

C3: Scope of Work

C3.1 Works Information

1. Description of the works

1. The works comprise remedial repairs to the fuel containment area and the construction of one impermeable hazardous-waste skip containment area at Port Rex Power Station.
2. The fuel containment works include:
 - a. cleaning and removal of vegetation, debris and contaminants from the fuel containment area;
 - b. inspection and repair of existing expansion joints, construction joints and sawn joints in the bund walls and floor slabs;
 - c. removal of defective existing sealants and installation of new chemical-resistant joint sealant systems, including backing material and primers where required;
 - d. preparation and repair of cracks in the fuel containment area walls and floors using appropriate epoxy injection resin, flexible chemical-resistant sealant or other accepted repair systems in accordance with the Works Information and Manufacturer's requirements; and
 - e. associated inspection, testing, quality control, cleaning, making good and completion documentation.



Figure 1: Fuel containment area bund walls at Port Rex Power Station*(highlighted in red)

3. The hazardous-waste skip containment works include:
 - a. setting out and preparation of the work area;
 - b. clearing, excavation, founding preparation and compaction;

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- c. construction of a reinforced concrete containment slab;
- d. construction of masonry bund walls and associated reinforcement, ties and connections;
- e. internal plastering;
- f. forming falls towards the low-point sump;
- g. preparation and application of a chemical-resistant epoxy coating system to internal containment surfaces;
- h. testing of the concrete and coating system;
- i. a minimum 24-hour water-retention test; and
- j. final inspection, cleaning, making good and handover.



Figure 2: Example of existing waste Skip Storage

- 4. The hazardous-waste skip containment area accommodates two 6 m³ hazardous-waste skips.
- 5. The Contractor provides all labour, Plant and Materials, Contractor's Equipment, temporary works, access arrangements, supervision, quality control, testing and other resources necessary to Provide the Works in accordance with this Works Information.

2. Drawings

The following Employer drawing forms part of the Works Information and applies to the hazardous-waste skip containment area:

Drawing number	Revision	Title
18.49/494	[TO BE CONFIRMED]	Hazardous-Waste Skip Containment Area – Port Rex Power Station

- 1. The Contractor uses the drawing together with this Works Information.
- 2. The Contractor verifies all accessible dimensions, levels and interfaces against the actual Site conditions before commencing the affected work.
- 3. The Contractor notifies the Employer of any discrepancy, ambiguity or inconsistency between the drawing, the Works Information and actual Site conditions before proceeding with the affected work.
- 4. Verification by the Contractor does not transfer responsibility for the Employer's design to the Contractor.

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5. The Contractor does not alter the dimensions, structural arrangement, containment capacity or design philosophy shown on the Employer's drawing without the Employer's acceptance and, where applicable, an instructed change to the Works Information.

3. Specifications

1. The Contractor complies with the latest applicable editions of the following standards and requirements identified in the Engineering Scope of Work.

Title	Date or revision	Tick if publicly available
ISO 9001 Quality Management Systems		✓
OHS Act No. 85 of 1993 Occupational Health and Safety Act		✓
36-681 Generation Plant Safety Regulations		Available on Request
240-62196227 Eskom Life-Saving Rules		Available on Request
240-53665024 Engineering Quality Manual		Available on Request
240-53114002 Engineering Change Management Procedure		Available on Request
SANS 1200 Standard Specifications for Civil Engineering Construction		✓
SANS 10400 The application of the National Building Regulations		✓
SANS 10400-J Floors		✓
SANS 110:2011 Sealing compounds for the building industry, two-component, polysulphide base		✓

2. Engineering changes affecting the Employer's design are managed in accordance with **Eskom Engineering Change Management Procedure 240-53114002**.

3.1 Fuel containment area – technical requirements

1. The Contractor inspects and repairs all expansion joints, construction joints and sawn joints within the fuel containment area bund walls and floor slabs.
2. Existing deteriorated sealant is mechanically removed and the joint faces are prepared to remove old sealant, oil, contaminants, dust, vegetation, loose material and foreign matter.
3. Joint faces are cleaned and allowed to dry as required by the Manufacturer before installation of the sealing system.

