TERMS OF REFERENCE FOR THE APPOINTMENT OF A SERVICE PROVIDER FOR THE DEVELOPMENT OF A NATIONAL HAZARD ASSESSMENT FOR NUCLEAR AND RADIOLOGICAL EMERGENCIES IN SOUTH AFRICA FOR A PERIOD OF TEN (10) WEEKS IN THE DEPARTMENT OF ELECTRICITY AND ENERGY.

1. BACKGROUND

1.1 The Department of Electricity & Energy (DEE) is responsible for developing energy policy and ensuring the safe, equitable, and sustainable development of the energy resources in the country. Part of the mandate of the DEE includes the administration of the Nuclear Energy Policy (2008) and other nuclear related legislations. The DEE is also regarded as the national organ of state responsible for nuclear emergencies in South Africa.

1.2 South Africa operates the Koeberg Nuclear Power Plant (KNPP), the only commercial nuclear power station on the African continent, which is operated by Eskom. The South African Nuclear Energy Corporation (NECSA) sustains substantial capabilities in nuclear research, isotope production, fuel fabrication, and radioactive waste management. Medical and industrial applications of radioactive materials are prevalent across the country and are regulated by the National Nuclear Regulator (NNR) and SAHPRA. These activities collectively constitute a complex national nuclear and radiological risk landscape that requires systematic assessment.

1.3 In terms of Section 25 of the Disaster Management Act, 2002 (Act No. 57 of 2002) (DMA), each national organ of state must develop a disaster management plan. The plan must describe how disaster management concepts and principles are implemented in its functional area, its roles and responsibilities within the national disaster management framework, its contingency strategies, and its emergency procedures for identified priority risks. The DEE, as the responsible organ of state for nuclear and radiological matters, is required to ensure that a comprehensive hazard assessment for nuclear and radiological emergencies informs the development of its Sector Disaster Management Plan.

1.4 The National Disaster Management Centre (NDMC) has issued guidelines for the development and structure of disaster management plans, prescribing a phased, methodical approach to disaster risk assessment. This includes determining hazard characteristics, evaluating vulnerability and capacity, developing risk profiles, and formulating suitable risk-reduction strategies. In response to these requirements, the DEE seeks to develop a dedicated National Hazard Assessment for Nuclear and Radiological Emergencies as a foundational planning instrument to support emergency preparedness, response, and risk reduction efforts across the nuclear and radiological sector in South Africa.

1.5 The assessment will guide the DEE Nuclear Sector Disaster Management Plan and support the alignment with International Atomic Energy Agency (IAEA) safety standards for emergency preparedness and response, including General Safety Requirements (GSR) Part 7 on Preparedness and Response for a Nuclear or Radiological Emergency.

2. CONTRACT PERIOD

2.1 The duration of this project is 10 weeks after the signing of a contract by the successful service provider. The General Conditions of the Contract will also apply to the project.

3. OBJECTIVE

3.1 The objective of this project is to appoint a service provider to develop a comprehensive National Hazard Assessment for Nuclear and Radiological Emergencies in South Africa, in accordance with the NDMC guidelines for disaster risk assessment and the requirements of the Disaster Management Act, 2002 (Act No. 57 of 2002).

3.2 The service provider shall be required to:

3.2.1 Conduct a systematic identification and characterisation of all nuclear and radiological hazard sources in South Africa.

3.2.2 Assess the vulnerability of communities, infrastructure, and the environment to nuclear and radiological hazard events.

3.2.3 Estimate and evaluate disaster risk levels for each identified hazard source using the NDMC-prescribed four-stage risk assessment methodology.

3.2.4 Develop an Indicative National Risk Profile for nuclear and radiological emergencies.

3.2.5 Identify key governmental and non-governmental stakeholders and their roles and responsibilities in nuclear and radiological emergency response.

3.2.6 Formulate recommendations for risk monitoring, contingency planning, and linkages to the DEE Sector Disaster Management Plan.

3.2.7 Ensure that the assessment is aligned with IAEA General Safety Requirements (GSR) Part 7 and relevant NDMC guidelines.

