	<b>SCOPE OF WORK</b>	<b>Peaking</b>
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Title: **Scope of Work for Standby Welding Services for the Waterways at Peaking Pumped Storage Schemes (Drakensberg, Ingula and Palmiet PS)** Document Identifier: **167A/16067**

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## **CONTROLLED DISCLOSURE**

## 1. Introduction

This document details the Scope of Work and serves as input for the ten (10) year Term Services Contract that Eskom is planning to institute for the Standby Welding Services for the Waterways at the three (3) Pumped Storage Schemes (Drakensberg, Ingula and Palmiet Power Station (PS)).

The Contract enables the use of an ISO 3834-2 Certified *Contractor* as the work performed is on Eskom Level 1 Classified Plant.

## 2. Supporting Clauses

### 2.1 Scope

This document provides the detailed Scope of Work for the Standby Welding Services for the Waterways at Peaking Pumped Storage Schemes (Drakensberg, Ingula and Palmiet PS).

#### 2.1.1 Purpose

The purpose of this Scope of Work (SOW) is to state the *Employer's* technical requirements and provide the *Contractor* with the necessary information to submit a comprehensive tender.

#### 2.1.2 Applicability

This document shall apply to Peaking, specifically Drakensberg, Ingula and Palmiet PS and is to be used as an input to the associated Works Information NEC Contracts.

#### 2.1.3 Effective date

As per authorisation date.

### 2.2 Normative/Informative References

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

#### 2.2.1 Normative

- |     |                         |   |
|-----|-------------------------|---|
| [1] | ISO 9001                | Quality Management Systems.                       |
| [2] | 240-105658000           | Supplier Quality Management Specification         |
| [3] | 240-106628253           | Standard for Welding Requirements on Eskom Plant  |
| [4] | 240-62196227            | Eskom Life-saving Rules Directive 23-421          |
| [5] | 32-136                  | <i>Contractor</i> Health and Safety Requirements  |
| [6] | OHS Act                 | Occupational Health and Safety Act No. 85 of 1993 |
| [7] | 240-150642762           | Generation Plant Safety Regulations               |
| [8] | Local Authority By-laws |   |

### CONTROLLED DISCLOSURE

[9] SANS 10400 National Building Regulations and Building Standards Act

### 2.2.2 Informative

- [10] NEC3 ECC Document & Guidance Notes
- [11] SANS Standards
- [12] SANS 1200 SANS Standard Specifications for Civil Engineering Construction
- [13] SANS 10400 The application of the National Building Regulations
- [14] R1010 Construction Regulations
- [15] 167A/49 Drawing and documentation standard for *Contractors*
- [16] 167A/143 Drawing Office Standard
- [17] 167A/49 Documentation Process Procedure
- [18] 240-83539994 Standard for Non-Destructive Testing on Eskom Plant

### 2.2.3 Disclosure Classification

**Controlled disclosure:** controlled disclosure to external parties (either enforced by law, or discretionary).

## 2.3 Definitions

Definition	Description
Inspection	Activities, which by means of examination, observation or measurement, determine the conformance of material, parts, components etc., to predetermined specifications and quality requirements.
Maintenance	A combination of all technical, administrative and managerial actions during the life cycle of an item intended to retain it in, or restore it to, a condition in which it can perform its required function.
Repair	Restore (something damaged, faulty, or worn) to a good condition.

## 2.4 Abbreviations

Abbreviation	Explanation
ECSA	Engineering Council of South Africa
ISO	International Standards Organisation
NEC	New Engineering Contracts
No	Number
OHSA	Occupational Health & Safety Act

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Abbreviation	Explanation
QA	Quality Assurance
QC	Quality Control
QCP	Quality Control Plan
SANS	South African National Standard
PM	Project Manager
PPE	Protective Personal Equipment
SOW	Scope of Works

## 2.5 Process for Monitoring

N/A

## 2.6 Related/Supporting Documents

### 2.6.1 Drawings

Drawing Number	Revision	Title
<b>Ingula PSS</b>		
0.83/23 250 Sheet 1	4	Plan Layout in Relation to Overall Scheme
0.83/23 306 Sheet 4	1	HP Shaft 3/4 FCW Weld Map Location
0.83/23 306 Sheet 3	1	HP Shaft 1/2 FCW Weld Map Location
<b>Drakensberg PSS</b>		
0.48/2294	0	Weld Types
0.48/20249	0	Inclined shaft and Surge Tank connection
0.48/21261	1	Pressure Tunnel
0.48/21262	1	Bifurcation and Portals of Penstock Shafts
0.48/20252	0	Penstock Shafts
<b>Palmiet PSS</b>		
0.48/4821	0	Layout of the Scheme
0.48/20938	0	Welding types

### CONTROLLED DISCLOSURE

0.48/20941	2	Lower Penstock Pipe
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### **3. EXECUTIVE OVERVIEW**

The Waterways System of a pumped storage scheme refers to the network of structures and channels that convey water from the upper dam to the lower dam via the pumped-turbine and vice versa. This system is an integral part of the power station as it ensures that water flows efficiently to the turbines in the correct volume and under the right pressure. The components of a waterways system are subject to varying pressures, water fluctuations, scour and water hammer. Therefore, requiring periodic inspection and maintenance as per the plant's maintenance philosophies.

This contract therefore makes provision for the Standby Welding Services (repairs) at the three (3) Peaking Pumped Storage Schemes (Drakensberg, Ingula and Palmiet PS). This contract further constitutes a 10-year agreement that makes provision for the supply of all labour, equipment and materials, parts, supervision and transportation necessary to provide the Standby Welding Services as required by the relevant codes, regulations and standards for work performed on Eskom Level 1 Classified Plant.

#### **3.1 Drakensberg Power Station**

The Drakensberg Pumped Storage Scheme is reached from Harrismith via the R49 to Kestel and consists of 4 units with a generating capacity of 333MW per unit.

The waterways at Drakensberg Pumped Storage Scheme upstream of the machine hall complex comprise the headrace tunnel, the surge shaft, the pressure shafts, the pressure tunnels and the steel lined penstocks. There are two waterways serving four generator units and these are referred to as Waterways 1/2 and 3/4 respectively. The layout of these waterways is depicted on drawing No. 0.48/4821.

The Waterway System requiring Standby Welding Services at Drakensberg PS is limited to the Pressure Tunnel, Penstock, Bifurcation and Draft Tube.

The penstock consists of 79 cans constructed in shop and each can containing between 1 and 5 strakes. The strakes are either constructed with one or two longitudinal welds and is dependent on the diameter of the can.

The strake-to-strake circumferential welds were also constructed in shop and are of a better quality than site welds.

The estimated total length of weldments that are inspected by Magnetic Particle Testing (MT) and Ultrasonic Testing (UT) are approximately 5200m and 2600m respectively in total.

The maximum permissible design operating pressure within the waterway system is 7.2Mpa.

