RFQ Number	**NLM-QUO-23/**070
Request for Quotation Date	**08 November 2023**
RFQ Closing Date	**30 November 2023**
RFQ Closing Time	**17:00**
Compulsory Site Briefing	**22/11/2023 (Not compulsory)**
Contact Person	**Matome Ramotlou**
Quotation Validity	**18 Days from the closing date**
Submission Details	**RFQ Response must be sent to:** matome.ramotlou@necsa.co.za and catherine.matima@necsa.co.za
RFQ Description	Conduct 3D Scanning of A26 Smelter Plant Infrastructure as per **(NLM-SCP-00006)** The scope includes the work to be performed and its associated deliverables by the appointed service provider during 3D scanning, 3D-modelling, and generation of 3D CAD models eligible for production of 3D drawings for the A26 smelter plant within NECSA. The 3D data captured will be post-processed and used to generate missing engineering data required for the licensing of the A26 smelter facility by the National Nuclear Regulator (NNR).

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, 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. Scope of Work

Item Description	Quantity
Conduct 3D-Scanning of A26 Smelter Plant Infrastructure as per (NLM-SCP-00006)	1

3. 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.

4. Evaluation

4.1. 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. 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.

4.2. **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-BBE 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
6	6
7	4
8	2
Non-compliant contributor	0

5. 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**

6. Important

6.1. **Quotation must be submitted on or before the RFQ closing date and time stated above.**

6.2. **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.**

6.3. **This RFQ is subjected to the Necsa's General Conditions of Purchase, Preferential Procurement Policy Framework Act 2000 and the Preferential Procurement Regulations Act, 2022, the General Conditions of Contract (GCC) and, if applicable, any other legislation or special conditions of contract**

6.4. **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.**

6.5. **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.**

6.6. **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.**

6.7. **No goods and/or services should be delivered to Necsa without an official Necsa Purchase order.**

6.8. **Necsa reserves the right to; cancel or reject any quote and not to award the Purchase Order to the lowest Bidder or award parts of the RFQ to different Bidders, or not to award the RFQ at all.**

6.9. **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**

6.10. **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.**

Technical / Functional Evaluation Criteria

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Item	Requirement	Weight	Points	Criteria
1	Experience in 3D scanning, 3D modelling, and generation of respective manufacturing drawings of the required Plant. (Attach letters from clients within the last five years or completion certificates).	40	40	More than 5 Years
			20	2-5 Years
			0	Less than 2 Years
2	Delivery Time	30	0	Quoted time to deliver more than 9 months
			20	Quoted time to deliver between 7 and 9 months
			30	Quoted time to deliver less than 7 months
3	Track Record: Bidder has experience in similar projects (Attach letters from clients within the last five years or completion certificates).	30	30	Bidder has executed and completed similar projects to scope of work with a minimum of 3 references
			20	Bidder has executed and completed similar projects to scope of work with a minimum of 2 references
			15	Bidder has executed and completed similar projects to scope of work with a minimum of 1 reference.
			0	Bidder has not executed and completed similar projects.
Total		**100**		

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

IMPORTANT

Supplier will need to score a minimum of 80 in order to be evaluated further to price and BEE.

Classification: OPEN

Document No:	**NLM-SCP-00006**
Department/Section	**NLM (SMELTER A26)**
TITLE:	**SCOPE OF WORK: 3D SCANNING OF A26 SMELTER PLANT INFRASTRUCTURE TO RECREATE MISSING ENGINEERING DATA**

Authorization

	NAME	SIGNED	DATE
PREPARED	**LL MHLANGA** (Senior Mechanical Engineer: Engineering & Projects)		22 October
REVIEWED	**MKM RAMOTLOU** (DS: Technician)		22 October
REVIEWED	**T MUNYAI** (Smelter: Section Head)		24 October
REVIEWED	**SR MNGOMA** (Chief Engineer: Mechanical Engineer: Engineering)		24 October
ACCEPTED	**LG MOGOTLHONG** (Project Manager)		24 October
APPROVED	**W NTHO** (DS: Facility Manager)		24 October

Distribution list

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SCOPE OF WORK: 3D SCANNING OF A26 SMELTER PLANT INFRASTRUCTURE TO RE-CREATE LOST ENGINEERING DATA

Table Of Contents

SCOPE OF WORK: 3D SCANNING OF A26 SMELTER PLANT INFRASTRUCTURE TO RE-CREATE LOST ENGINEERING DATA

1.0 PURPOSE

The purpose of this document is to define the Scope of Work (SOW) for the 3D scanning exercise of NECSA's A26 Smelter plant for the purpose of recreating missing engineering data and information, i.e., 3D models, drawings for plant components and subassemblies.

