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Our reference: NIL11B0009
Your reference:

18 April 2011

Chief Executive Officer
Necsa
P O Box 582
PRETORIA
0001

FOR THE ATTENTION OF DR RM ADAM

Dear Dr Adam

NUCLEAR INSTALLATION LICENCE NIL-11 (VARIATION 1)

1. Please find enclosed one controlled copy of Nuclear Installation Licence No. NIL-11 (Variation 1), being the nuclear authorisation issued to Necsa for the operation of the Area 14 Waste Management Complex. This document must be controlled in accordance with the Necsa arrangements for controlled documents.

2. Following the approval of NNR Authorisation Change Request NL27-NAR-0151 this authorisation is hereby revised. See sections B-1.27 and B-1.28 of Nuclear Installation Licence NIL-11 to authorise the transport of Necsa Low Level Waste to the Vaalputs Radioactive Waste Disposal Facility.

3. Necsa is reminded that the format for correspondence between **Necsa and the NNR on** the **Area 14 Waste Management Complex** are as follows:
   i. Correspondence **from Necsa to the NNR:** NIL11AXXXX, where "XXXX" is sequential numbers starting with 0001.
   ii. **Correspondence from the NNR to Necsa:** NIL11BXXXX, where "XXXX" is sequential numbers starting with 0001.
   iii. **NNR Authorisation Requests (NAR's)** will be numbered as follows: NIL11-NAR-XXXX, where "XXXX" is sequential numbers starting with 0001.
   iv. **Authorisation Change Requests (ACR's)** will be numbered as follows: NIL11-ACR-XXXX, where "XXXX" is sequential numbers starting with 0001.
   v. **Events** will be numbered as follows: NIL11-OCC-XXXX, where "XXXX" is sequential numbers starting with 0001.

2./...

4. The issue of this nuclear authorisation does not relieve Necsa of any obligations under any other legislation.

Yours faithfully



Adv BM Mkhize
CHIEF EXECUTIVE OFFICER

Copy: Group Executive: NTI

LD Records

NUCLEAR INSTALLATION LICENCE No. NIL-11 (Variation 1)

Nuclear Installation Licence No. NIL-11 (Variation 1) issued in terms of the provisions of Section 23 of the National Nuclear Regulator Act, Act 47 of 1999 (hereinafter referred to as the Act)

to

THE SOUTH AFRICAN NUCLEAR ENERGY CORPORATION (Necsa)
(hereinafter referred to as the Licensee)

for

the operation of **Area 14 Waste Management Complex** on the farm Weldaba 567 JQ (formerly Welgegund 491 JQ), in the magisterial district of Brits in the North West Province, known as the Pelindaba site. The site referred to in this licence refers to the defined portion of the Pelindaba site on which the nuclear Area 14 Waste Management Facility is constructed (see Figure 1).

The Nuclear Installation Licence is not transferable and is effective from the date of issue, subject to adherence with –

(i) the Conditions of Authorisation in PART A; and
(ii) the Specified NNR Requirements in PART B.

Issued at Centurion on this 18th day of April 2011

CHIEF EXECUTIVE OFFICER

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PART A: CONDITIONS OF AUTHORISATION

1. General

a. In these conditions any reference to an agreement, approval, directive, specification, notification, process or any formal communication between the NNR and the licensee, and vice versa, shall be deemed to be a reference to a written document.

b. In these conditions any reference to approved processes and or procedures shall be deemed to be licensee processes and or procedures.

c. In these conditions any reference to NNR approved processes and or procedures shall be deemed to be licensee processes and or procedures that have been reviewed and approved by the NNR.

d. The licensee must ensure that once approved no alteration or amendment is made to the NNR approved processes and or procedures unless the NNR has approved the said alteration or amendment.

e. Where in these conditions, the NNR requires any matter to be approved or to be carried out only with its consent or to be carried out as it directs, the NNR may –
   i. from time to time modify, revise or withdraw, either wholly or in part, any such approval, directive or consent;
   ii. approve, either wholly or in part, any modification or revision or any proposed modification or revision to any matter for the period being approved.

f. The English text of the licence is the official text of the licence.

2. Facility Description

The **Area 14 Waste Management Complex** is located on the Pelindaba-East side of the Necsa site and is situated in the building that previously housed the uranium enrichment facility that was known as the Z-Plant. The Area 14 Waste Management Facility consists of:

i. **The PELSTORE**
ii. **The AREA 14 DECOMMISSIONING FACILITIES**

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a. **PELSTORE**:
The **PELSTORE** is a naturally ventilated, concrete structure having two floors and is utilised as a storage area for containerised solid radioactive waste. It comprises of the following:

i. **SEA Storage Area.**
This storage area located against the southern wall of PELSTORE to the western side and consists of an IBR sheeting walled structure, with lockable doors and top covered with steel netting. The total storage area of the SEA store is 102 m x 13.25 m = 1351 m^2.

ii. **Repacking Area**
The Repacking Area is utilised for the repacking of waste containers and inspection of waste container contents. The Repacking Area consists of a room of temporary construction, equipped with an extraction fan, and is located against the western wall of PELSTORE. The total area of the Repacking Area is 3 m x 7 m = 21 m^2. Adjacent to the Repacking Area is a change room, also of temporary construction, equipped with facilities for changing protective clothing.