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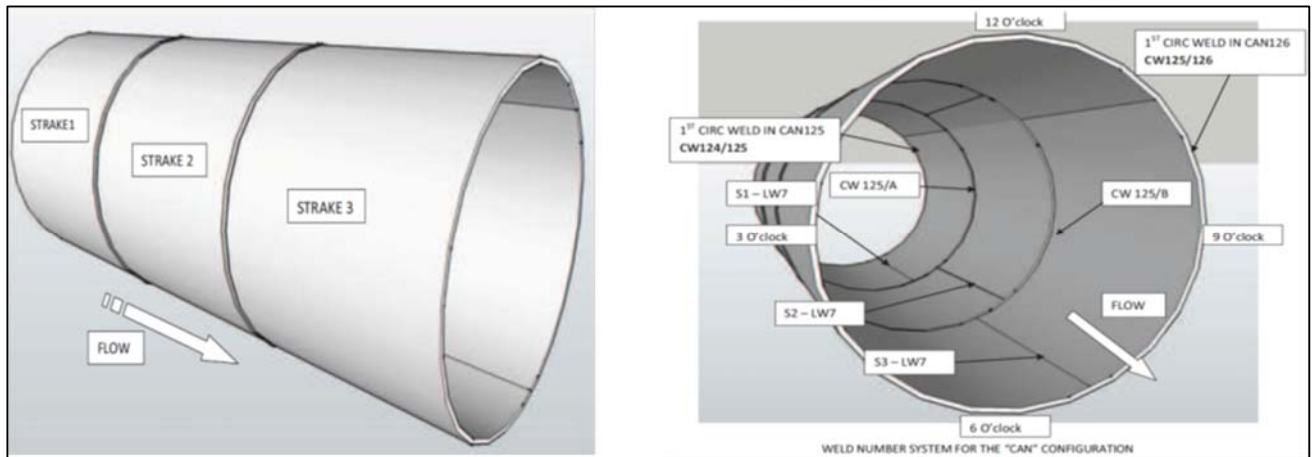


Figure 1: Waterway Can makeup

### 3.2 Ingula Power Station

The Ingula Pumped Storage Scheme (IPSS) is situated north-east of Van Reenen's Pass and consists of 4 units with a generating capacity of 333MW per unit. The plant is part of a water transfer scheme consisting of an upper and lower dam connected by underground waterways to reversible pump turbines, generating electricity for supply into the national grid during peak and emergency situations. The station was commissioned in December 2016 and has been dewatered twice since going into commercial operation, as per routine maintenance schedules.

A schematic layout of the steel lined section of the waterways is shown in Figure 2 below. The steel lined section starts downstream of the upper dam (Bedford) at the Low-Pressure Headrace Tunnels transition reducer (LH12 and LH34) to the Inclined High-Pressure Shafts (IHPS) with inner diameters of (LH12-ST and LH34-ST) of 5.1m. The upper Headrace Surge Riser (SR) originates from the LH with a T-piece at the Surge Riser Junction (LH12-RJ12 and LH34-RJ34). Downstream of the Surge Riser Junction and at the termination of the LPHT, is the High-Pressure Headrace Tunnel (HH12 and HH34) and terminates at the bifurcation (BF). Section HH12-S01 (and HH34-S01) is a section of the HH immediately upstream of the BF which is not encased in concrete. From the bifurcations the four High Pressure Penstocks (PU1, PU2, PU3 and PU4) extends up to the Main Isolation Valve (MIV) at each respective turbine.

The Full Supply Level (FSL), Minimum Operating Level (MOL) and Extreme Operating Level (EOL) of Bedford dam are 1738.6, 1720 and 1740.6 meters above sea level (masl) respectively. The maximum surge level for transient events in the surge riser is set at 1768masl.

The elevation and chainage length (from the LH reducer) for pertinent points along the Waterways is listed in Table 2: Schematic of Steel-lined section of the Waterways, below.

Note that the MIV and spiral casing is positioned downstream of the penstock section PU01.

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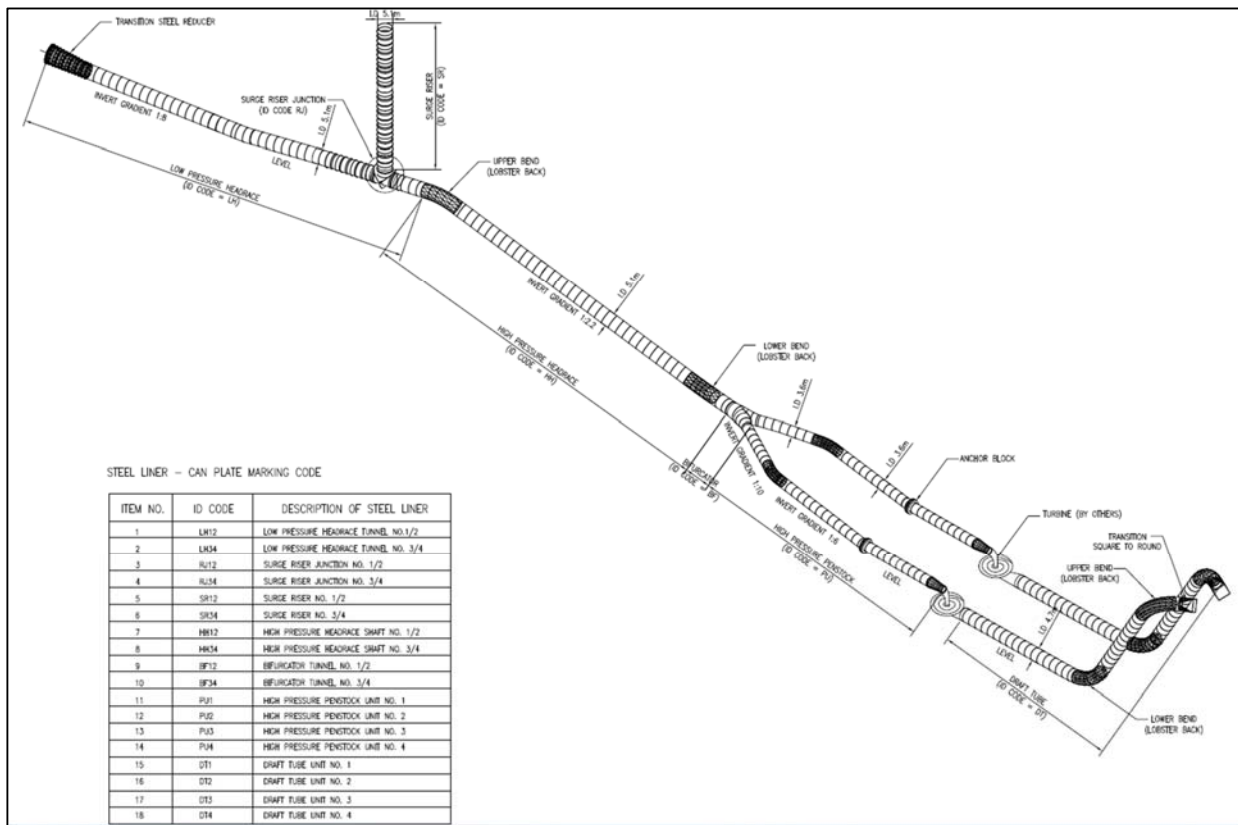


Figure 2: Schematic of Steel-lined section of the Waterways (Drawing WSB-ING-DO-DF-159)

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Table 2. Elevation and chainage length of pertinent points along waterways.

Can Type	ID Point	Elevation (masl)	Chainage (m)
Reducer ST	HH12-ST	1589.5	0
A	HH12-S91	1575.1	114
Bend S91	HH12-S91	1574.6	119
B	HH12-S94	1574.6	148
Junction RJ	HH12-RJ	1574.6	173
Bend S96	HH12-S96	1574.6	190
Bend S80	HH12-S80	1572.3	201
J	HH12-S72	1533.0	291
K	HH12-63	1490.8	393
L	HH12-S55	1448.6	495
M	HH12-S46	1406.4	597
N	HH12-S37	1361.7	705
P	HH12-S29	1319.5	807
Q	HH12-S20	1277.2	909
R	HH12-S11	1232.6	1017
S	HH12-S03	1190.4	1119
Bend S02	HH12-S02	1187.5	1123
S01	HH12-S01	1187.2	1138
BIF	HH12-BIF	1186.7	1143
T	PU1-S09B	1178.3	1205
U	PU1-S08	1177.3	1211
V	PU1-S07	1176.5	1216
PU-S06	PU1-S06	1175.7	1221
W	PU1-S02	1175.7	1255
PU-S01	PU1-S01	1175.7	1266

### 3.3 Palmiet Power Station

Palmiet Pumped Storage Scheme is reached travelling on the N2 over Sir Lowry's Pass towards Grabouw. As you exit the pass, travel for approximately 10 km before you reach a sign-posted Eskom board on your right. Take this turn off and travel along the access road for another 5 km before you reach the Power Station.