2.0 SCOPE

The scope of this document covers the detailed Scope of Work to be performed and its associated deliverables by the appointed service provider during 3D scanning, 3D modelling, and generation of respective manufacturing drawings for the A26 smelter plant within NECSA. The 3D data captured will be post-processed and used to generate missing engineering data required for the licensing of the A26 smelter facility by the National Nuclear Regulator (NNR).

3.0 REFERENCES

Not applicable.

4.0 DEFINITIONS AND ABBREVIATIONS

4.1 DEFINITIONS

3D Scanning : A non-destructive 3D measurement method that uses laser lights to capture the shape, size, geometry and texture of physical objects

4.2 *ABBREVIATIONS*

DS	:	Decontamination Servicers
FM	:	Facilities Management
NECSA	:	Nuclear Energy Corporation of South Africa
NLM	:	Nuclear Liabilities Management
NM	:	Nuclear Manufacturing
NNR	:	National Nuclear Regulator
NTP	:	Nuclear Technology Products
OEM	:	Original Equipment Manufacturer
PM	:	Property Management
SOW	:	Scope of Work
SSC	:	Structures, Systems and Components

5.0 RESPONSIBILITIES

5.1 SERVICE PROVIDER

The service provider will be responsible for carrying out 3D scanning and measurement of the A26 smelter plant i.e. equipment and SSC's using appropriate 3D scanning technology. The service provider will furthermore produce Point Cloud report and 3D CAD files for equipment and SSC's captured at A26 smelter plant.

5.2 FM, PM AND ENGINEERING SERVICES

FM, PM and Engineering Services will be responsible for reviewing the Point Cloud report and 3D CAD files and drawings provided by the service provider and undertake the decision-making role on the way forward regarding the application and the use of data provided.

6.0 FACILITY OVERVIEW

NECSA's NLM programme comprises of several running capital projects that seeks to address the liability of nuclear contaminated waste components within NECSA premises. One such project is the A26 smelter used for melting contaminated ferrous and non-ferrous metal components. The A26 smelter was built more than 10 years back by multiple contactors who are still in business whilst some have since closed shops.

Resuming of the A26 smelter project has prompted NECSA to re-engage these contractors with the aim of seeking support in relation to missing engineering data and information required for licensing of this facility with the NNR. The discovery that most of the contractors who were initially involved in the construction of the smelter facility has closed, creates a risk of failure to license this facility with the NNR due to missing critical facility information.

To address this challenge, NECSA seeks to acquire, as part of a reverse engineering exercise, the services of a suitable service provider to use sophisticated 3D scanning technology to acquire plant data and process this data into credible engineering information that support the original plant construction and licensing. 3D scanning is a newly developed technology used to capture the geometric and dimensional data of components, subassemblies and assembly's using laser lights in a form of point clouds. The object of interest is targeted using laser lights and, in the process, all external and internal surface information, i.e., geometry, is gathered allowing for further processing and generation of manufacturing drawings to reproduce that item. Refer to Figure 1 below as a typical example of one of the deliverables to be generated as part of the SOW.