iii. **The Old Battery Rooms**
The Old Battery Rooms are situated on the northern side of PELSTORE on the first floor level and extend over the whole length of the PELSTORE. The old battery rooms are now utilised for the storage of waste containers.

iv. **The Pipe Bridge**
The Pipe Bridge is a steel grid floor on the first level above the process floor, on both sides of the centre of the PELSTORE, extending over the whole length (east-west direction) of PELSTORE. The Pipe Bridge is used for the storage of waste drums.

v. **Process Floor**
The process floor comprises the ground floor of Area 14, which has a smooth concrete floor which is utilised for the storage of waste containers. It includes the 'offices' and adjacent rooms on the northern side. The process floor area is about 258 m in length in an east west direction and about 80 m in width in a north-south direction.

vi. **Airlock 1**
Airlock 1 is situated on the south western side of the Area 14 process floor. This airlock gives access to the process floor of the PELSTORE for vehicles delivering or collecting waste containers at PELSTORE. This airlock is the access point for the acceptance and shipment of waste containers to and from PELSTORE.

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vii. **Airlock 2**

Airlock 2 is situated on the south-eastern side of the Area 14 process floor. This airlock can serve as an alternative access point for vehicles delivering or collecting waste containers at PELSTORE and can also be utilised as storage area.

viii. **Airlock 3**

Airlock 3 is located in the centre of the western wall of PELSTORE, between Area 14 and Area 26 on the same level as the process floor. This airlock is utilised for the storage of waste containers.

ix. **Airlock 4**

Airlock 4 is located against the western wall of PELSTORE between Area 14 and Area 26 on the same level as the process floor and adjacent to Airlock 3. Airlock 4 is a smaller airlock than Airlock 3.

x. **Receiving and Hold Area**

The Receiving and Holding area is located close to the South-western airlock on the process floor, where the waste documentation is verified for compliance and from where the waste containers can be taken to the Repack Area for content verification, before it is formally accepted in PELSTORE.

xi. **Personnel access entrance, change rooms**

These rooms, change rooms and offices are located on the north-western side of PELSTORE on the basement level at the Area 26 entrance. Stairs from this level leads to the process floor and Battery room level.

b. **AREA 14 DECOMMISSIONING FACILITIES**

The **Decommissioning Facilities** are naturally ventilated concrete structures consisting of –

- the **Cable Tunnel** and the **Oil Basement** located below the PELSTORE process floor which are equipped with air locks allowing for the handling of material and equipment to be transferred to and from these radiological controlled areas.
- the **Control Corridor**, the **Scrubber Area** and the **Filter Rooms** located above the PELSTORE process floor.

i. **The Cable Tunnels**

The Cable Tunnels, are situated one level below the process floor of Area 14. The Cable Tunnels previously contained the multitude of heavy duty electrical cables that fed into Area 14 for the Z-Plant that was previously housed in Area 14. The cables were supported in cable racks running mostly

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east-west, and the racks are in turn supported by concrete beams running mostly north-south.
Along the northern wall of the Cable Tunnel there are two rooms in the eastern corner used as workshops.

The Cable Tunnel also houses an evaporation facility for aqueous solutions contaminated with uranium bearing material enriched to 5% maximum. This evaporation facility is fenced off with a 2 metre high fence.

Currently there are contaminated wooden pallets originating from various facilities on the Necsa site stored in this area.

ii. The **Oil Basement**

As part of the previous Z-Plant, the Oil Basement was used as a collecting area for various liquids from the previous Z-Plant in Area 14. The Oil Basement area has 18 pits in which 53 m^3 oil tanks were housed. Tanks 1 to 17 were removed during the Phase 2 decommissioning of the basement. Tank 18 is still in position and has thick oil residue in the bottom of the tank. Tank 18 is connected to the oil purification plant next to Area 40.

Also situated in the Oil Basement are the Building Waste Pits and the Chemical Waste Pits. The purpose of the Building Waste Pits and Chemical Waste Pits were to collect liquid waste and determine contamination levels e.g. oil, uranium or other chemicals. Of the three wells, two are connected and are known as the Chemical Waste Pits. The third pit is the Building Waste Pit. Chemically contaminated water is drained into the Chemical Waste Pits. Chemical-free water flows into the Building Waste Pits.

Water that drains from a secondary system, or water overflowing at the end of the flood water system at the North-Eastern flood gate, flows to the Building Waste Pits. When these pits become full, samples of the water are taken and analysed. U-contaminated water is pumped into a tanker truck and conveyed to Pan 6; uncontaminated water is taken to P2400 as industrial effluent.

iii. The **Control Corridor**

Adjacent to (east of) the control room of the defunct Z-Plant and above the Pipe Bridge, is the Control Corridor that provided access from the process facility to the control room of the previous enrichment plant. This area was controlled as a blue radiological area.

There are no windows in this corridor and access to the control room from the corridor was through a change room. Access from the control corridor to the process area was by means of four sets of stairs on both sides of the corridor at various points in the corridor. An instrumentation workshop was situated at

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the western end of the corridor. This area is situated on the second floor level and extends over the middle of the process floor for the whole length of Area 14.

iv. The **Scrubber Area**
As part of the previous Z-Plant the off-gas system from the process area exhausted through scrubbers prior to venting through the building stack. The scrubber system consisted of four dry scrubber units, each connected to a building stack. The scrubbers were filled with Alumina granules to contain any UF_6 releases. All the Alumina granules were removed during shut-down of the Z-Plant. This area is located on the northern side of Area 14 on the second floor level and extends over the whole length of Area 14.

v. The **Filter Rooms**
As part of the scrubber system each system was equipped with pre-filters. These filters were located in four separate rooms where each filter system served a scrubber unit. These filters are still in the filter rooms and were not removed after the shut-down of the Z-plant. These areas are situated on the northern side of Area 14 on the first floor level.