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4. The Contractor provides the correct size backing cord at the depth required to achieve the Manufacturer's specified width-to-depth ratio.
5. Backing material is closed-cell expanded polyethylene cord or strip, or an accepted equivalent compatible with the sealing system.
6. The joint sealing system is suitable for vertical and horizontal joints and resistant to diesel, fuel oil, hydrocarbons, contaminated stormwater, ultraviolet exposure and the weathering conditions at Port Rex Power Station.
7. Sikasil 728 NS or accepted equivalent is used for joint sealing. The complete system, including backing material, primer and sealant, is installed in accordance with the Manufacturer's requirements.
8. The Contractor assesses each crack before repair and determines whether it is non-moving or subject to movement.
9. Cracks exhibiting no movement are repaired using a low-viscosity epoxy injection resin such as Sikadur 52 ZA or accepted equivalent.
10. Cracks subject to thermal movement are routed and sealed using a flexible chemical-resistant sealant such as Sikasil 728 NS, Sikaflex Pro-3 or accepted equivalent.
11. Before commencing crack repairs, the Contractor submits the proposed repair methodology, technical data sheets and installation requirements to the Employer for acceptance.
12. Completed repairs exhibit no visible leakage, separation, debonding or cracking and the repaired fuel containment area maintains liquid-tight integrity.
13. All surfaces receiving sealant or repair products are prepared in accordance with the relevant Manufacturer's requirements.

3.2 Hazardous-waste skip containment area – technical requirements

1. The works comprise one hazardous-waste skip containment area accommodating two 6 m³ hazardous-waste skips.
2. The containment area is constructed in accordance with this Works Information and Employer Drawing 18.49/494.
3. The containment dimensions are:

Description	Length	Width	Minimum height
Outside bund wall dimensions	6.30 m	4.30 m	0.40 m
Internal bund wall dimensions	6.02 m	4.02 m	0.20 m

4. The approximate internal containment volume is 4.8 m³.
5. Foundation preparation includes:
 - clearing and grubbing and removal of minimum 150 mm topsoil where applicable;
 - excavation to approximately 200 mm below natural ground level;
 - ripping and recompaction of 150 mm of the founding layer;
 - replacement of unsuitable founding material with G7 material where required;
 - G7 backfill placed in maximum 150 mm layers where required;
 - compaction to 95% Mod AASHTO; and

- 50 mm, 10 MPa concrete blinding where required.
6. The containment slab is 200 mm thick, 30 MPa reinforced concrete.
 7. Reinforcement is Ref 617 mesh at both the top and bottom layers, with minimum 40 mm concrete cover, supported on approved spacers and reinforcement stools.
 8. The bund walls are brick masonry and are connected to the reinforced concrete slab using wall ties or similar accepted connections.
 9. Internal masonry surfaces receive 15–20 mm cement-sand plaster.
 10. All internal containment surfaces, including the slab surface within the bund, receive an accepted chemical-resistant epoxy coating system with a minimum total dry film thickness of 500 microns, resistant to hydrocarbons, oils and contaminated runoff.
 11. Surfaces receiving the coating are clean, dry and prepared in accordance with the Manufacturer's requirements.
 12. The slab is graded towards the low-point sump for controlled collection and removal of accumulated contaminated liquid by pumping.
 13. The slab is formed to approximately 1:100 falls towards the collection point in accordance with Drawing 18.49/494.
 14. The completed containment area is impermeable and capable of retaining contaminated stormwater and incidental hydrocarbon spillages without leakage.
 15. The design accommodates the stated 1:50-year storm event of approximately 150 mm rainfall, corresponding to approximately 3.6 m³ of stormwater against the approximately 4.8 m³ containment capacity.
 16. The hazardous-waste skips are intended for solid hazardous waste and are fitted with lids. The containment area is therefore not based on a 110% liquid-storage secondary-containment requirement.
 17. The containment arrangement provides sufficient access for safe placement and removal of the two skips using existing Site handling equipment.