SCOPE OF WORK: 3D SCANNING OF A26 SMELTER PLANT INFRASTRUCTURE TO RE-CREATE LOST ENGINEERING DATA

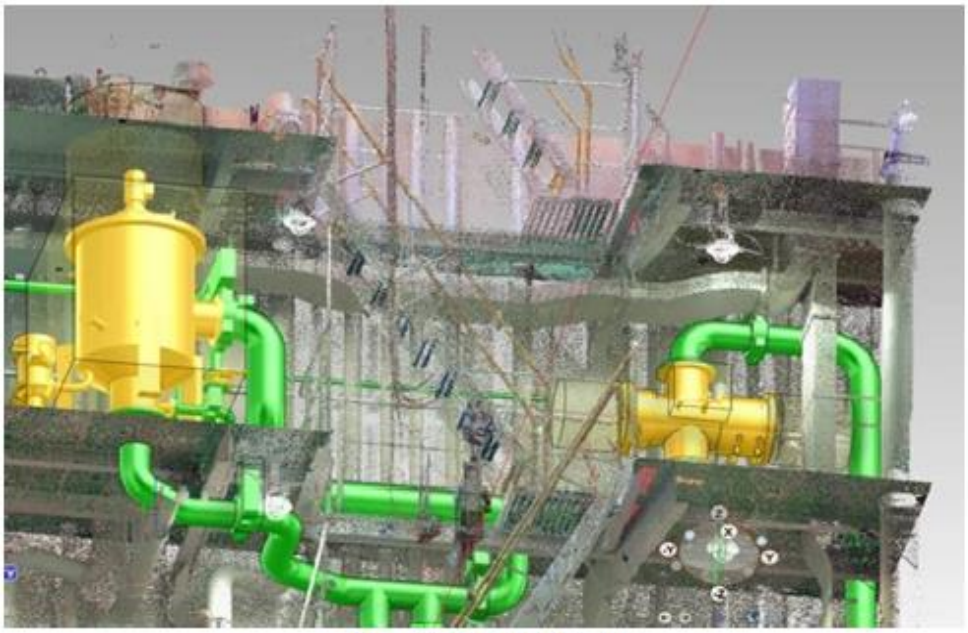

Figure 1: Typical 3D Plant Scan

7.0 PROCESS

NTP, recently conducted 3D plant scan on Cell 6, Building P3000 as means to set boundaries and constraints for the design of a mechanical discharges system for the ammonium bromide (NH_4Br) production line. The mechanical discharge system is set to be design, manufactured and installed underneath Cell 6 where access is for personnel is impossible without deconstruction of the shielded lead wall. The position, configuration of equipment situated underneath the cell was however important to install the proposed mechanical discharge system.

To determine position, configuration, and dimensions of concealed equipment underneath the Cell 6 a 3D scanner was used, see captured point cloud in Figure 2, and 3 below. Figure 4 and 5 subsequently shows the 3D CAD models of the bottom chamber with internal component geometry generated from this point cloud.

SCOPE OF WORK: 3D SCANNING OF A26 SMELTER PLANT INFRASTRUCTURE TO RE-CREATE LOST ENGINEERING DATA

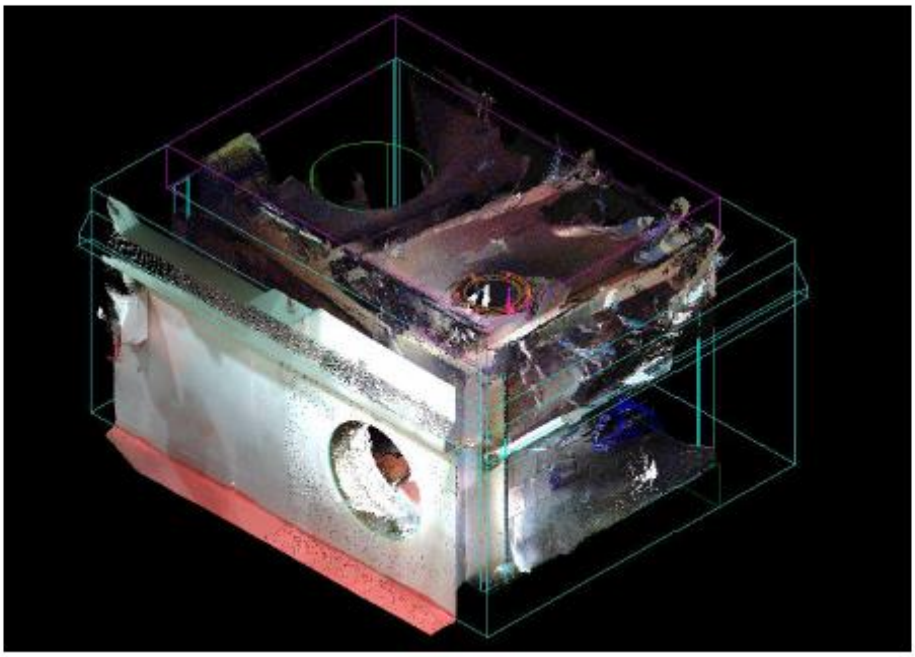

Figure 2: NTP Cell 6 Bottom Chamber 3D Scan (Point Cloud)

Figure 3: NTP Cell 6 Bottom Chamber 3D Scan Part 2 (Point Cloud)

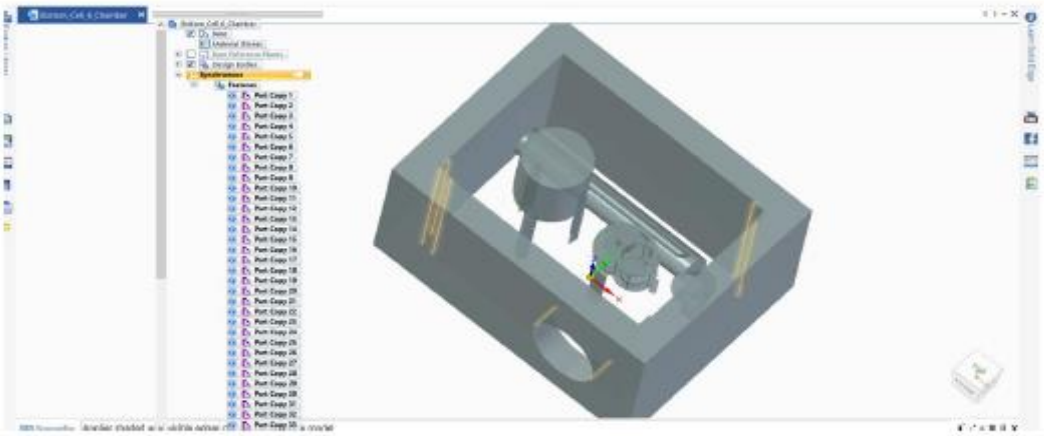

Figure 4: 3D CAD model (Bottom Chamber NTP Cell 6)

Figure 5: 3D CAD model (Bottom Chamber NTP Cell 6) – Wireframe

8.0 PROCESS

This section contains the requirements of and deliverables from the required 3D scanning exercise and subsequent data processing for the A26 smelter engineering infrastructure.