3.2.8 Produce the assessment in a format suitable for both print and digital distribution.

4. SCOPE OF WORK

4.1 The service provider shall develop the National Hazard Assessment for Nuclear and Radiological Emergencies following the NDMC four-stage risk assessment methodology, as set out below. The service provider is expected to develop the assessment in accordance with the action steps applicable to the NDMC Guideline '*Development and Structure of a Disaster Management Plan*', and in alignment with IAEA GSR Part 7.

Stage 1: Identification of Nuclear and Radiological Risk Factors

4.2 The service provider shall identify and characterise all nuclear and radiological hazard sources in South Africa, including but not limited to:

4.2.1 Koeberg Nuclear Power Plant (KNPP), including reactor accident scenarios, radiation release events.

4.2.2 NECSA facilities at Pelindaba, including SAFARI-1, fuel fabrication, isotope production, and waste management.

4.2.3 Radioactive waste storage, treatment, and disposal facilities.

4.2.4 Transport of radioactive materials (road, rail, and air).

4.2.5 Medical and industrial applications of radioactive sources (orphan source scenarios, lost/stolen sources).

4.2.6 Naturally Occurring Radioactive Material (NORM) in mining operations.

4.3 For each identified hazard source, the following characteristics shall be determined:

4.3.1 Historical information on nuclear and radiological incidents.

4.3.2 Probability and frequency of occurrence.

4.3.3 Impact and intensity of potential radiological consequences.

4.3.4 Geographic scope and spatial extent of potential impact.

4.3.5 The capacity to predict the impact and warnings.

4.3.6 Exposure pathways (inhalation, ingestion, direct radiation).

4.3.7 Secondary/indirect impacts (contamination of water, food, and agricultural systems).

4.4 A vulnerability and capacity assessment shall be conducted covering the following dimensions:

4.4.1 Social susceptibility (population density in risk zones, mobility of at-risk communities).

4.4.2 Economic susceptibility (critical infrastructure and economic assets within hazard zones).

4.4.3 Physical susceptibility (buildings, transport networks, and utilities within potential impact areas).

4.4.4 Environmental susceptibility (sensitive ecosystems, water areas, and agricultural land).

4.4.5 Capacity (existing emergency services, evacuation routes, medical facilities, monitoring networks, and response resources).

Stage 2: Estimation of Disaster Risk Level

4.5 The service provider shall quantify the disaster risk level for each identified nuclear and radiological hazard source by combining the hazard severity value (derived from hazard characterisation and stakeholder consultation) with a

probability value (probability of occurrence within a one-year period) to calculate the final hazard risk value, as prescribed by NDMC risk profiling methodology.

Stage 3: Evaluation of Disaster Risks

4.6 The service provider shall evaluate the assessed nuclear and radiological disaster risks by:

4.6.1 Conducting socio-economic cost-benefit analyses for each identified hazard scenario.

4.6.2 Establishing risk priorities and ranking hazard sources according to severity and likelihood.

4.6.3 Determining acceptable levels of nuclear and radiological disaster risk in consultation with the DEE.

4.6.4 Elaborating emergency scenarios and corresponding risk reduction measures.

4.6.5 Producing an Indicative National Risk Profile for nuclear and radiological emergencies.

Stage 4: Monitoring and Updating Framework

4.7 The service provider shall develop recommendations for an ongoing risk monitoring and updating framework, including performance indicators for tracking changes in nuclear and radiological hazard exposure and vulnerability over time.

Institutional Arrangements and Stakeholder Mapping

4.8 The service provider shall identify all key institutional role-players in nuclear and radiological emergency management, including: National Nuclear Regulator (NNR); South African Nuclear Energy Corporation (NECSA); Eskom (Koeberg Nuclear Power Plant); National Disaster Management Centre (NDMC); Department of Health (radiological and medical response); Department of Cooperative Governance and Traditional Affairs (CoGTA); South African Police Service (SAPS) and South African National Defense Force (SANDF); Provincial and local disaster management centers in nuclear risk zones; International Atomic Energy Agency (IAEA).

4.9 The hazard assessment will be conducted by the service provider and will include the consultation with the relevant stakeholders identified in the stakeholder mapping. The DEE will facilitate the consultation with stakeholders (e.g. Emergency Planning, Steering, and Oversight Committees).