3.3 Testing and verification

1. The completed hazardous-waste skip containment area undergoes a minimum 24-hour water-retention test.
2. The Contractor submits concrete cube-strength results confirming achievement of the specified 30 MPa concrete strength.
3. The Contractor submits coating dry-film-thickness measurements confirming the specified minimum 500 micron DFT.
4. The Contractor submits the Manufacturer's compliance certificates.
5. Defects identified during inspection or testing are corrected before Completion of the affected work.

4. Constraints on how the Contractor Provides the Works

4.1 Meetings

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1. A pre-start / inaugural meeting is held before physical work commences on Site.
2. The Employer and Contractor discuss the programme, Site access, safety, environmental requirements, quality requirements, work sequence, interfaces, planned inspections, testing and other matters necessary for execution of the works.
3. Early warning and compensation event meetings are held when required by the contract.
4. Progress and coordination meetings are held as required by the Employer during execution of the works.
5. The Contractor attends Site safety meetings, toolbox talks and other operational coordination meetings required by Port Rex Power Station.
6. The Contractor ensures that appropriately authorised and competent persons attend meetings where their input, decision or technical knowledge is required.
7. Minutes of formal contract meetings are recorded and issued by the party agreed at the meeting

4.2 Use of standard forms

1. The Contractor uses the Employer's prescribed contract administration forms and templates where these are provided for administration of the contract.
2. Formal communications relating to early warnings, compensation events, payment, programme, Defects, instructions, submissions and other contractual matters clearly identify:
 - the contract number;
 - the contract title;
 - the subject of the communication;
 - the relevant clause or contractual matter, where applicable;
 - the date; and
 - the person issuing the communication.
3. Where the Employer provides standard forms for Site access, safety, quality, inspection, testing or other operational requirements, the Contractor uses those forms.
4. Use of an Employer form does not alter the rights or obligations of either Party under the contract.

4.3 Invoicing and payment

1. In terms of core clause 50, the Contractor assesses the amount due and applies to the Employer for payment.
2. The Contractor submits a valid tax invoice only after the applicable amount due has been assessed in accordance with the contract.
3. The Contractor's tax invoice includes, as a minimum:
 - the Contractor's name and address;
 - the contract number and contract title;
 - the Contractor's VAT registration number;
 - the Employer's VAT registration number 4740101508;
 - the applicable assessment period;

- the total Price for Work Done to Date;
 - other amounts due to the Contractor, where applicable;
 - amounts retained or deducted;
 - the change in the amount due since the previous assessment;
 - the amount excluding VAT;
 - VAT; and
 - the amount including VAT.
4. The Contractor attaches sufficient supporting detail to each application for payment to demonstrate the amount claimed against the relevant Price List items.
 5. For measured work, the Contractor provides the measurements and calculations supporting the quantities claimed.
 6. For testing, quality or Completion-related items, the Contractor provides the applicable records required by the Works Information before those items are included in the amount due.
 7. Invoices are submitted in accordance with the Employer's applicable electronic invoicing and payment procedures.
 8. An invoice which does not comply with the requirements of the contract or the Employer's invoicing requirements may be returned for correction.

4.4 Records of Defined Cost

1. The Contractor keeps records necessary to substantiate Defined Cost used in the assessment of compensation events.
2. The records include, where applicable:
 - amounts paid for people employed by the Contractor;
 - Plant and Materials;
 - work subcontracted by the Contractor;
 - Contractor's Equipment;
 - invoices and quotations;
 - delivery notes and proof of payment;
 - time records;
 - Equipment usage records; and
 - any other records reasonably required to verify the Defined Cost.
3. The records are maintained in an auditable form and are made available to the Employer on request.
4. The Contractor retains these records for the duration of the contract and for any further period required by the Employer's applicable record-retention requirements.

4.5 BBEE and preferencing scheme

1. The Contractor complies with the B-BBEE and preferencing commitments forming part of its accepted tender, where applicable.

2. The Contractor notifies the Employer of any change in its B-BBEE status in accordance with the Contract Data.
3. No additional B-BBEE or preferencing obligations apply unless expressly stated in the contract or accepted tender.