3. Scope of Actions that may be undertaken by the Installation

a. The **scope of Actions** that may be undertaken **in the PELSTORE** are the following:

i. Receiving of:
1. Containerised radioactive waste.
2. Separating Element Assemblies (SEA's).

ii. Storage of:
1. Containerised radioactive waste.
2. Separating Element Assemblies (SEA's).
3. A Z-Plant enrichment process module.

iii. Transfer of Containerised radioactive waste and SEAs to authorised facilities.

iv. Removal of water from waste containers inside the Repacking Area.

v. Repacking of leaking containers inside the Repacking Area.

vi. Sampling, verification of container content and other non-conditioning ad-hoc operations on waste containers inside the Repacking Area.

vii. Characterisation of containerised radioactive waste.

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viii. Shrink wrapping of waste containers with plastic using the Shrink Wrap oven located on the process floor.

ix. Performing corrective actions on deteriorated stored waste containers, by bagging it or transferring it to the Repacking Area for repacking the waste container.

x. Construction, installation and cold commissioning of the Volume Reduction Facility and the Cell 3 Waste Characterisation and Conditioning Facility.

xi. Temporary storage of effluent in 5 litre containers in geometrically safe trolleys in a dedicated storage area outside the Repacking Area prior to evaporation.

b. The **scope of Actions** that may be undertaken **in the AREA 14 DECOMMISSIONING FACILITIES** are the following:

i. The **Cable Tunnels** are authorised for the following activities:

1. Receiving of aqueous solutions for evaporation originating from uranium facilities under decommissioning.

2. Evaporation of said liquids in the Evaporation Facility.

3. Storage of contaminated wooden pallets.

4. Care and Maintenance activities limited to inspections, radiological protection surveillance monitoring, maintenance and housekeeping.

ii. **Oil Basement** are authorised for the following activities:

1. Phase 2 decommissioning as described in condition B-2.3.1 of Part B-2 to this Nuclear Installation License.

2. Storage of pre-treated waste in drums.

iii. **Control Corridor** are authorised for the following activities:

1. Care and Maintenance activities limited to inspections, radiological protection surveillance monitoring, maintenance and housekeeping.

iv. **Filter Rooms** are authorised for the following activities:

1. Care and Maintenance activities limited to inspections, radiological protection surveillance monitoring, maintenance and housekeeping.

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4. Demarcation of Site Boundary, Site Plans, Designs and Specifications

a. The licensee must maintain a plan of the site (hereinafter called the site plan) showing the location of the boundary of the site and every building, plant or facility on the site.

b. The licensee must demarcate the boundaries of the site by fences or other appropriate means and all such fences or other means used for this purpose must be properly maintained.

c. Prior to making any change to the site, which impacts or has the potential to impact on health, safety, or the environment as contemplated in the Act, the licensee must submit to the NNR an amended site plan and schedule, for approval.

d. The licensee must submit, to the NNR, such plans, diagrams, designs, specifications, or other information relating to the buildings, plants or any other facilities on the site as the NNR may specify.

5. Physical Security

a. The licensee must ensure the safety and security of the –
   i. site; and
   ii. all installations and persons thereon,

b. The physical protection system must be designed to protect against the design basis threat, theft or diversion of radioactive material and sabotage.

c. The licensee must prevent unauthorised persons from entering the site or any part thereof.

6. Transport

a. The transportation of radioactive material or any equipment or objects contaminated with radioactive material must be carried out in compliance with the relevant provisions of the International Atomic Energy Agency's Regulations for the Safe Transport of Radioactive Material, 2005 Edition, IAEA Safety Standard Series No. TS-R-1, IAEA, Vienna, 2005.

b. The licensee must ensure that no radioactive material is brought onto the site or conveyed from the site, except in accordance with processes approved by the NNR.

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c. All on site transport of radioactive material or any equipment or objects contaminated with radioactive material must be carried out in compliance with processes approved by the NNR.

d. The licensee must keep a record of all radioactive material consigned to and from the site. Such record must –
   i. contain particulars of the amount, type and form of such radioactive material, the manner in which it was packaged, the name and address of the person to whom it was consigned to or from and the date when it left or arrived on the site.
   ii. be preserved for a period acceptable to the NNR.

e. The licensee must not undertake any transport of radioactive material to sites, installations or persons not appropriately authorised to receive such material.

7. Restrictions on Dealing with the Site

a. The licensee may not lease, assign, or grant possession to use –
   i. the site, or any portion thereof; or
   ii. any radioactive material,
   to any person not in possession of an appropriate nuclear authorisation, where such an authorisation is required.

b. The licensee must inform the NNR in writing of such intention and request the revocation or amendment of the relevant part of the authorisation as appropriate.

c. The licensee remains responsible for compliance with all conditions of authorisation until such time as said conditions are revoked or amended.

d. The licensee must prevent persons from carrying out any unauthorised actions on the site.

e. The licensee must ensure that no radioactive material intended for use in connection with any new installation, process or modification to the

   existing installation is brought onto site for the first time without consent of the NNR.

f. The licensee must ensure that no radioactive material is stored on the site except in accordance with processes approved by the NNR.