The Waterway System at Palmiet PS is steel lined except at the Intake Tower, Surge Shaft and Tailrace. The steel-lined section of the waterways consists of three (3) groups of sections:

- Group 1: High Stressed Sections
- Group 2: Lower Stressed Sections and
- The Bifurcation

The steel-lined section of the waterways is as follows:

- Headrace Tunnel – Can 01 to 104 (Group 2)
- Inclined Shaft – Can 105 to 121 (Group 2)
- Pressure Tunnel – Can 122 to 171 (Group 2)
- Pressure Tunnel – Can 172 to 230 (Group 1)

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- Penstock – Can 231 to 270 (Group 1)
- Bifurcation – Can 271
- Penstock Shaft 1 – Can 272 to 291 (Group 1)
- Penstock Shaft 2 – Can 292 to 309 (Group 1)
- Spiral Casings
- Surge Tank – Can 350 to 355
- Manholes 1 to 4

#### **4. Employer's Requirements for the Service**

##### **4.1 The Contractor's scope of supply**

The scope of supply includes, but is not limited to, the following:

- Make provision for the supply of labour, equipment and materials, parts, supervision and transportation for the completion of the services.
- The *Contractor* submits detailed reports on completion of inspections, and tests for the respective works covered during each service period and also for any service calls that are attended to.
- The *Contractor* provides certification on completion of inspections, servicing, and tests.
- Where applicable the *Contractor* supplies, third-party test certificates for all material used for installation and repairs.
- Material and dimensional certificates are supplied where required.
- The *Contractor* is responsible for the supply of PPE (Personal Protective Equipment) to their own personnel working on site.
- Supply safety file prior to start of the services, allowing for enough time to be reviewed by the *Employer*.

##### **4.2 The Contractor's Scope of Work**

The Works make provision for a Stand-by Emergency Weld repair team, to repair any defects if found during the inspection and NDT of the steel lined section of the Waterways at Drakensberg, Ingula and Palmiet Power Station for a ten-year period from the commencement of the contract.

The *Contractor* notes that Waterway inspections occur as per Table 1 below with last waterway outages being concluded as noted in Table 2.

**Table 1: Waterway Inspection Frequency**

Station	Visual Inspection	Non Destructive Examinations (NDE)		
		High Stressed Sections	Low Stressed Sections	Bifurcation

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Drakensberg PS	10 Years	10 Years	10 Years	10 Years
Ingula PS	7 Years	7 Years	7 Years	7 Years
Palmiet PS	36 months	15 Years	20 Years	8 Years

**Table 2: Completed Waterway Outages (Year)**

Station	Visual Inspection	Non Destructive Examinations (NDE)		
		High Stressed Sections	Low Stressed Sections	Bifurcation
Drakensberg PS (U1/2)	2023	2023	2023	2023
Drakensberg PS (U3/4)	2020	2020	2020	2020
Ingula PS (U1/2)	2025	2025	Visual and NDT was not planned in current outage	2025
Ingula PS (U3/4)	2025	2025	Visual and NDT was not planned in current outage	2025
Palmiet PS (U1/2)	2023	2023	2023	2020

The inspections and repairs are done during a Waterway Outage typically as per the frequency period in Table 1

Typically, the welds and steel lined section of the waterways are in a good condition and is typically recoated (as required) during the outage. A detailed scope will be developed should Emergency Welding Services be required in the waterways.

The *Contractor* therefore makes provision for the following as a minimum:

- The *Contractor* responsible for the welding shall be ISO 3834-2 certified (current) and approved, in terms of the relevant Product/Construction Standards, Welding Processes and required Parent Material Groups, by the *Employer* to perform Level 1 plant welding related work (maintenance, refurbishment and fabrication).
- A qualified and experienced welding team on standby in the event the need arises.
- The weld repair team are to be certified and coded welders.
- The *Contractor* can subcontract other companies to carry out certain services (if required), such as Heat Treatment (HT) and machining, given that these companies are adequately qualified. The *Contractor* will remain responsible for the final product.

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- The *Contractor* shall provide all necessary tools, equipment, resources, consumables and relevant services to complete the *works*.
- In the event of a weld defect/ flaw being detected by NDE and requiring repairs, the *Contractor* will compile a weld design/ repair based on the weld defect/ flaws.
- Welding to include build up / weld repair of fillet and butt welds.
- Where welding services are required, the scope, Method Statements and Quality Control Plans will be submitted for review and acceptance by Eskom, prior to execution.
- Welding to be performed according to qualified Welding Procedure Specification (WPS) and Welding Procedure Qualification Record (WPQR) as per the Standard for Welding Requirements on Eskom Plant (240-106628253).
- The *Contractor* must be able to qualify Welding Procedure Specifications as well as Welders, if necessary, to complete the welding requirements within the stipulated duration.
- All repairs or welds shall be assessed in terms of application, dimensions, weld position, parent material and the requirement for heat treatment to determine the most appropriate repair procedure.
- NDT will be done, by the *Employer's* NDT service provider, on all welds performed by the *Contractor*.
- NDT acceptance criteria will be as per the following:
  - BS EN ISO 5817 Welding Quality Levels for Imperfections – Quality Level B
- All welding documentation will be subject to acceptance by the *Employer*.
- The *Contractor* shall perform Positive Material Identification (PMI) of all base materials prior to welding as well as verify the relevant thicknesses.
- The *Contractor* shall ensure that the correct cutting, profiling and brushing tools (if required), in terms of material, are utilised for the various parent materials to prevent unwanted weld contamination and adverse effects.
- Proper cleaning and degreasing of the identified areas shall be implemented prior to welding.
- The necessary weld preparations and machining of the parent materials shall be implemented, including excavation of defects, removal of weld metal as well as heat affected zones (HAZ) of previous welds.
- The *Contractor* shall perform delayed inspection, for High Strength Low Alloy material (HSLA) and Quenched and Tempered (Q&T) steels, as per (240-106628253).
- Pre-heating and bakeout heat treatment will be required as an additional controlling measure.

#### 4.2.1 Drakensberg Pumped Storage Scheme (DPSS)

The penstock is defined as the steel lined sections of Penstock 1/2 and 3/4 from termination point (as per drawing 048/2941RV2SH1) up to the penstock shafts for Units 1, 2 3 and 4. This includes a total of four manholes as well as two bifurcation.

The estimated total length of weldments for each unit (1 / 2 and 3 / 4) that needs to be inspected by MT and UT are approximately 5200m and 2600m respectively.

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Each penstock consists of 79 cans constructed in shop with each can containing between 1 and 5 strakes. The strakes are either constructed with one or two longitudinal welds and is dependent on the diameter of the can.

#### **4.2.2 Ingula Pumped Storage Scheme (IPSS)**

The estimated total length of each waterway system is approximately 3000m.

The steel and concrete portion of the waterway is approximately 1100m and 1900m respectively per unit.

The steel lined sections of Penstock 1/2 and 3/4 will be inspected by MT and UT. This includes all manholes and two (2) bifurcations.

The estimated of the total length of weldments that needs to be inspected by MT and UT is approximately 1250m per penstock which totals approximately 6000m.

