RFQ Number	**NOAM-PM-RFQ-0001**
Request for Quotation Date	**2024-01-11**
RFQ Closing Date	**2024-01-31**
RFQ Closing Time	**16:00**
Site Briefing (NOT compulsory)	**N/A**
Contact Person	**Tankiso Modise: Tankiso.modise@necsa.co.za** **012 305 5734** **071 686 1379**
Quotation Validity	**90 Days from the closing date**
Submission Details	**RFQ Response must be sent to:** **Catherine.matima@necsa.co.za**
RFQ Description	**Request for Quotation for ISOCS System**

Dear Service Provider

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. Request

Necsa hereby invites interested service providers/suppliers to submit quotation, proposal or bids, as appropriate, for the provision of goods and/or services, as defines in the attached documentation (NLM-SPE-0031).

3. Attachments

Ref #	Name	Description
01	NLM-SPE-00031	The User Requirements Specifications of an In-Suit Object Counting System (ISOCS) for Characterisation of various waste streams
02	SBD4	Supplier Information

The system shall meet the requirements listed in section/paragraph 6.0 of the attached URS.

4. Pricing

- Use Table 1 to itemize your offer, taking into account the scope of work and associated deliverables as defined in NLM-SPE-00031. Additional rows can be added if itemized items are more than what is allocated in Table1.
- 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.

Table 1: Costing

Ref #	Item description	Quantity	Unit Cost	Line Total
01	**ISOCS System (Refer to attached URS)**	**1**		
02				
03				
04				

05				
			Sub Total (Excl.)	
			VAT (15%)	
			TOTAL (Incl.)	

5. Evaluation

- **Phase 1- Functionality Evaluation / Technical Evaluation (N/A)**

NB: The system must meet all requirements as specified in NLM-SPE-00031

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.

IMPORTANT: A bidder/s that scores less than **80 points out of 100** in respect of functionality will be regarded as submitting a non-responsive bid and will be disqualified. Should the relevant bidder/s meet the minimum required percentage or minimum points, they will be evaluated as per Phase 2 evaluation outlined below.

- **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
6	6
7	4
8	2
Non-compliant contributor	0

6. 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

7. Important

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

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

Classification: OPEN

South African Nuclear Energy Corporation SOC Limited

Document No.	**NLM-SPE-00031**
Rev. No.	**00**
Department/Section:	**NLM/Radwaste**
Title:	**The User Requirement Specifications of an In Suit Object Counting System (ISOCS) for Characterisation of various waste streams**

Authorization

	NAME	SIGNED	DATE
PREPARED	EL NTAOLANG (SCIENTIST:RADWASTE)	19/07/2023 15:49:10(UTC+02:00) Signed by Letlhogonolo Ntaolang, letlhogonolo.ntaolang@necsa.co.za	
REVIEWED	MM TSHABALALA (INDEPENDENT CONTRACTOR: NECSA))	19/07/2023 16:32:00(UTC+02:00) Signed by Makgobe Matshediso Tshabalala, makgobe.tshabalala@necsa.co.za	
ACCEPTED	R SWART (SENIOR TECHNOLOGIST:RADWASTE)	19/07/2023 17:22:16(UTC+02:00) Signed by Rean Swart, rean.swart@necsa.co.za	
ACCEPTED	L HORDIJK (WASTE SPECIALIST:NLM)	19/07/2023 17:25:28(UTC+02:00) Signed by Leo Hordijk, leo.hordijk@necsa.co.za	
APPROVED	ZP DLAMINI (MANAGER:SUPPORT SERVICES)	20/07/2023 08:39:05(UTC+02:00) Signed by Zamazizi Dlamini, zamazizi.dlamini@necsa.co.za	

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Revisions

This document has been revised according to the following schedule:

Revision	Date Approved	Nature of Revision	Prepared by
00	See title page	First Issue	EL NTAOLANG

Contents:

1.0 BACKGROUND

A consolidated waste management strategy [1] for all solid waste at Necsa was previously prepared. A number of 77 waste streams were identified and broad-line way forward such as existing or required characterisation methodology for each stream was identified. Different techniques and equipment were identified for radiological characterisation of each waste type defined to ensure compliance to Vaalputs' Waste Acceptance Criteria

Various waste streams could not be characterised using the existing systems due to the following reasons:

- Sample shape
- Difficulty to prepare the calibration source
- High active sample
- Couldn't fit into both BNFL & IQ3 scanners

These waste streams could be analysed by using a characterised gamma detector and calibration modelling software which allows the user to perform absolute efficiency calibrations without calibration sources known as ISOCS.