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g. The licensee must ensure that every person authorised to be on the site receives instructions (to the extent that this is necessary having regard to the circumstances of that person being on the site) as regards the risks and hazards associated with the nuclear installations and their operation, the precautions to be observed in connection therewith and the actions to be taken in the event of an accident or emergency on the site.

h. The licensee must implement approved processes for suitable training of all persons who have responsibilities for any operations which may affect safety.

i. The licensee must ensure that suitable and sufficient methods are employed on the site for the purposes of informing persons thereon of each of the following matters –
   i. the meaning of any warning sign used on the site;
   ii. the location of any exit from any place on the site, where such exit is provided for use in the event of an emergency;
   iii. the measures to be taken by such persons in the event of any emergency.

8. Radiological Protection

a. The licensee must implement the approved processes for the purposes of ensuring radiological protection of employees, members of the public and the environment, both on the site and off the site, as a consequence of authorised actions.

b. The normal operational exposure of individuals must be restricted to ensure that neither the effective dose nor the equivalent dose to relevant organs or tissues exceeds any relevant dose limit specified by the NNR.

c. The licensee's radiological protection processes must, under all operating states of the authorised actions or facilities ensure that–
   i. effective radiation doses, including committed effective doses, to persons;
   ii. the number of people who are exposed; and
   iii. the likelihood of incurring exposures to radiation,

   are kept as low as reasonably achievable.

d. A dose register of every occupationally exposed worker must be established and maintained in a form acceptable to the NNR. The licensee must retain the register for a period of at least fifty years from the date of last entry.

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e. The licensee must implement NNR approved processes for the purposes of control of radioactive sources.

9. Medical Surveillance and Health Register

a. A comprehensive medical surveillance programme and health register must be maintained in a form approved by the NNR.

b. All entries in the health register must be made by an appointed medical practitioner or a person so authorised.

c. The appointed medical practitioner must inform the employee of any medical condition, which could have arisen as a result of occupational exposure to radiation.

d. The licensee must retain the register for a period of at least fifty years from the date of last entry.

e. An employee or former employee must have right of access to his medical records and health register at all times.

10. Radioactive Waste Management

a. The licensee must implement NNR approved processes for the minimisation and safe management of radioactive waste on the site.

b. The radioactive waste management programme must –
   i. ensure the identification, quantification, characterisation and classification of any radioactive waste generated;
   ii. provide for the necessary steps leading to safe clearance, authorised discharge, disposal, reuse or recycling; and
   iii. provide for the safe storage of radioactive waste between any waste management processes.

c. The safety of radioactive waste storage options must be assured for the envisaged period of storage.

11. Documents, Records, Authorities and Certificates

a. The licensee must keep adequate records to demonstrate compliance with the conditions of this licence.

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b. The licensee must implement and maintain an approved document management system to ensure that every document required, every record made, every authority, consent or approval granted and every directive or certificate issue in pursuance of these conditions of licence is preserved for 30 years or such other period as the NNR may approve.

c. Operational reports must be submitted to the NNR at predetermined periods, approved by the NNR, and must contain such information as the NNR may require on the basis of the nuclear installation's safety assessment.

12. Events, (including Incidents or Accidents) on the Site

a. The licensee must implement NNR approved processes for the notification, recording, investigation and reporting and closeout of events (incidents, accidents, etc.) occurring on the site –
   i. in accordance with requirements specified by the NNR.
   ii. as required by any other condition attached to this licence, or
   iii. as the licensee considers necessary.

13. Emergency Planning and Preparedness

a. The licensee must implement NNR approved processes related to preparedness for and response to any event, (incident, accident, etc) or other emergency arising on the site and their associated impacts.

b. The licensee must ensure that such processes include procedures to ensure that all persons, in the employ of the licensee, who have duties in connection with such processes are properly trained and instructed in –
   i. the performance of the processes.
   ii. the use of any equipment that may be required, and
   iii. the precautions to be observed.

c. Where such processes require the assistance or cooperation of, or it is expedient to make use of the services of any person, local authority or any other body; the licensee must ensure that such persons, local authority or other body are consulted in the periodic review and update of such processes.

d. The licensee must ensure that all such processes are exercised and tested at such intervals and at such times and to such extent as the NNR may specify or, where the NNR has not so specified, as the licensee considers necessary to ensure their continued viability.

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14. Environmental Protection

a. The licensee must implement NNR approved processes for the protection of public health and the environment arising from the nuclear installation's authorised activities.

b. The licensee must ensure that no radioactive effluent release is made from the site except in accordance with procedures and processes approved by the NNR.

c. The licensee must implement NNR approved processes and procedures for environmental monitoring and surveillance.

15. Duly Authorised and Suitably Qualified and Experienced Persons

a. The licensee must implement NNR approved processes and procedures for ensuring that only suitably qualified and experienced persons perform any duties, which may affect the safety of operations on the site, or any duties assigned by or under these conditions of licence.

b. Such processes and procedures must make provision for the appointment, as appropriate, of duly authorised persons to control and supervise operations, which may affect plant or facility safety.

