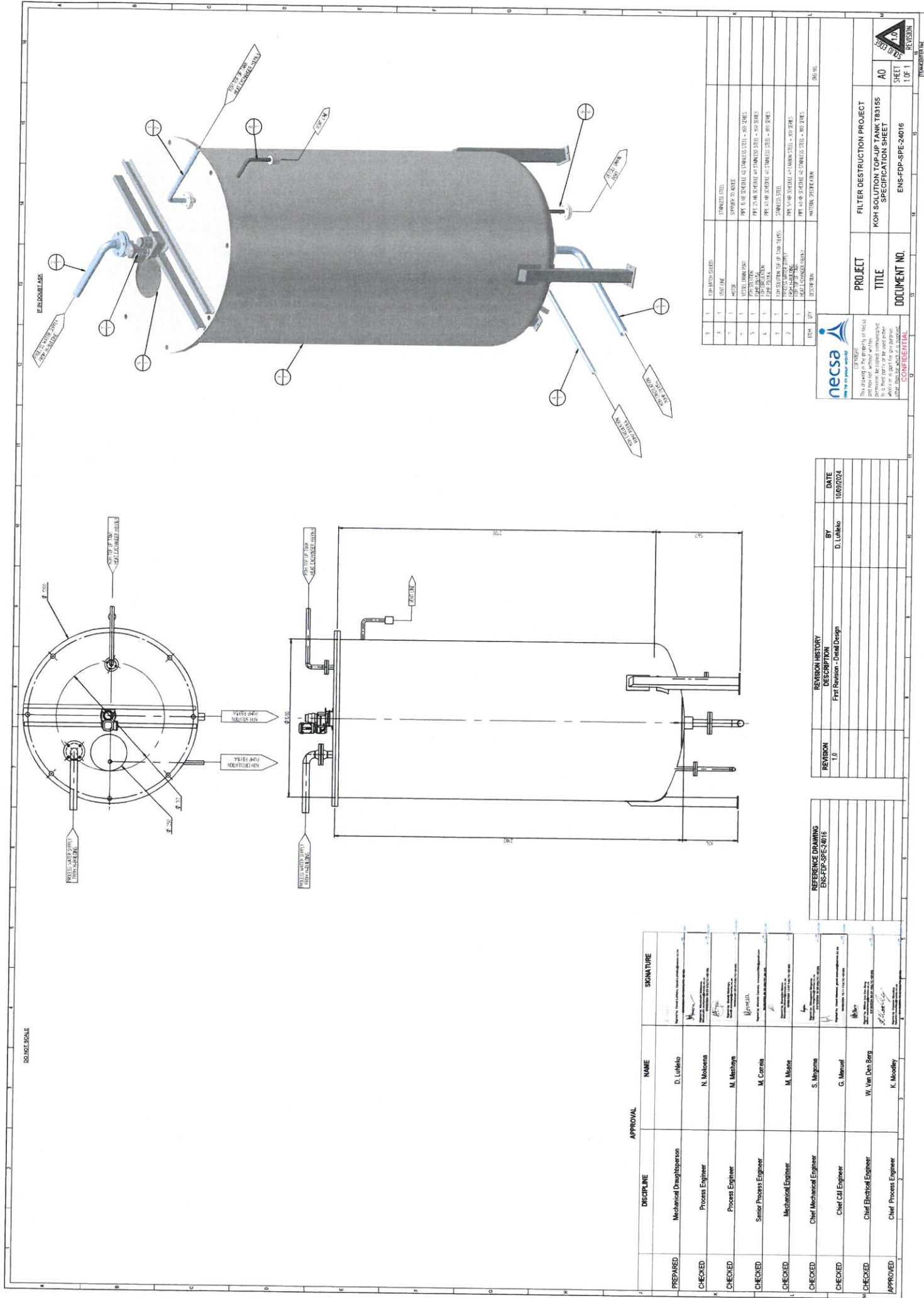
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DESTROY ALL PREVIOUS PRINTS

1

Primary Cooling Water Tank Specification Sheet

PTFE Filter Destruction Project



APPROVAL		
DISCIPLINE	NAME	SIGNATURE
PREPARED	Mechanical Draughtsperson	D. Lufeko
CHECKED	Process Engineer	N. Molana
CHECKED	Process Engineer	M. Moshale
CHECKED	Senior Process Engineer	M. Corrie
CHECKED	Mechanical Engineer	M. Mene
CHECKED	Chief Mechanical Engineer	S. Mngoma
CHECKED	Chief Civil Engineer	G. Maseko
CHECKED	Chief Electrical Engineer	W. Van Der Berg
APPROVED	Chief Process Engineer	K. Moodley

REVISION	DESCRIPTION	DATE
1.0	First Revision - Detail Design	10/09/2024

REVISION HISTORY	DESCRIPTION	DATE
1.0	First Revision - Detail Design	10/09/2024



NECA
NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION OF SOUTH AFRICA

PROJECT: FILTER DESTRUCTION PROJECT

TITLE: KOH SOLUTION TOP-UP TANK T83155

DOCUMENT NO.: ENS-FDP-SPE-24016

REVISION: 1.0

SHEET: 1 OF 1

REVISION: 1.0

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