The penstocks consist of a total of 80 cans. Each can was constructed in an offsite workshop and contains between 1 and 5 strakes. Depending on the diameter of the can, the strakes will be constructed with one or two longitudinal welds. The strake-to-strake circumferential welds would also have been done in the offsite workshop, which are of a better quality than site welds.

The steel lined sections of the Low Pressure Headrace, Surge Risers and High Pressure Headrace will have a visual inspection.

#### **4.2.3 Palmiet Pumped Storage Scheme (PPSS)**

The waterway at Palmiet Pump Storage Scheme consists of the following:

- The steel lined section of the waterway is coated with an epoxy coating system of Copon Hotcote DW and Sigmaguard EHB. The steel-lined section consists of the:
  - Headrace Tunnel - 750m long, 6.2m diameter
  - 55 degree Inclined Shaft - 130m long, 6.2m diameter
  - Pressure Tunnel - 487m long, 6.2m diameter
  - Penstock - 561m long, 5.4m diameter
  - 2 x incl. penstock shafts - 131m & 134m long, 3.9m dia.
- Refer to Table 3 for can details. Concrete lined Section
  - 2 x Tailrace Tunnels - 84m and 57m long

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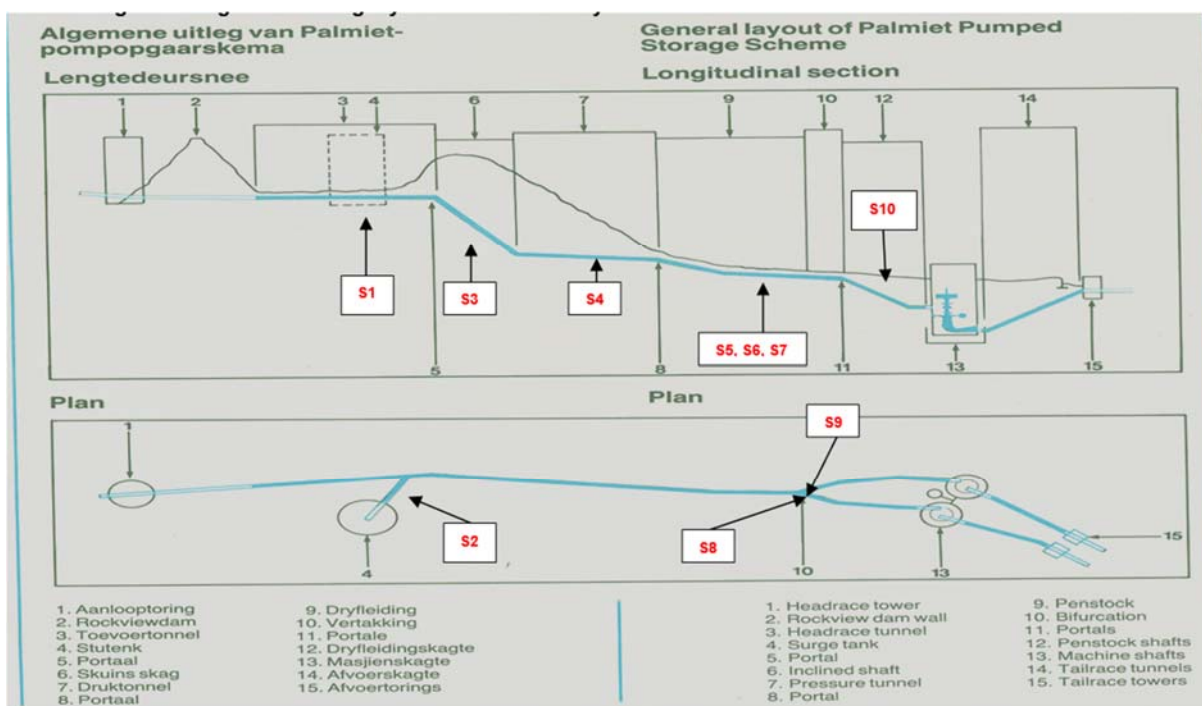


Figure 3 diagram showing layout of the waterway

Table 3:

SECTION	CAN	DESCRIPTION
S1	Cans 1 to 102	Headrace tower to top of incline shaft
S2	Cans 103 and 350 to 353	Surge tank branch pipe and throttle
S3	Cans 104 to 120	Incline shaft incl. upper & lower bends
S4	Cans 122 to 189	Bottom of incline to pressure tunnel
S5	Cans 190 to 231	Pressure tunnel to taper section
S6	Cans 232 to 252	Pressure tunnel to down stream of bend
S7	Cans 253 to 270	Pressure tunnel to the bifurcation
S8	Cans 271	Bifurcation
S9A and 9B	Cans 272 to 274 and 292 to 293	Horizontal section of penstock branches

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S10A and 10B	Cans 275 to 287 and 294 to 305	Incline penstock shafts
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#### 4.2.4 Weldment Repair Technical Specifications

The *Contractor* ensures that the following weldment repair technical specifications are met as a minimum:

- The *Contractor* must comply with ISO 3834-2 – all work performed is on Eskom Level 1 Classified Plant.
- All Welding works are to comply with Welding Requirements on Eskom Plant (240-106628253), BS EN standards and/or ASME standards where required.
- The *Contractor* notes the following plant specifications and ensures all welding services considers the below:
  - Weld Joint Type: Butt
  - Parent metal:
    - Ingula
      - Penstock Steel Liner = S690QL
    - Palmiet
      - Penstock Steel Liner = ROQ TUF AD690
    - Drakensberg
      - Penstock Steel Liner sections
        - ROQ TUF C.550 (ASTM 537 cl.2 MODIFIED)
        - AE 690 (ASTM 517 Gr. M)
        - AD 690 (ASTM 517 Gr. J)
  - Thicknesses of pipe range between 3mm and 70mm.
  - Welding processes limited to Gas Tungsten Arc Welding (GTAW) and Shielded Metal Arc Welding (SMAW).
  - The system design and operating pressure for Drakensberg and Ingula PS is 7.22MPa and for Palmiet PS is 5.39MPa
  - The working medium is water.
  - The pipes are coated with COPON EP 2300.
  - NDT Acceptance level, according to BS EN ISO 5817 Level B.
  - Related to High Strength Low Alloy material (HSLA) and Quenched and Tempered (Q&T) steels, refer to the Eskom Welding Requirements on Eskom Plant (240-106628253), with regards to delayed inspection as well as additional requirements in terms of pre-heating and bakeout heat treatment required.

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The *Contractor* ensures that all welding activities include pre-, interpass- and post heating. Post weld heat treatment (PWHT) is specified if deemed applicable by the *Contractor*. The *Contractor* utilises the appropriate welding consumables suitable for the material of the specified material in this document. The Eskom Standard, 240-106628253: Standard for Welding Requirements on Eskom Plant, is adhered to.

#### 4.2.4.1 Welding Procedure Specifications (WPS)

The *Contractor* submits to the *Employer* for acceptance, a WPS for parent material butt weld procedure covering a qualified thickness range of 3 - 70mm. The WPS must be approved by IWE/IWT. (WPS is in accordance with BS EN ISO15614-1 L2 or ASME IX.)

#### 4.2.4.2 Welding Procedure Qualification Records (WPQR)

The *Contractor* submits to the *Employer* for acceptance, a WPQR for parent material butt weld procedure covering a qualified thickness range of 3 - 70mm. The WPQR must be approved by an AIA as well as IWE/IWT. Welding and testing (destructive and non-destructive) of the test pieces shall be witnessed and approved by an AIA or Notified Body, as per 240-106628253 Standard for Welding Requirements on Eskom Plant. (WPQR is in accordance with BS EN ISO15614-1 L2 or ASME IX). WPQR testing/result reports to be issue to Eskom.