16. Safety Committee

a. The licensee must implement processes and procedures relating to safety committee(s) to oversee and manage its safety responsibilities and to which it refers for consideration and advice –
   i. matters required by or under this licence.
   ii. safety policies, procedures, processes or documents required by these conditions of licence or as the NNR may specify and any subsequent alteration or amendment to said processes or documents.
   iii. any matter affecting safety on or off the site which the NNR may specify, and
   iv. any other matter, which the licensee considers should be referred to a safety committee.

b. The terms of reference of any such safety committee must be submitted to the NNR.

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c. The licensee must ensure that the members of any such committee are suitably qualified and experienced, so as to enable said committee to consider any matter likely to be referred to it and to advise the licensee authoritatively and, so far as practicable, independently.

d. The licensee must ensure that a safety committee shall consider or advise only during the course of a properly constituted meeting of that committee. Minutes must be kept of all such meetings

17. Safety Documentation

a. The licensee must implement NNR approved processes and procedures for the production and assessment of safety cases consisting of documentation to justify safety during the following lifecycle phases of the installation –
   i. Siting.
   ii. Design.
   iii. Manufacture of component parts.
   iv. Construction.
   v. Commissioning.
   vi. Operation.
   vii. Termination of operation.
   viii. Decontamination, and
   ix. Decommissioning.

b. The safety case must include a risk assessment and demonstration of compliance with the Regulations on Safety Standards and Regulatory

   Practices as well as any other requirements and guidance prescribed by the NNR.

c. The licensee must establish and implement processes for the periodic and systematic review and reassessment of safety cases.

d. The licensee must if so directed by the NNR, carry out a review and reassessment of safety and submit a report of said review and reassessment to the NNR at such intervals, within such period and for such matters or operations as may be specified in the directive.

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18. Quality and Safety Management

a. Quality and Safety Management processes and procedures must be established implemented and maintained in respect of all matters that may affect safety in order to ensure compliance with the conditions of this licence.

b. The licensee must comply with all NNR approved or NNR accepted documents contained in the Necsa Process Based Licensing (PBL) Manual.

c. The licensee must submit to the NNR such copies of records or documents made in connection with the aforementioned processes and procedures as the NNR may specify.

19. Modification to Design of Existing Plant or Facility

a. The licensee must comply with NNR approved processes and procedures relating to control of modification to the design of existing plant, facility or system design including modifications that may be of a temporary nature.

b. The aforesaid processes must provide for the classification of modifications according to their safety significance.

c. Where appropriate modifications must be divided into stages and where the NNR has so specified the licensee must not commence nor thereafter proceed from one stage to the next of the modification without the prior approval of the NNR.

d. The processes must include a requirement for the provision of adequate documentation to justify the safety of the proposed modification and shall where appropriate provide for the submission of such documentation to the NNR.

20. Construction and Commissioning of Plant or Process

a. The licensee must implement NNR approved processes and procedures relating to the construction and commissioning of any plant, facility or process.

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b. Where appropriate, construction and commissioning of the plant or process may be divided into stages. If so specified by the NNR, the licensee must not commence with any stage nor proceed from one stage of the construction or commissioning to the next without the prior approval of the NNR.

21. Limits and Conditions on Operations

a. The licensee must, in respect of any operation that may affect safety, produce a safety case to demonstrate the safety of the operation and identify the limits and conditions necessary in the interest of safety. The limits and conditions of operation must be submitted to the NNR for approval.

b. The licensee must ensure that operations are controlled and carried out in compliance with NNR approved limits and conditions on operations at all times.

c. Where the person appointed in terms of paragraph 15 (a) identifies any matter indicating that the safety of any operation or the safe condition of any plant is compromised, that person must bring it to the attention of the relevant facility management, who must forthwith take appropriate action to ensure that the matter is appropriately notified, recorded, investigated and reported to the NNR.

d. The NNR may in the interests of safety, at any time revoke, amend or impose any limiting condition on operations.

22. Examination, Inspection, Maintenance and Testing

a. The licensee must implement NNR approved processes for the regular, periodic and systematic examination, inspection, maintenance and testing of all plant, systems, structures and components, including software.

b. The aforesaid processes must provide for the preparation of a plant maintenance schedule for each plant or facility. The licensee must submit to the NNR for its approval, such part or parts of any plant maintenance schedule as the NNR may specify.

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c. The licensee must ensure that a full and accurate report of every examination, inspection, maintenance or test, of any part of a plant, system, structure or component, indicating the date thereof and signed by a suitably qualified and experienced person appointed by the licensee, is made.

d. The licensee must ensure, in the interests of safety, that examination, inspection, maintenance and test of a plant or any part thereof is carried out –
   i. only by suitably qualified and experienced persons.
   ii. in accordance with written procedures.
   iii. within the intervals specified in the plant maintenance schedule, and
   iv. under the control and general supervision of a suitably qualified and experienced person appointed by the licensee for that purpose.

e. When any examination, inspection, maintenance or test of any part of a plant reveals any matter indicating that the safe operation or safe condition of that plant may be affected, the suitably qualified and experienced person appointed to control or supervise any such examination, inspection, maintenance or test shall forthwith bring it to the attention of the relevant facility management who shall take appropriate action and ensure the matter is then notified, recorded, investigated and reported in accordance with approved processes.