8.1 REQUIREMENTS

- The service provider is required to use suitable 3D scanning technology to capture, clean up and perform reverse engineering of captured data of the A26 smelter plant infrastructure at NECSA SOC
- The integrity of the data shall be such that each component scanned contains sufficient details, that it may be reverse engineered to recreate respective engineering information and/or manufacturing drawings that can no longer be obtained from the OEM.
- The A26 smelter comprises of both Ferrous and Non-Ferrous smelting process and utility equipment and peripheral lines, i.e., Furnace, Ducting, Filter banks, etc. Refer to Figure 2 below. Both systems' process lines shall be 3D scanned and data reversed processed independently to produce design details
- The eligibility of the data captured and recorded shall be clear enough to be readable and understood by the client and any third party, e.g., the NNR.
- The service provider shall bring all required tools and supporting personnel to site to support the 3D scanning exercise. NECSA shall provide utilities required to perform the scanning exercise, i.e., electricity and water.
- Depending on duration of 3D scanning exercise, the service provider is required to prepare a safety file for all personnel that will be working on site. The client, NLM, will supply the detail required for the safety file.

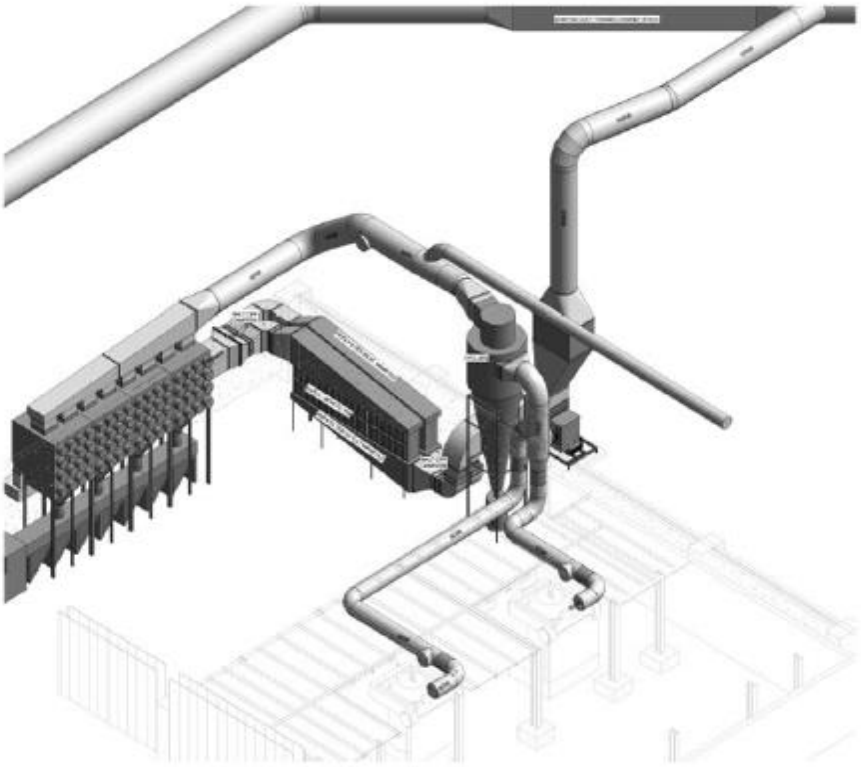

Figure 6: Typical A26 Smelter Plant Infrastructure (Without 3D CAD detail)

8.2 THE DELIVERABLES

The following are expected deliverables to be provided by the service provider as outcome from the 3D scanning process.

- High integrity 3D Scanned Data transformed into 3D models, for systems, sub-systems and components
- Reverse engineered plant data i.e. architect mechanical component geometry, and respective dimensions. These shall be eligible for the recreation and regeneration of 3D CAD models of components of interest.
- 3D CAD models of the scanned sections of the plant.

- Dimensional and Tolerance manufacturing drawings of all mechanical components (with no OEM IP restrictions) of the plant architect. The drawings need not entail any component material of construction as this shall be conducted during a spark testing exercise.

9.0 RECORDS

No records.