4.6 Facilities to be provided by the Contractor

1. The Contractor provides all facilities necessary to Provide the Works, except those expressly stated in Section 6 as being provided by the Employer.
2. The Contractor provides, where required:
 - Site office and storage facilities;
 - sanitary facilities;
 - potable water for its personnel;
 - temporary lighting;
 - electrical supply required for the works;
 - tools and Contractor's Equipment;
 - access equipment and working platforms; and
 - security measures for the works, Plant and Materials and Contractor's Equipment.
3. The Contractor keeps its facilities clean, orderly and secure for the duration of the works.
4. The location and arrangement of temporary facilities are subject to the Employer's Site access, operational and safety requirements.
5. The Contractor removes its temporary facilities and restores affected areas on completion.

4.7 Title to material from excavation and demolition

1. Material arising from excavation, demolition, removal of existing sealants, vegetation clearing, cleaning and other preparatory work remains the property of the Employer unless the Employer instructs otherwise.
2. The Contractor does not remove from Site any material having potential value to the Employer without the Employer's prior instruction.
3. Waste, spoil, contaminated material and other material identified for disposal is handled, transported and disposed of in accordance with the Works Information and applicable legal requirements.
4. The Contractor provides disposal records and certificates where required.

4.8 Design by the Contractor

1. The permanent containment works are constructed in accordance with the dimensions, design philosophy and requirements stated in this Works Information and Employer Drawing 18.49/494.
2. The Contractor develops the construction detailing, temporary works, formwork, access arrangements, proprietary product selections and installation details necessary to construct the Employer's approved design.

3. The Contractor does not alter the dimensions, structural arrangement, containment capacity or design philosophy stated in the Works Information or Drawing 18.49/494 without the Employer's acceptance and, where applicable, an instructed change to the Works Information.
4. The Contractor is responsible for the design of temporary works, access arrangements, working platforms, formwork, temporary supports and other temporary measures necessary to Provide the Works safely.
5. Where the Contractor proposes an equivalent proprietary sealant, crack-repair or coating product or system, the Contractor submits technical data, compatibility information, installation requirements and supporting information to the Employer for acceptance before use.
6. Contractor design and product submissions are made sufficiently in advance to allow review without delaying the works.
7. Acceptance of a Contractor design or product submission does not transfer responsibility for that design from the Contractor and does not relieve the Contractor of any obligation under the contract.
8. Engineering changes affecting the Employer's design are managed in accordance with Eskom Engineering Change Management Procedure 240-53114002.
9. The Contractor notifies the Employer of any discrepancy between the Employer's design information and actual Site conditions before proceeding with the affected work.

4.9 Cataloguing requirements by the Contractor

Not applicable.

5. Requirements for the programme

1. The Contractor submits a programme showing how the works will be completed within the period from the Starting Date to the Completion Date.
2. The programme is submitted in Gantt chart format in PDF and includes, as a minimum:
 - mobilisation and Site establishment;
 - planned start and finish dates for each principal activity;
 - proposed duration of each activity;
 - sequence and links between activities;
 - resources required for the principal activities;
 - Site establishment and de-establishment;
 - health, safety and environmental activities, including Site induction;
 - inspection, testing and quality verification activities;
 - float;
 - key submission and acceptance dates;
 - testing and verification activities; and
 - final cleaning, handover and Completion activities.
3. The programme clearly identifies the sequence of:
 - fuel containment joint repairs;

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- crack repairs;
 - hazardous-waste skip containment construction;
 - curing periods;
 - coating preparation and application;
 - concrete testing;
 - coating thickness verification; and
 - the 24-hour water-retention test.
4. The Contractor updates the programme regularly during execution of the works and submits the updated programme to the Employer when requested and whenever progress indicates that Completion may be affected.
 5. The Contractor gives an early warning when it becomes aware of any matter which could increase the total of the Prices, delay Completion or impair the performance of the works.
 6. Changes to the programme do not change the Starting Date or Completion Date unless changed in accordance with the contract.
 7. The intended use of the works at Completion is:
 - the fuel containment area is liquid-tight and fit for its intended containment function; and
 - the hazardous-waste skip containment area is complete, impermeable, tested and ready for operational use.