23. Decommissioning

a. The licensee must implement NNR approved processes for the decommissioning of facilities or any part thereof on the site.

b. The Licensee must submit for approval a decommissioning plan, as early as possible in the life cycle of the activity or facility. The plan should be revisited and updated as necessary.

c. A detailed decommissioning plan must be submitted to the NNR for approval prior to the commencement of decommissioning activities.

d. It must be demonstrated to the NNR that sufficient resources will be available from the time of cessation of operations until termination of the period of responsibility.

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e. Where appropriate decommissioning may be divided into stages. If so specified by the NNR, the licensee may not commence with nor proceed from one stage of the decommissioning to the next without the prior approval of the NNR.

f. The Licensee must establish and maintain a list of all contaminated areas on the site, which will require decontamination in the future.

24. Organizational Change

a. The Licensee must implement NNR approved processes to control any change to its organizational structure or resources that may have a bearing on health, safety and the environment as contemplated in the Act.

b. The processes must provide for the classification of changes to the organizational structure or resources according to their safety significance.

c. The processes must include a requirement for the provision of documentation to justify the safety of the proposed change and shall where appropriate provide for the submission of such documentation to the NNR.

25. Financial Security

a. The Licensee must annually provide proof to the NNR that any claim for compensation to an amount contemplated in Section 30(2) of the Act can be met.

26. Public Safety Information Forum

a. In order to inform the persons living in the municipal area in respect of which an emergency plan has been established, in terms of Section 38(1) of the Act, on nuclear and radiation safety matters, the Licensee must establish a Public Safety Information Forum as prescribed.

27. Inspection Programme

a. Pursuant to the provisions of Section 26(2) of the Act, the Licensee must implement an inspection programme to ensure compliance with all conditions of the nuclear installation licence.

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28. Display of the Nuclear Installation Licence

a. To ensure public access to the conditions specified in this licence, the Licensee must at all times display copies of this Nuclear Installation Licence at the entrance to the installation in the following languages – English, SeTswana and Afrikaans.

b. The Licensee must provide to the NNR documented proof that the translations into SeTswana and Afrikaans are true and accurate translations of the original English text.

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PART B-1: SPECIFIED NNR REQUIREMENTS FOR THE PELSTORE

B-1.1 The approved Operational Technical Specifications (OTS) for PELSTORE is Document NL27/NW-OTS-0015 (Rev 00): *"Operating Technical Specifications and Maintenance Requirements for PELSTORE Facility"*.

B-1.2 The licensee must comply with the requirements, as per the NNR requirements documents, listed in the table below –

Document number	Description
RD-0014 (Rev 0)	Emergency Preparedness and Response Requirements for Nuclear Installations
RD-0016 (Rev 0)	Requirements for authorisation Submissions Involving Computer Software and Evaluation Models for Safety Calculations
RD-0024 (Rev 0)	Requirements on Risk Assessment and Compliance with Safety Criteria for Nuclear Installations
RD-0026 (Rev 0)	Decommissioning of Nuclear Facilities
RD-0034 (Rev 0)	Quality and Safety Management Requirements for Nuclear Installations
LD-1079 (Rev 1)	Requirements in Respect of Licence Change Requests to the National Nuclear Regulator

B-1.3 The storage of radioactive waste containers the PELSTORE is limited to a maximum of one hundred and four thousand (104 000) waste containers.

B-1.4 The storage of Separating element Assemblies (SEAs) is limited to a maximum of forty thousand (40 000) SEAs in the area allocated for the storage of Separating Element Assemblies (SEAs).

B-1.5 Waste containers must be properly sealed and no trace of damage that can lead to a spill may be visible.

B-1.6 Labels on the package must be firmly attached and must display a unique number traceable to the documentation accompanying the package.

B-1.7 Any metallic uranium shall be limited to bulk form which is defined by the following:

i. The items must be dry (no water or oil or grease).
ii. The volume of the metal in an item shall not be less than 5 cm^3.

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iii. The surface of every item shall be smooth (e.g. there shall be no machining burrs on the item) and the minimum thickness of un-interrupted metal shall be 10mm.

B-1.8 Pressurised containers placed in waste containers, which may also have contained gases or other substances, particularly hazardous or toxic materials, must be emptied and their valves left open prior to containerisation.

B-1.9 Hazardous materials, liquids and gaseous substances may not be accepted in the facility.

B-1.10 The ^{235}U content in an ingot must be < 500g.

B-1.11 Unwashed SEAs must be covered in double plastic.

B-1.12 Waste with nuclides other than those in Table 1 below may not be accepted in PELSTORE without the prior approval of the NNR which must be submitted to the NNR under cover of an Authorisation Change Request (ACR):

Table 1: Table of nuclides that may be accepted in the PELSTORE

Key nuclides	Considered nuclides
^{238}U	^{231}Th, ^{234Th}, ^{234}U, ^{234m}Pa, ^{235}U, ^{238}U
^{14}C ^{60}Co ^{99}Tc ^{137}Cs	^{3}H, ^{10}Be, ^{14}C, ^{24}Na, ^{27}Mg, ^{28}Mg, ^{28}Al, ^{31}Si, ^{32}Si, ^{32}P, ^{33}P, ^{35}S, ^{42}K, ^{56}Mn, ^{57}Co, ^{58}Co, ^{60}Co, ^{76}As, ^{79}Se, ^{82}Br, ^{86}Rb, ^{90}Sr, ^{93}Zr, ^{95}Nb, ^{99}Mo, ^{99}Tc, ^{103}Ru, ^{115}Cd, ^{125}I, ^{125}Sb, ^{125}Sn, ^{131}I, ^{137}Cs, ^{138}Cs, ^{192}Ir.
^{239}Pu	^{232}Th, ^{234}Th, ^{234}U, ^{239}Pu, ^{241}Am, ^{238}Au, ^{226}Ra.