4.10 The assessment shall specify the roles and responsibilities of each identified stakeholder in nuclear and radiological emergency response, consistent with the requirements of the DMA 2002 and the National Nuclear Regulator Act, 1999.

Linkages to Emergency Preparedness and Contingency Planning

4.11 The service provider shall outline how the findings of the hazard assessment inform contingency planning, emergency preparedness, and response strategies for nuclear and radiological emergencies, and shall recommend the structure of Standard Operating Procedures (SOPs) and the DEE Sector Disaster Management Plan.

5. DELIVERABLES OR PROJECT OUTPUT AND OUTCOMES

5.1 Deliverable 1 (Inception Report): detailed work plan, stakeholder engagement plan, data collection methodology, and project schedule (Week 1 from appointment).

5.2 Deliverable 2 (Draft Hazard Assessment Report): Stage 1 and Stage 2 outputs including hazard identification, characterisation, vulnerability and capacity assessment, and risk level estimation (Week 5 from appointment).

5.3 Deliverable 3 (Final Draft National Hazard Assessment Report for Nuclear and Radiological Emergencies): incorporating Stage 3 and Stage 4 outputs, indicative risk profile, stakeholder mapping, and emergency preparedness linkages (Week 8 from appointment).

5.4 Deliverable 4 (Final National Hazard Assessment Report for Nuclear and Radiological Emergencies): print-ready and digital version, incorporating all stakeholder comments and DEE review (Week 10 from appointment).

Turnaround time of seven (07) calendar days for departmental review and comment to be adhered to.

Accurate weekly progress reporting and invoicing must be adhered to.

6. EVALUATION CRITERIA

This bid will be evaluated in the following stages: functionality, administrative compliance and point scoring system.

6.1 Gate 01 - Functionality

Bidders will be scored in terms of the functional requirements indicated in the table below. The corresponding points and weightings will be used to calculate the overall score a bidder has achieved. The minimum threshold for this bid is **70%**. Bidders who score less than **70%** will be disqualified. Only bidders that score **70%** or more will be considered further.

No.	Evaluation criteria	Points	Weight
1.	**Company experience**		**20**
	1.1. Service providers should have experience in projects related to nuclear/disaster risk assessment, or nuclear/ radiological emergency planning, in accordance with relevant NDMC guidelines or nuclear regulatory framework. (Proof of contactable referees indicating successful execution of similar completed projects, preferably in the nuclear, energy, or disaster management sector,	10 years or more = 5 points. 6 to 9 years = 4 points. 5 years = 3 points. 2 to 4 years = 2 points. 1 years or less = 1 point No experience = 0 points	20

No.	Evaluation criteria	Points	Weight
	detailing the description of service and duration, must be included).		
2.	**TEAM LEADER AND TEAM MEMBERS QUALIFICATION:** **TEAM LEADER QUALIFICATIONS:** 2.1 Team leader must possess a SAQA recognized qualification in Disaster Risk Management, Emergency Management, Nuclear Engineering, Radiation Sciences, or Environmental Science. (Proof of certified certificates must be attached) **TEAM MEMBERS** 2.2 Team member(s) must possess a SAQA recognized qualification in Nuclear Engineering, Nuclear Physics, Radiation Sciences, or Disaster Risk Management. (Proof of certified certificates must be attached)	NQF 10 = 5 points NQF 9 = 4 points NQF 8 = 3 points NQF 7 = 2 points NQF 6 or below = 1 point No qualification = 0 points NQF 9 or higher = 5 points NQF 8 = 4 points NQF 7 = 3 points NQF 6 = 2 points NQF 5 or below = 1 point No qualification = 0 points	**30** 20 10
	TEAM LEADER AND TEAM MEMBERS EXPERIENCE		**30**

No.	Evaluation criteria	Points	Weight
	TEAM LEADER EXPERIENCE: 2.3 Team Leader must have experience in nuclear risk assessment, disaster risk assessment, hazard assessment, or nuclear/radiological emergency planning. *(Attach copy of comprehensive CV detailing the relevant experience and contactable references)* **TEAM'S EXPERIENCE:** 2.4 Individual team member(s) must have experience in nuclear/radiological hazard assessments, disaster management, or risk analysis. *(Attach copy of comprehensive CV detailing the relevant experience and contactable references)*	Seven (7) years or more = 5 points Six (6) years = 4 points Five (5) years = 3 points Four (4) to three (3) years = 2 points Less than three (3) years = 1 point No experience = 0 points 5 years or more = 5 points. Four (4) years = 4 points. Three (3) years = 3 points. Two (2) years = 2 points. One (1) year = 1 point. No experience = 0 points	20 10
5	**METHODOLOGY** The proposed methodology should include the following elements: (i) Hazard identification and characterization	Six (6) or more elements = 5 points Five (5) elements = 4 points	**10** 10