6. Services and other things provided by the Employer

1. The Employer provides access to the Site, subject to the applicable security, induction, permit-to-work and operational requirements.
2. The Employer identifies potable-water supply points which may be used by the Contractor, subject to availability and the location of such supply points.
3. The Employer provides the applicable Employer forms required for Site access, safety, quality, inspection and related contract administration.
4. The Employer makes appropriately authorised representatives available for inspections, Hold Points, Witness Points and acceptance activities identified in the accepted programme and notified by the Contractor.
5. The Employer does not provide:
 - electrical supply for the Contractor's works;
 - temporary lighting;
 - Contractor's Equipment, tools or access equipment;
 - sanitary or ablution facilities at the work area;
 - Site office or storage facilities; or
 - potable water for the Contractor's personnel.
6. Where an Employer potable-water supply point is made available, the Contractor provides all temporary hoses, tanks, pumps, fittings and distribution required from that point to the work area.

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7. The Contractor does not connect to or interfere with any Employer service without the required Site authorisation.

C4: Site Information

C4.1: Information about the *site* at time of tender which may affect the work in this contract

1. Access limitations

1. Access to Port Rex Power Station is restricted to authorised personnel and vehicles.
2. The Contractor complies with the Employer's security, Site access, induction and permit-to-work requirements before commencing work and throughout the contract.
3. Contractor personnel are subject to security clearance requirements, including police clearance where required by the Employer.
4. The Contractor provides the Employer with the required personnel identification details and vehicle registration information sufficiently in advance of the intended Site access.
5. Personnel enter the Site through the designated security access point and comply with all security instructions.
6. All personnel complete the required Site induction and comply with the Employer's Life-Saving Rules.
7. Contractor personnel are subject to the Employer's alcohol and fitness-for-work requirements. A person who does not satisfy the applicable Site requirements is not permitted to enter or remain on Site.
8. The Contractor provides the personal protective equipment required for its personnel and the work being performed.
9. Access to operational or restricted areas is subject to the applicable permit, authorisation and operational requirements of Port Rex Power Station.
10. The Contractor allows for these access requirements and restrictions in its programme and Prices.

2. Ground conditions in areas affected by work in this contract

1. No detailed geotechnical information is provided by the Employer for the work areas.
2. The Contractor assesses the visible ground conditions and the work area during the compulsory Site clarification meeting and before commencing excavation.
3. The Contractor verifies the suitability of the founding conditions exposed during excavation before proceeding with the containment construction.
4. Where unsuitable founding material is encountered, the Contractor notifies the Employer before removing or replacing material beyond that required by the Works Information.
5. The Works Information provides for removal of unsuitable founding material and replacement with G7 material where required

3. Hidden and other services within the *site*

1. Existing underground or concealed services may be present within or adjacent to the work areas.

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2. Before commencing excavation, drilling, cutting or other intrusive work, the Contractor establishes the position, depth and extent of existing services which may be affected.
3. The Contractor coordinates with the Employer and obtains the required Site information, permits and authorisations before carrying out intrusive work.
4. The Contractor protects and, where necessary, temporarily supports existing services, structures and other Site assets affected by the works.
5. Where an unidentified service or condition materially different from the available Site information is encountered, the Contractor stops the affected work and notifies the Employer before proceeding.
6. The Contractor does not alter, disconnect, remove or damage an existing Employer service without the Employer's prior instruction or Site authorisation.

4. Details of existing buildings / facilities which *Contractor* is required to work on

1. Port Rex Power Station is an operational power station and the works are carried out within existing operational facilities.
2. The Contractor works on and adjacent to the existing fuel containment area, including the bund walls, floor slabs, joints and cracks identified in the Works Information.
3. The hazardous-waste skip containment area is constructed at the location identified by the Employer within the Site.
4. The Contractor protects existing structures, foundations, services, plant and equipment which may be affected by the works.
5. Particular care is taken where existing pylons or other structures and foundations are located within or adjacent to the work area. The Contractor does not undermine, disturb or damage any such foundation.
6. The Contractor verifies the interfaces between the works and existing facilities before commencing the affected activity and notifies the Employer of any discrepancy or condition which may affect the works before proceeding.