B-1.13 The maximum total inventory for isotopes in the PELSTORE is 1,0 E+15 Bq.

B-1.14 Classified waste in drums must be packed on pallets and the stacking of pallets may not exceed 3 tiers high (4 drums per pallet);

B-1.15 Unclassified waste in drums must be packed on pallets and the stacking of pallets may not exceed 2 tiers high (4 drums per pallet);

B-1.16 Concrete waste containers may only be stored in single rows, maximum 1 tier high.

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B-1.17 Waste drums stored on the Pipebridge may only be stacked to a maximum of 2 tiers high.

B-1.18 SEA's must be packed on pallets and the stacking of pallets may not exceed 2 tiers high.

B-1.19 Not more than one waste drum is allowed in the Repacking Area at a time.

B-1.20 All water removed from drums in the Re-packing Room must be:

i. Collected in 5-litre containers only.
ii. Transported in a geometrically safe trolleys and
iii. Evaporated either at A-Building, or in the evaporating pans in the Re-packing Room.

B-1.21 The number of evaporation pans in the Re-Packing Area is limited to one (1) evaporation pan.

B-1.22 The depth of the evaporation pan in the Re-packing Area is limited to a maximum of 38 mm.

B-1.23 Water for washing purposes is limited to a maximum of 5 litres in the PELSTORE.

B-1.24 Contaminated wash water must be:

i. Collected in 5-litre containers only.
ii. Transported in a geometrically safe trolleys.

and may be evaporated either at A-Building, or in the evaporating pan in the Re-Packing Area.

B-1.25 Geometrically safe trolleys with water from the Re-packing Room must be stored in the demarcated area outside the Repacking Area.

B-1.26 Transfers of radioactive material or radioactively contaminated equipment from the facility to other facilities on the Pelindaba site must comply with the requirements for on-site transfer and may only be undertaken to facilities that are appropriately authorized to receive said equipment and material.

B-1.27 Transfers of Low Level Waste originating from the Necsa Pelindaba site in approved waste packages (steel drums) to the Vaalputs Radioactive Waste Disposal Facility may be undertaken on condition that said waste packages complies with the requirements of the currently approved Waste Acceptance Criteria for Vaalputs.

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B-1.28 With the exception of the transfers authorised under Section B-1.27, no off-site transfer of radioactive material or radioactively contaminated equipment may be undertaken by the facility without prior NNR approval.

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PART B-2: SPECIFIED NNR REQUIREMENTS FOR THE DECOMMISSIONING FACILITIES

B-2.1 The licensee must comply with the requirements, as per the NNR requirements documents, listed in the table below –

Document number	Description
RD-0014 (Rev 0)	Emergency Preparedness and Response Requirements for Nuclear Installations
RD-0016 (Rev 0)	Requirements for authorisation Submissions Involving Computer Software and Evaluation Models for Safety Calculations
RD-0024 (Rev 0)	Requirements on Risk Assessment and Compliance with Safety Criteria for Nuclear Installations
RD-0026 (Rev 0)	Decommissioning of Nuclear Facilities
RD-0034 (Rev 0)	Quality and Safety Management Requirements for Nuclear Installations
LD-1079 (Rev 1)	Requirements in Respect of Licence Change Requests to the National Nuclear Regulator

B-2.2 **Cable Tunnels**

B-2.2.1 In the **Evaporation Facility** situated in the Cable Tunnels:

i. Only of aqueous solutions originating from uranium facilities under decommissioning may be received for evaporation.
ii. The solutions considered for evaporation must be water based;
iii. The maximum ^{235}U enrichment may not exceed 5%;
iv. The liquid will be in 5-litre containers in a subcritical configuration;
v. A maximum of fifteen (15) evaporation pans 2 metre long x 1.5 metre wide and 90 mm deep may be used in the Evaporation Facility in the Area 14 Cable Tunnels.

B-2.2.2 The storage of pre-treated waste in drums in the Cable Tunnels of Area 14 is limited to a maximum of sixteen (16) drums only.

B-2.2.3 Transfers of radioactive material and contaminated equipment from the facility to other facilities on the Pelindaba site must comply with the requirements for on-site transfer and may only be undertaken to facilities that are appropriately authorized to receive said equipment and material.

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B-2.2.4 No off-site transfer of radioactive material or radioactively contaminated equipment may be undertaken by the facility without prior NNR approval.

B-2.2.5 The facility must maintain a NNR approved care and maintenance programme.

B-2.2.6 Decommissioning of the facility requires prior NNR approval which must be applied for under an Authorisation Change Request (ACR).

B-2.3 **Oil Basement**

B-2.3.1 Phase 2 decommissioning is authorised to take place in the Oil Basement in accordance with an NNR approved decommissioning strategy and plan.

B-2.3.2 The storage of pre-treated waste in drums in the Oil Basement is limited to a maximum of one thousand and eighty three (1083) drums only.

B-2.3.3 Transfers of radioactive material and contaminated equipment from the facility to other facilities on the Pelindaba site must comply with the requirements for on-site transfer and may only be undertaken to facilities that are appropriately authorized to receive said equipment and material.