No.	Evaluation criteria	Points	Weight
	(ii) Vulnerability assessment (iii) Capacity assessment (iv) Risk estimation (v) Risk assessment (vi) Stakeholder engagement. (The proposal should detail the dependencies from the Department to ensure successful implementation of the project)	Four (4) elements = 3 points Three (3) to Two (2) elements = 2 points One element = 1 point No methodology = 0	
6	**PROJECT PLAN** Project/Execution Plan and Management must be attached. A detailed project plan must include the following elements: (i) Deliverables (ii) Timeframes or schedule (including lead times and turnaround times) (iii) Milestones (iv) Scope (v) Required resources (vi) Role of each team member clearly specified. (vii) Project Quality Management Plan.	Seven (7) or more elements = 5 points Six (6) elements = 3 points Five (5) to Four (4) elements = 2 points Less than Four (4) elements = 1 point No project plan = 0 points	**10**
Total			**100**

Formula; $\frac{A \times 100}{B} = C\%$

Where: A = Total score for the bid under consideration

B = Maximum possible score

C = Percentage score for the bid under consideration

6.2 Gate 02 - Administrative compliance

(i) Compliance to the specification / Terms of Reference.

(ii) Fully completed SBDs (Duly signed and dated) listed hereunder.

- SBD 1
- SBD 4
- SBD 6.1

(iii) The following will be regarded as non-compliance.

- Amendments / other amendments without signature/initials.
- Use of correctional fluid
- Completion of the bid document in coloured ink other than black ink

6.3 Gate 03 – Point Scoring System

Bids will be evaluated on the 80/20 preference point system as outlined in the Preferential Procurement Regulation of 2022.

- Price points = 80
- Preferential points = 20

6.4.1. The bidder that scores the highest points in this phase will be awarded the tender.

6.4.2 Should more than one bidder score the same number of points; the award will be made to the bidder who scores more points on specific goals.

6.4.3. Should there be more than one bidder who scores the same number of points overall and the same points on specific goals, the award will be made to the bidder who scored the highest points on functionality.

6.4.4. Should there be more than one bidder who scores the same number of points in all aspects, the bid will be determined by the drawing of the lot.

6.4.5. The preferential points will be allocated in terms of the Departmental objectives on specific goals. Points allocation on specific goals are tabulated hereunder.

6.4.6. Bidders who do not submit proof (means of verification) of specific goals claimed may not qualify for preference points for specific goals.

Specific Goal	**Number of points (80/20 Preference System)**	**Means of Verification**
Enterprise owned by Black people	4	Identity documents and CIPC document
Enterprise owned by Women	4	Identity documents and CIPC document
Enterprise owned by Youth	4	Identity documents and CIPC document
Enterprise owned by disabled persons	4	Medical certification
Enterprise owned by SMMEs (QSE or EME)	4	B-BBEE certificate issued by a SANAS accredited Agency or DTIC, or Sworn affidavit

NB: *"Ownership = 51% of the company share. Designated group/person that is part of the entity directorship but has less than 51% share = points will be calculated on a pro-rata basis in relation to the share/s held by the designated group/persons.*

E.g. Number of women directors = 01

Shares owned by women = 20%

Specific goal for women = 4 points

Points claimable for women ownership = $\frac{20 \times 4}{100}$ = **0.8 points**

7 REPORTING REQUIREMENTS

7.1 The successful applicant will work closely with the Director: Nuclear Safety, Liabilities, and Emergency Management (NSLEM).

7.2 The service provider is required to provide a written monthly report to the Director: NSLEM on deliverables.

7.3 The service provider will be required to conduct Quarterly meetings with the Director: NSLEM, or his/her delegate for the duration of the contract period. In case of emergency, either party may propose a meeting, and both parties must reasonably avail themselves for such meetings.