#### 4.2.4.3 Welder Qualification Records (WQRs)

The *Contractor* submits to the *Employer* for acceptance, a valid Welder Qualification Records (WQRs) covering the PQR filler material group and dimensions. WQR is approved by the *Contractor's* responsible welding coordinator. Refer to 240-106628253 Standard for Welding Requirements on Eskom Plant.

#### 4.2.4.4 Deliverables

The *Contractor* will be required to submit a report including but not limited to the following items:

- Overall status and appraisal of the Waterway systems.
- Quantify nature and extent of defects found.
- Baseline of defects for future inspection and monitoring
- Detailed Report of the welding service which includes but is not limited to the type of weld, location, parent material, weld material, weld plug etc.

#### 4.2.5 Constraints on how the *Contractor* provides the Works

##### 4.2.5.1 Quality Management

The *Contractor* is responsible for Quality Control to ensure the performed welding and associated services meet the requirements of the *Employer*. Quality, inspection, testing and documentation requirements include the following:

- No work will be done without a quality control plan (QCP) that is accepted by the *Employer*. A QCP will therefore be submitted to the *Employer*.

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- Each QCP shall contain a space, separate from the individual intervention points, where the names of the nominated quality representative from each party will print their names and sign next to it; this is to aid signature identification.
- Intervention points will be signed as work progresses and no back-dating will be allowed.
- QCP's will make provision for referencing of the relevant documents.
- The following minimum intervention points must be included in each of the weld repair QCP's for the *Employer's* quality control representative:
  - Approval of QCP (H)
  - As-Found Inspection (W)
  - PMI (Positive Material Identification) (H)
  - NDT Procedures and Operators (H)
  - Weld Maps (R)
  - WPS/WPQR (H)
  - Welder Qualifications (H)
  - Welding Consumable Material Certificate (H)
  - Machining (W) (only if applicable to repair)
  - Weld as per WPS (S)
  - PWHT (H) (only if applicable to repair)
  - NDT (H)
  - Final Inspection (H)
  - Final Databook Acceptance (H)

#### 4.2.5.2 Documentation

- All documents supplied by the *Contractor* shall be of good quality and subject to the *Employer's* acceptance.
- The *Contractor* notes that metric sizes, as specified by the International Standards Organization and agreed to by the South African Metrication Boards, are used. International System of Units (SI units) are used on drawings, pamphlets, calculations and documents.
- The *Contractor* shall provide a consolidated databook that will consist of, as a minimum and not limited to, the following:
  - QCP
    - Requirements stipulated as above.
- NDT Procedures and Operator Qualifications
  - The *Employer* will provide the relevant information, as received from the *Employer's* NDT service provider to the *Contractor* for databook consolidation purposes as well as references within the QCP and relevant reports.
- Welding Procedure Specification (WPS) & Welding Procedure Qualification Record (WPQR/PQR)
  - The *Contractor* will provide, as per Section 4.2.4, a qualified WPS supported by a valid WPQR/PQR approved (signed) by the *Contractor's* registered IWE or IWT as

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well as the independent AIA or notified body (examiner) who witnessed the welding and testing of the test pieces. WPQR testing/result reports to be issue to Eskom.

- Welder Qualifications
  - The *Contractor* will provide, as per Section 4.2.4, valid Welder Qualifications (Welder Approval Certificates) approved by the *Contractor's* IWE/IWT as well as the Authorized Inspection Authority (AIA) who witnessed the welding and testing of the test pieces.
- PMI Report
  - The *Contractor* will provide PMI reports, obtained from a calibrated X-Ray Fluorescence (XRF) meter, to verify the material grade of each weld repair, prior to welding.
- Weld Map
  - A weld map will be provided by the *Contractor*, clearly indicating welded areas with allocated weld numbers for traceability purposes.
- NDT Reports
  - NDT reports as received from the *Employer's* NDT service provider will be reviewed by the *Contractor* to ensure accuracy and traceability. The weld numbers, as per the weld maps, must be referenced on NDT reports.
- Welding Consumable Certificates
  - 3.1 Material Certificates will be provided by the *Contractor*.
- Heat Treatment
  - Heat Treatment Procedures, Record Graphs and Calibration Certificates.

#### 4.2.5.3 Access

- The *Employer* will provide access to the *Works* to enable execution of the *works*. Where required, scaffolding will be constructed in the penstock to enable repair to the Waterways.
- Access into the penstocks will be via the 750mm Ø manholes.
- The *Contractor* notes that the working space may be restricted and/ or in a confined space.
- General access to the power station complex is controlled and it is mandatory that the *Contractor* adheres to all security regulations in force at all times.

## 5. Management strategy and start up.

### 5.1 The *Contractor's* plan for the service

The *Contractor* shall provide, at the time of service, a detailed service schedule (in Gantt format) outlining the objective as stated in the scope of work.

A financial cash flow projection shall be attached to the plan indicating the intended invoicing dates and amounts as for the entire contract period.

The availability of materials intended for use, including the approval timeframe thereof, shall also be indicated on the plan.

Meetings shall be indicated on the plan as stipulated in Section 5.2.

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## 5.2 Management meetings

Meetings shall be held to mutually promote and to pro-actively and jointly manage the administration of the contract with the objective of minimising the adverse effects of risks and surprises for both Parties.

The following will be discussed (amongst others): Safety, compensation events, subcontracting, overall co-ordination and other matters of a general nature. Separate meetings for specialist activities such as planning and activities of a technical nature will also be discussed as indicated below.

Meetings of a specialist nature may be convened as specified elsewhere in this Service Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the *service*. Records of these meetings shall be submitted to the *Service Manager* by the person convening the meeting within five days of the meeting.

All meetings shall be recorded using minutes or a register prepared and circulated by the person who convened the meeting. Such minutes or register shall not be used for the purpose of confirming actions or instructions under the contract as these shall be done separately by the person identified in the *conditions of contract* to carry out such actions or instructions.

## 5.3 Contractor's Management, Supervision and Key People

A detailed service organogram of the Company's Branch, indicating specifically Operating officers, financial officers, Communication / liaison personnel and technical staff intended for this contract are required as a tender returnable and are to be kept updated during the entire duration of the contract. Changes in the structure must be communicated to the *Service Manager* immediately of it coming into effect.

The Organogram shall include current contact details and emergency response (24-hour) information.

## 5.4 Management of work done by task order

- a) All work is managed through a Task Order.
- b) The process for placing a Task Order is:
  - A Task Order Request is issued by the *Service Manager* to the *Contractor*
  - The *Contractor* prepares and submits a Task Order quote to the *Service Manager*
  - The *Service Manager* assesses the Task Order quote for acceptability and conduct clarification with the *Contractor* if required
  - The *Service Manager* accepts the Task Order quote by issuing the Task Order and PO to the *Contractor*

## 5.5 Documentation control

All documentation requires a unique, sequential number and all deviations contained therein clearly described. Contractual communications will be in the form of properly compiled letters or forms attached to e-mails and not as a message in the e-mail itself.

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The *Service Manager* or the *Delegated Person* shall in all instances be the point of communication (addressee) and no direct communication between persons involved in the contract shall be allowed. Such communication shall be disregarded.

#### 5.5.1 General

Each instruction, certificate, submission, proposal, record, acceptance, notification and reply is communicated in a form which can be read, copied and recorded and in the language of the Contract, within the period for reply or any other period agreed between the parties prior to its due date. Any such communiqué must bear the signature of the author; emails therefore do not conform except when used as a transmittal medium.