B-2.3.4 No off-site transfer of radioactive material or radioactively contaminated equipment may be undertaken by the facility without prior NNR approval.

B-2.4 **Control Corridor**

B-2.4.1 The facility must maintain a NNR approved care and maintenance programme.

B-2.4.2 Decommissioning of the facility requires prior NNR approval which must be applied for under an Authorisation Change Request (ACR).

B-2.4.3 Transfers of radioactive material and contaminated equipment from the facility to other facilities on the Pelindaba site must comply with the requirements for on-site transfer and may only be undertaken to facilities that are appropriately authorized to receive said equipment and material.

B-2.4.4 No off-site transfer of radioactive material or radioactively contaminated equipment may be undertaken by the facility without prior NNR approval.

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B-2.5 **Filter Rooms**

B-2.5.1 The facility must maintain a NNR approved care and maintenance programme.

B-2.5.2 Decommissioning of the facility requires prior NNR approval which must be applied for under an Authorisation Change Request (ACR).

B-2.5.3 Transfers of radioactive material and contaminated equipment from the facility to other facilities on the Pelindaba site must comply with the requirements for on-site transfer and may only be undertaken to facilities that are appropriately authorized to receive said equipment and material.

B-2.5.4 No off-site transfer of radioactive material or radioactively contaminated equipment may be undertaken by the facility without prior NNR approval.

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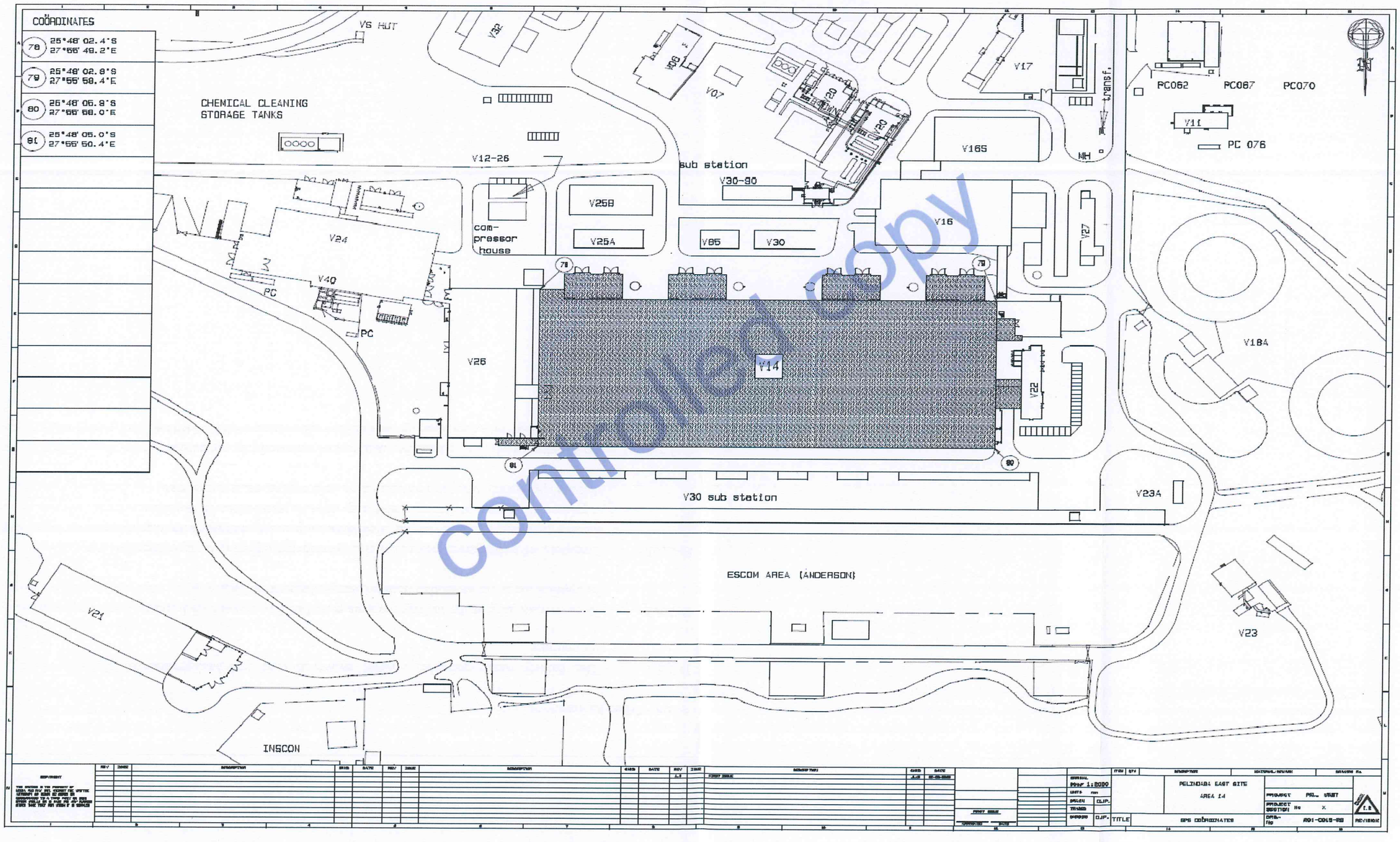


Figure 1: Location of Area 14 Waste Management Facility on the Pelindaba site

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