8. ROLES AND RESPONSIBILITIES.

8.1. The Department of Electricity and Energy shall provide the following.

8.1.1 Functional perimeter.

8.1.2 Access to the offices as when a need arises.

8.2 Service Provider

8.2.1 Execute the contract in line with the scope of work and other requirements contained in these terms of reference and/or SLA.

8.2.2 The Service Provider shall at all material times act diligently, reasonably and with care, when dealing with all Departmental information and/or intellectual property belonging to the Department.

9. CONFIDENTIALITY OF INFORMATION

9.1. The service provider shall treat information furnished by the other Party or another person for purposes of execution of the project as confidential. Subject to this clause, the Party furnished with information shall not disclose such information to another person without the prior written consent of the other Party and shall take reasonable steps to ensure that such information is not disclosed to another person.

10. PAYMENTS

10.1 The Department will not make an upfront payment to a successful service provider. Payments will only be made in accordance with the delivery of services that will be agreed upon by both parties on receipt of an original invoice.

11 TAX CLEARANCE CERTIFICATE

11.1 Bidders must ensure compliance with their tax obligations.

11.2 Bidders are required to submit their unique personal identification number (pin) issued by SARS to enable the organ of state to view the taxpayer's profile and tax status.

11.3 Application for tax compliance status (TCS) or pin may also be made via e-filing. In order to use this provision, taxpayers will need to register with SARS as e-filers through the website www.sars.gov.za.

11.4. A bidder may also submit a printed TCS together with the proposal.

11.5. In proposals where consortia / joint ventures / sub-contractors are involved; each party must submit a separate proof of TCS / pin / CSD number.

11.6. Where no TCS is available, but the potential service provider/s is registered on the central supplier database (CSD), a CSD number must be provided.

12. CONDITIONS OF THE CONTRACT

12.1 The General Conditions of Contract must be accepted as these are issued by National Treasury and are non-negotiable.

12.2 The service provider will sign a confidentiality agreement regarding the protection of DEE information that is not in the public domain.

12.3 Service provider is prohibited from unauthorized handling, reading or removal of documents in the departmental records.

12.4 No state information may be furnished/ communicated to the public or news media by the security service provider or any of their employees.

12.5 The Department reserves the right to screen/vet service provider personnel through the State Security Agency or otherwise.

12.6 The service provider must ensure that there is no interruption of services due to manpower shortage due to annual leave, sick leave, etc.

12.7 The service provider shall ensure that the contract is executed in line with the scope of work.

12.8 The service provider company may be subjected to security screening by the State Security Agency.

12.9 The DEE reserves the right to verify the authenticity of the information submitted, any falsified information may result in the disqualification or cancellation of the contract.

13 FORMATS OF SUBMISSION OF PROPOSAL

13.1 Service providers are requested to **submit one (1) original** of proposals and two (2) copies**.**

13.2 Service providers are requested to index their proposals for easy reference.

14 PRE-BID MEETING DETAILS/BRIEFING SESSION DETAILS

14.1 A compulsory briefing session will be held on **23 November 2026 at 10h00**, at the Department of Electricity and Energy at the following address:

192 Visagie Street, Cnr Paul Kruger and Visagie Street, Pretoria 0001

14.2 Bidders must sign the briefing session attendance register and remain in attendance from the opening to the closure of the meeting. Failure to sign the briefing session attendance register will result in disqualification from participation in this bid.

15 CLOSING DATE

15.1. Proposals must be submitted on or before **08 DECEMBER 2026 at 11h00,** at the Department of Electricity and Energy, at 192 Matimba House Building, Corner Visagie and Paul Kruger Street, Pretoria in a box marked “Tender Box”.

15.2. **No late bids will be accepted**.

16. **ENQUIRIES**

16.1 All general enquiries relating to this bid should be directed to:

Mr Samuel Msiza
Email: samuel.msiza@dee.gov.za
Telephone: 012- 406 7910

Ms Rachel Moerane
Email: rachel.moerane@dee.gov.za
Telephone: 012- 406 7747

16.2 Technical enquiries can be directed to:

Mr Thabiso Pie
Email: thabiso.pie@dee.gov.za
Telephone: 012- 406 7504