#### 5.5.2 Minimum requirements

All documents shall be in simple and clear English; and always reference to applicable NEC TSC3 clause under (or as a result of) which it is communicated.

#### 5.5.3 Use of standard forms

The *Service Manager* and the *Contractor* will use the standard NEC3 TSC.

#### 5.5.4 Communication

All Communication is addressed to the *Service Manager* as applicable to the TSC. All communication makes reference to:

- The Contract Number that is issued by the *Employer* (normally a 46000.....)
- The Contract title.
- Any previous reference relating to the specific communiqué
- The Specific TSC clause under which the communication is issued;
- Whether a reply is required and
- A unique letter reference number.

The unique reference number to be used for written correspondence between the *Service Manager* and *Contractor* and vice versa is as follows:

From the *Service Manager* to the *Contractor*: 46000 .. ... E/C 0xxx; and from the *Contractor* to the *Service Manager* 46000 C/E 0xxx referring to the Contract number and the next sequential letter (channel) number

### 6. Invoicing and payment

All Invoices submitted for payment shall make reference to the pricing schedule's alpha-numeric order and description (may be shortened). Please revert to 2.5 regarding financial reporting.

Within one week of receiving a payment certificate from the *Service Manager* in terms of core clause 51.1, the *Contractor* provides the *Employer* with a tax invoice showing the amount due for payment equal to that stated in the *Service Manager's* payment certificate.

- a) The *Services Manager* to be copied in on all electronic invoices emailed.
- b) Failure to submit the invoice to the correct address could result in delays in payment.

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- c) The *Contractor's* Tax Invoices comply with the requirements as stated in clause Z7 of the Contract Data
- d) Invoices are submitted electronically to:
  - Local Eskom Invoices - [invoiceseskomlocal@eskom.co.za](mailto:invoiceseskomlocal@eskom.co.za)
- e) Details required when submitting invoices and additional data:
  - The subject line on your email should only contain your vendor number
  - Each invoice in PDF should be named with your invoice number only
  - All electronic invoices are be sent in PDF format only
  - Attach the proof of delivery to your invoice
  - Where applicable, supporting documents are be attached to the scanned PDF invoice as one attachment
  - A copy of the signed assessment certificate
  - Any other appropriate documents,
  - Other requirements:
  - Ensure compliance with the tax requirements for submitting invoices electronically
  - Each PDF should contain one credit note, one debit note or one credit note only. More than one invoice can be submitted per email
  - Any CPA applicable are be invoiced separately, so that if there are issues on the CPA, the rest of the invoices can be paid while the CPA issues are resolved
- f) Include the following information on the Invoice:
  - Name and address of the *Contractor* and the Service Manager;
  - The contract number and title;
  - *Contractor's* VAT registration number;
  - The *Employer's* VAT registration number 4740101508;
  - Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT;
  - *Contractor's* company registration number if applicable
  - *Contractor's* banking details
  - Name and address of recipient
  - Tax invoice number and date of issue,
  - Description of goods/service provided,
  - Quantity or volume of goods/services
  - Period time for which the Tax Invoice is being rendered,
  - Relevant Task Order Number (commencing with a 45 prefix),
  - Relevant line item number,
  - Statement whether value added tax is included or excluded.

## 6.1 Contract change management

The use of Standard forms is encouraged and is obtainable from the *Service Manager* for instances like compensation events Contract change management is managed in accordance with clause 6 of the core clauses in TSC3.

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## 6.2 Records of defined cost to be kept by the *Contractor*

In order to substantiate the *Defined Cost* of compensation events, the *Employer* requires that the *Contractor* to keep the following,

- Record of Labour charges
- Record of material charges
- Record of Equipment Charges

These records need to be available on an excel spreadsheet in case of a compensation event is agreed on.

## 6.3 Insurance provided by the *Employer*

Queries regarding insurance claims and/or procedures can be addressed with the *Service Manager*.

## 7. Training workshops and technology transfer

Not Applicable

## 8. Design and supply of equipment

The scope of the work is described in this specification. No alteration to- or on equipment is allowed without the written consent of the *Service Manager*.

## 9. Things provided at the end of the service period for the *Employer's* use

Not Applicable

### 9.1 Equipment

None

### 9.2 Information and other things

The *Contractor* hands over the file with service records.

This file shall contain all contract data including, but not limited to, all communication, instructions, compensation events, disputes, warnings, certificates, reports and health & safety instructions.

## 10. Health and Safety Risk Management

The *Contractor* complies with the South African Occupational Health and Safety Act No. 85 of 1993 and regulations, Eskom Safety, Health, Environment and Quality (SHEQ) Policy 32-727, National Building Regulations as well as SANS 10400 for all works. Furthermore, the *Contractor* comply with any additional current statutory requirements of any relevant Government Departments regarding health and safety and environmental health.

The *Contractor* notes the following:

- The *Service Manager* instruct the *Contractor* to stop work, without penalty to the *Employer*, when the *Contractor's* personnel do not adhere to acceptable health & safety standards or

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contravene the health and safety sections and regulations. The *Service Manager* is immediately or before the end of a particular shift, informed of any injury or damage to property or equipment. The *Contractor* provides all the required safety and personal protective equipment to his staff for the duration of the contract.

- Site SHE Specification, procedures, policies, guidelines, and standards applicable to the service, used as Eskom's minimum requirements for Health and Safety, are provided to the *Contractor*.
- The *Contractor* complies with the requirements for COVID-19 as per Government Directive from Department of Employment and Labour (DEL); Consolidate COVID-19 Direction on Health and Safety Measures in Workplaces issued by the Minister in terms of Regulation 4(10) of the National Disaster Regulation.
- Only the latest version / revision of the applicable legislation, acts and regulations throughout the duration of the contract, is applied at the Peaking stations. Not limited to the following below, the legislation, acts and regulations that the *Contractor* complies with are:
  - Compensation for Occupational Injuries and Diseases Act 130 of 1993
  - National Water Act 36 of 1998
  - Occupational Health and Safety Act and Regulations (85 of 1993)
  - Disaster Management Act 57 of 2002.
  - National Environmental Management Act 107 of 1998
  - Applicable South African National Standards (SANS)
  - National Road Traffic Act 93 of 1996
  - Basic Conditions of Employment Act 75 of 1997
  - National Veld and Forest Fire Act and Regulations 101 of 1998
  - Environmental Conservation Act and Regulations 73 of 1989
  - Committee of Land Transport Officials (COLTO)
  - SACPCMP Act no. 48 of 2000
  - Radiation Protection Act
  - Construction Regulation

The *Contractor* establish and adheres to the health and safety of his own employees and those of its sub-*Contractors* so that high standards of personnel health and safety are achieved and maintained. The *Contractor* exercise and adheres to all necessary care and measures to preclude exposure of personnel, labour, and nearby residents (if any) to potential health hazards and environmental pollutants.

The *Contractor* ensures that all persons who are employed and or deployed to work on site undergo police clearance and are certified to have no criminal records. This is required before any of the *Contractor's* employees are allowed or given access to start work on site.

## 10.1 Suspension of works and services under a contract

Any person may stop an activity, unsafe act or unsafe condition that poses or may pose a threat to the health and safety of an individual or create a risk of degradation of the environment. This includes any unauthorised work or service performed by or legally or contractually non-compliant acts or omissions by a supplier or such supplier's sub*Contractor* or supplier.

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Work stoppages that are initiated due to SHE concerns, non-compliance or poor performance related to the supplier's works or services, shall not warrant any financial compensation claim lodged against Eskom where the supplier has not met the requirements defined legally or contractually.