ISOCS modelling software allows performing absolute efficiency calibration for items of arbitrary container shape and wall material, matrix chemical composition, material fill-height, uranium or plutonium weight fraction inside the matrix and even nuclear material/matrix non-homogeneous distribution. The software is used with a gamma detector which is specifically characterised (at factory) to determine the detector parameters needed for the ISOCS calibration process.

The complete counting system can be used to perform the following:

- Characterisation of radioactive waste in drums or unusual shaped objects that do not fit into standard waste assay systems such as the IQ3 & BNFL scanner or for which the preparation of a calibration source is difficult or even impossible.
- Nuclide identification inside valve/pipe/tank before opening
- Evaluation of surface contamination

2.0 PURPOSE

The purpose of this User Requirement Specifications (URS) is to specify the requirements of In Situ Object Counting System (ISOCS) to characterise various waste streams.

3.0 SCOPE

This document specifies the user requirements for an In Situ Object Counting system (ISOCS) which could be used to characterise the following current waste types:

WASTE TYPE	DESCRIPTIONS	Reason for ISOCS need
HEPA filters inside boxes (300 Boxes)	Rectangular HEPA air filters inside boxes	• Shapes • The IQ3/BNFL scanners can only characterise waste in a cylindrical shapes(100ℓ-200ℓ drums)
Conversion plant Unburns (389 Drums)	Originate from Conversion Plant. Reactor unburnts. High in HF Stored in 350ℓ	• Drum size (350ℓ) Can not fit into both the IQ3 & BNFL scanners
DPTE Container in concrete Decay drum (1135 Containers)	DPTE container contained NTP dissolver cell solid waste, inside concrete shielding container.	• High activity/dose • Mass • Calibration
NTP Cell 3 Mo-99 production waste (200 Containers)	Mo-99 production solid (compressible) waste was added to cell 3 while the LTA waste was present in the cell. Waste is now cross contaminated	• Calibration • Size • High active
NTP Cell 3 waste LTA waste (300 Containers)	Necsa manufactured Lead Test Assembly waste. This fuel was used at koeberg	• Calibration • Size/Shape
NTP hot cell Carcasses (4Carcasses)		• High active • Shapes/size

4.0 REFERENCES

The following documents are referenced in this document:

[1] NLM-STRG-00054	NECSA CONSOLIDATED WASTE MANAGEMENT STRATEGY
[2] NLM-PLN -00311	NLM WASTE PRIORITISATION AND RESPONSIBILITY

	ALLOCATION
[3] NLM-PLN-00335	FIVE YEAR STRATEGY FOR DISCHARGING STAGE 1 LIABILITIES IN LINE WITH THE INCREASED DOE FUNDING

5.0 DEFINITIONS AND ABBREVIATIONS

5.1 DEFINITIONS:

Characterised Gamma Detector: The detector is characterised by the supplier by using a combination of source measurements and MCNP calculations. The results of this characterisations are then use by the calibrations software

MCNP : is a general-purpose, continuous-energy, generalized-geometry, time-dependent, Monte Carlo radiation transport code designed to track many particle types over broad ranges of energies

NTP : A Subsidiary of the South African Nuclear Energy Corporation (Necsa) which produces radiation products

5.2 ABBREVIATIONS:

NLM:	Nuclear Liabilities Management
ISOCS	In Situ Object Counting System
LTA	Lead Test Assembly
URS	User Requirements Specifications
BEGe	Broad Energy Germanium
DPTE	"Double Porte de Transfer Etanche"
MCNP	Monte Carlo N-Particle Transport

6.0 USER REQUIREMENT SPECIFICATIONS

An ISOCS system consists of the following major components:

- An "ISOCS Characterised" germanium detector
- A cart (including shields and collimators)
- Inspector 2000
- Laptop with Genie 2000 software
- ISOCS In Situ Calibration Software
- Lifting/Adjustable Trolley for positioning of the sample

The detailed specification requirements for an ISOCS are as follows:

Specifications	Description
High Purity Germanium Detector (BEGe)	• ISOCS Characterized Germanium detector • Excellent/Higher Efficiency • Excellent energy resolution and peak symmetry
Coolant	• X-Cooler III Mechanical Cooler or LN_2 free cooler • Re-cooled immediately
Laptop PC running Genie 2000 software	Plenty of RAM and a fast processor (Core i7) for faster computation of the following latest modules softwares: • Genie 2000 Basic Spectroscopy Software • Genie 2000 Gamma analysis Software • Genie 2000 Quality Assurance Software • ISOCS Calibration Software • LabSOC Software • Interactive Peak Fit
Inspector 2000 Multi Channel Analyzer (MCA)	• Multi channel analyser in a portable battery operated package • Long operating life on a single battery
The Mounting Cart	• Wheeled mounting stand with brakes for ease in moving the shields from one sample to another • Upper and lower detector mounting positions, with 180 detector rotation at either location • Easy to assemble and to change detector positions • Build in laser aiming device
The shield and collimators	• 25 mm and 50 mm lead shield

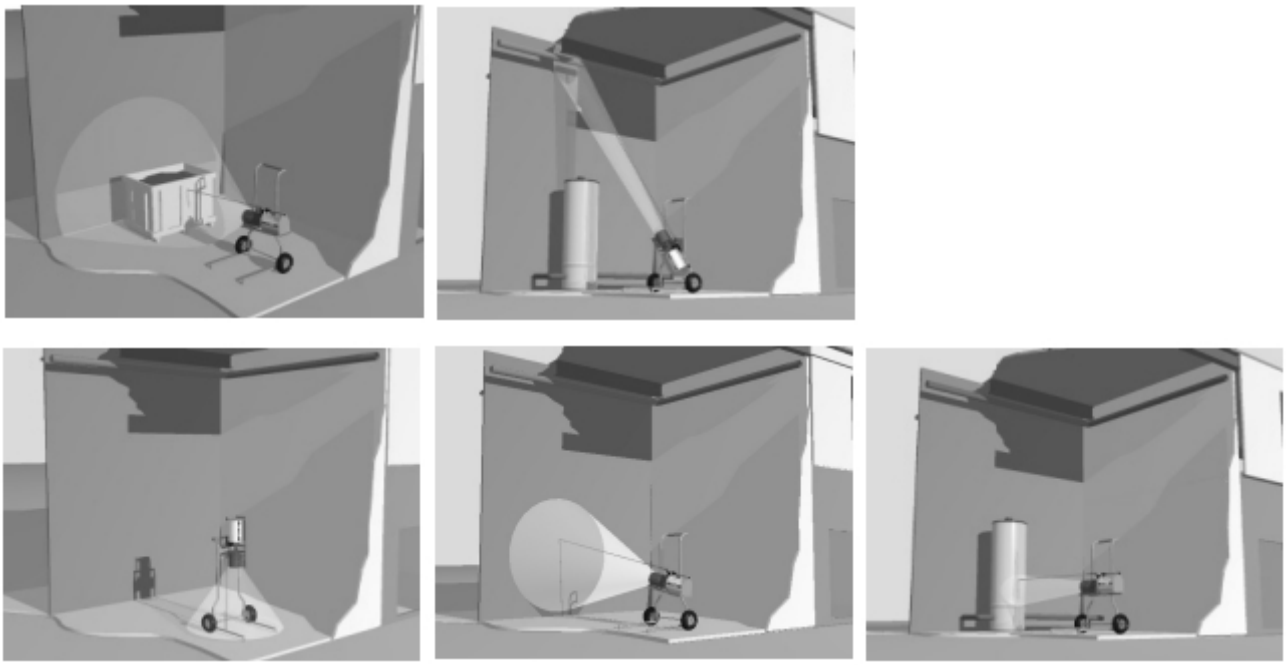
system	

The complete ISOCS system will have items shown in Fig.1

The ISOCS Detector, Cart, and Shield Components.

Figure 1

The following figures demonstrates how the ISOCS system will be used to measure different objects at different positions.



SBD4

BIDDER'S DISCLOSURE

1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest1 in the enterprise, employed by the state? **YES/NO**

2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

---

1 the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.

Full Name	Identity Number	Name of State institution

2.2 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution? **YES/NO**

2.2.1 If so, furnish particulars:
……
……

2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract? **YES/NO**

2.3.1 If so, furnish particulars:
……
……

3 DECLARATION

I, the undersigned, (name)……. in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:

3.1 I have read and I understand the contents of this disclosure;
3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;
3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint

venture or consortium2 will not be construed as collusive bidding.

3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.

3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.

3.6 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.
I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

…… ……
Signature Date

2 Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

SBD4

…… ……

Position Name of bidder