Work stoppages will be classified in accordance with the following and the applicable Eskom Work Stoppages shall be adhered to:

- Temporary stoppage of activity(s)/task(s) due to SHE concerns, including the following circumstances:
  - Ad hoc work stoppages by Eskom management –at the discretion of the Eskom senior management, all work of a similar nature may be stopped due to the occurrence of a fatal or serious incident, and the applicable suppliers will be required to comply with and/or verify the conditions stipulated in the work stoppage instruction pack.
- Stoppage /suspension/termination of contract:
  - The contract custodian as defined in the Eskom contract with the main supplier will be the authorised person to communicate the stoppage/suspension / termination of the contract after seeking advice from Eskom's Legal Department and approval from the Business Unit Management.

In addition to the requirements of the laws governing health and safety, Eskom may have some additional requirements particular to the *service* and the Affected Property for this contract.

## 10.2 Health, Safety and the Environment

The *Contractor* undertakes to take all reasonable precautions to maintain the health and safety of persons in and about the execution of the *service*. Without limitation the *Contractor*:

- Accepts that the *Employer* may appoint him as the "Principal *Contractor*" (as defined and provided for under the Construction Regulations 2003 (promulgated under the Occupational Health & Safety Act 85 of 1993) ("the Construction Regulations") for the Affected Property;
- Warrants that the total of the Prices as at the Contract Date includes a sufficient amount for proper compliance with the Construction Regulations, all applicable health & safety laws and regulations and the health and safety rules, guidelines and procedures provided for in this contract and generally for the proper maintenance of health & safety in and about the execution of the service; and
- Undertakes, in and about the execution of the service, to comply with the Construction Regulations and with all applicable health & safety laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his Sub*Contractors*, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.
- The *Contractor* shall comply with the health and safety requirements.

## 10.3 Health, safety and the environment File submission

The *Contractor* is expected to ensure that adequate time is allocated for the approval of their Safety, Health and Environmental (SHE) File. This compulsory document must be prepared before an appointment with the Health & Safety Officer is made. The Health & Safety Officer will, upon receipt of this document, and after ten working days, approve or reject the submission. No work shall start before the approval of the Health, Safety & Environmental File. The SHE file is submitted to the

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*Services Manager* for review and acceptance, 60 days before the commencement of the *service* on site and includes, but are not limited to the following:

- Safety, Health and Environmental Plan (SHE Plan)
- SHE organization within the Company-Responsibility & Accountability
- OHS Incident management Procedure (32-95)
- Planning of conduct of work activities including planning for changes and emergency work (Operational Plan)
- Management of PPE - Personal Protective Equipment (Procedure with the matrix)
- Emergency planning and fire risk management
- Vehicle and driver behaviour safety (Competency, Traffic Management, etc.)
- Sub-*Contractor* or supplier selection and management
- Key personnel competency, training, appointments
- Communication and awareness Plan
- Behavioural Based Safety Procedure
- *Employer's* Baseline SHE Risk Assessment (BRA).
- *Contractor's* Baseline Risk Assessment in line with the *Employer's* BRA (Identification, assessment and management of Safety, Health and Environmental risks related to the scope of work. The methodology used for the risk assessment is provided together with the BRA.)
- Valid Letter of Good Standing (COIDA or equivalent)
- SHE policy signed by CEO / MD - Complying to OHS Act Section 7 or ISO 45001
- Occupational hygiene and health risk assessment
- Medical surveillance
- Method Statements / Safe Working Procedures

Only after the **SHE file** met all the requirements and are approved by the OHS department the *Employer's representative* will arrange with the OHS department for the *Contractor's* employees to attend Induction. The *Contractor's* personnel attend an induction meeting on site and sign the attendance register provided.

*Contractor* will not be allowed to participate in any Eskom Plant activities before Induction was attended.

In addition, reference is made to Health and Safety Specification, for documents and policies which the *Contractor* is required to adhere to.

The *Contractor* is responsible for the safety and security of his/her personnel, equipment on site and the *Service*.

The *Contractor* applies safety awareness through continuous training of its workforce and Sub-*Contractors*.

The *Contractor* is responsible for the safety and security of the materials (on site) required for the *Service*.

The *Contractor* adheres to the safety regulations pertaining to the power station.

The *Contractor* adheres to the safety regulations pertaining to working at height where training certificates to work at heights are mandatory.

The *Employer's* Safety Risk Management Directive for *Contractors* is provided to the *Contractor*.

The *Contractor* shall ensure that its Employees are provided with adequate PPE with clearly identifying motifs for the site *Service* they may provide and are in accordance with the requirements

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of General Safety Regulation 2(1) of OHSA and further ensure that its Employees wear the PPE issued to them at all relevant times.

Medical fitness and Working at heights/elevated positions certificates are required before commencing work. The *Contractor* ensures that all persons who work at height and those who are required to do rescue at height are trained according to the relevant unit standards. As a minimum, individuals who work at height and are not responsible for performing a rescue must undergo three days of FAS training (Unit Standard 229998), and the rescuers must furthermore undergo two days of rescue training in accordance with unit standard 229995. Rescuers are to be appointed in writing for that particular site/project.

The *Contractor* may identify further training (e.g. Advanced rescue US229999) applicable to the scope of work, and ensure that their employees are trained.

Only training providers that use competent training instructors and assessors who are SETA-accredited and SAQA-registered in terms of the relevant unit standards may be used.

Regarding Work in heights/elevated position the *Contractor* ensure that its Employees work in accordance with the requirements of General Safety Regulation 6 of OHSA

The *Contractor* shall ensure that all the plant, machinery, equipment it may wish to utilise on site is/are at all times of sound order and fit for the purpose for which it is intended, and that it complies with the requirements of General Safety Regulation 10 of OHSA

The *Contractor* complies with Eskom's transport requirements while performing contract work for Eskom.

Without prejudice to any other requirements of this *Service* Information or the Conditions of Contract, the *Contractor* complies with the following:

Eskom Life-saving Rules Directive 240-62196227

All equipment can be tested on site, but if equipment is to be taken out of the Power station Boundaries, then the insurance for and responsibility of the items will be borne by the *Contractor*. Preliminary and general expenses must be accounted for separately and will apply to the testing of all of the items listed. A reduction in scope will not affect the aforementioned tariff.

Minimum Safety Constraints:

- -Competencies (training)
- -Risk Assessment
- -Letter of Good Standing
- -Valid accreditation certificate issued by the accreditation authority
- -Proof of accreditation
- -Medical Certificates or procedure for such implementation

Five Life Saving Rules have been developed that will apply to all Eskom employees, agents, consultants and *Contractors*.

- Rule 1: Open, Isolate, Test, Earth, Bond, And/Or Insulate before touch - that is any plant operating above 1000 V.
- Rule 2: Hook up at heights - no person may work at height where there is a risk of falling.
- Rule 3: Buckle up – no person may drive any vehicle Eskom premises: unless the driver and all passengers are wearing seat belts. Eskom takes a "ZERO TOLERANCE" attitude to drivers and passengers who do not wear safety belts when driving in any vehicle on Eskom

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Business and/or on Eskom premises. The violation of this very important safety rule as well as any safety rule while performing work for or on behalf of Eskom may result in Eskom terminating your obligation to perform work in terms of your contract with Eskom. All occupants must wear their safety belts properly, and must never put the shoulder belt under their arm or behind their backs. Drivers and all passengers must buckle-up at all times for the sake of themselves and their families.

- Rule 4: Be sober (no person is allowed to work under the influence of drugs and alcohol.
- Rule 5: Use a permit to work – where an authorization limitations exists, no person shall work without the required permit to work.
- Rule 6: Ensure Safe Live Working

### 10.3.1 Plant Safety Regulations

The *Contractor* requests the *Employer's Representative* to arrange the isolation of the plant from all sources of danger as described in the Plant Safety Regulations.

The *Employer* shall, on request, make available a copy of the latest revision of the Plant Safety Regulations to the *Contractor* when it is a requirement for the *Contractor* to be trained and authorised in terms of the PSR.

The *Contractor* shall conform to all rules and regulations applicable to Plant Safety and shall complete the Workman's Register prior to working on the plant.

### 10.3.2 Fire Precautions

Any tampering with the *Employer's* fire equipment is strictly forbidden.

All exit doors, fire escape routes, walkways, stairways and stair landings and access to electrical distribution boards must be kept free of obstruction and is not be used for work or storage at any time. Firefighting equipment must remain accessible at all times.

In case of fire, report the location and extent of the fire to the control room.

It is expected that the *Contractor* take the necessary action to safeguard the area in order to prevent injury and spreading of the fire.

### 10.3.3 Reporting of Accidents

The *Employer* follows an accident prevention policy which includes the investigation of all accidents involving personnel and property. This is done with the intention of introducing control measures to prevent a recurrence of the same incident. The *Contractor* is expected to co-operate fully to achieve this objective. The *Service Manager* must be informed immediately of any Category B or C incidents. Category A incidents and any damage to property or equipment must be reported to the *Service Manager* within 24-hours.

**NOTE:** This report does not relieve the *Contractor* of his legal obligation to report incidents to the Department of Labour, or to keep records in terms of the Occupational Health and Safety Act, and Compensation for Occupational Injuries and Diseases Act.

### 10.3.4 Speed Limit

All vehicles must be driven with due consideration for personnel and property. Maximum speed limit will be always adhered to on the premises.

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### 10.3.5 Health and Safety Arrangements

- The *Contractor* must ensure that all his personnel attend a Health and Safety Induction Course prior to starting with the *Service*. A one- (1) hour course will be provided by the *Employer* and will be valid for the duration of one- (1) year.
- Safety Risk Management has the right and authority to visit and inspect the *Contractor's* workplace or site establishment to ensure that tools, machinery and equipment comply with the minimum safety requirements.
- The *Employer's Representative* are entitled to instruct the *Contractor* to stop work, without penalty to the *Employer* where the *Contractor's* personnel fail to conform to safety standards or contravene health and safety regulations.

### 10.3.6 Transportation of passengers: open LDV's

With effect from 31 May 2006 no *Eskom employee* or *Contractor* would be allowed to transport passengers on the back of open light delivery vehicles (LDV's). It is a legal requirement to provide safe transportation of *Eskom* and *Contractor* employees – therefore the following will be enforced:

- Ensure that no employee, including *Contractor* employees or any other person, when on an Eskom site and/or performing work for Eskom, is allowed to be transported in the back of open vehicles.
- There will be cases where this may not be reasonable or practicable, namely where vehicles are used during line inspections on sites or on private roads, or similar cases, and in these cases such vehicles must be driven at less than 30km per hour or at a speed suitable to the prevalent conditions. In such cases, the carrying of passengers in the back of such open vehicles could be explicitly allowed, after:
  - a risk assessment has been carried out, indicating a very low risk;
  - mitigating factors have been identified to control any risk identified;
  - proper seating and handrails have been provided on the back of the open vehicle;
  - these measures have been discussed at the relevant Health and Safety Committee Meeting and approved by the *Employer*.
- is defined and contained in a formal written division's or BU's policy, including the appropriate mitigating factors;
- such a policy has been communicated to all employees and *Contractors*.
- The above risk assessment findings/outcomes must be available at all times for audit purposes.
- Tools and equipment must be properly secured.
- Only authorised drivers may transport passengers.
- Proof must be submitted on request in terms of valid roadworthiness of the vehicle/s.
- The above must apply to on site and off site transportation of passengers.

No person may be transported in the back of vehicles closed by means of canopies, unless provided with factory-fitted or manufactured-approved, proper seating and safety belts, i.e. crew cabs.

The driver must ensure that no employees are transported in the back of open vehicles unless it is allowed in terms of a divisional or BU-specific policy as referred to in paragraph f). This also applies to *Contractor* and *Contractor* employees when performing work for Eskom.

The driver must ensure that all canopies are being properly fitted and secured and that all loose tools and objects in vehicles are properly secured.

The driver must ensure that their passengers are seated and wear seatbelts at all times.

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## 10.4 Environmental constraints and management

The *Contractor*, in and about the execution of the *service*, complies with all applicable environmental laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his *SubContractors*, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.

### 10.4.1 Environmental Standard

#### 10.4.1.1 Legislation

The *Contractor* complies with all environmental legislation of South Africa in respect of controlling air pollution, water pollution and waste disposal, etc.

#### 10.4.1.2 Green Practices

The *Contractor* must carry out good environmental practices in carrying out the works for conserving the global & local environment. Such practices shall include but not be limited to the replacing all chemical based cleaning agents by other natural/organic alternatives when such chemicals is provided by the *Contractor*.

During sweeping and dusting, the *Contractor* shall ensure that a minimum amount of dust is liberated into the atmosphere. The use of compressed air for cleaning is prohibited.

#### 10.4.1.3 Waste Management

Domestic – all bins must be replenished with plastic disposable bags and when full moved to the designated waste areas within each area of the works.

No waste material must be accumulated or stored anywhere other than in the designated area.

## 11. Functional Requirements

- The *Contractor* submits a complete condition assessment report of the welding service required and executed.
- The *Contractor* is to be certified (in terms of the South African Occupational Health and Safety Act of 1993 and Construction Regulations 2014), and has the necessary skills to carryout the *works*.
- The *Contractor* provides detailed procedures that are to be employed, describing step by step how the *Contractor* performs the *works*.
- The *Contractor* provides an organogram, specific to this particular supply, detailing all the positions and individuals responsible for technical expertise and logistic support. Curriculum Vitaes of all key personnel.
- A professionally registered person is required to compile and review the final inspection report.

### 11.1 Quality assurance requirements

The quality requirements are as per ISO 9001:2008 and as per Eskom document 240-105658000, SUPPLIER CONTRACT QUALITY REQUIREMENTS SPECIFICATION.

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The *Contractor's* company quality documents are subject for verification and acceptance by Eskom.

## 12. Procurement

### 12.1 People

#### 12.1.1 Minimum requirements of people employed

Requirements as set out in 3.1 shall be adhered to. In addition, training conducted for key personnel in terms of the Skills Development Act of 1999 and that assurance that all training conducted has been done through, or has been governed by, the SETA.

A curriculum Vitae of each person shall be submitted at the time of tender and if and when personnel changes occur. This shall be noted in the compulsory organogram and updated.

Staff shall be classified as per SANS 10147 (D4) et al.

Foreign employees to have valid work permits.

#### 12.1.2 BBBEE and preferencing scheme

With confirmation of its B-BBEE Status by submitting an updated Verification Certificate by no later than 30 (thirty)

*Contractor* to ensure the *Service Manager* has an updated valid certified copy of BBBEE certificate or sworn affidavit during contract period. Failure to do so, could result in Eskom Vendor Management Department blocking vendor details on Eskom vendor management system which affects payment processing of invoices.

##### 12.1.2.1 Supplier Development and Localisation

Not Applicable

### 12.2 Subcontracting

#### 12.2.1 Preferred subContractors

No Nominated SubContractors.

#### 12.2.2 Limitations on subcontracting

The *Contractor* shall not sub-contract more than 20% of the work. This will not apply to any documentational work at/during tender stage.

#### 12.2.3 Attendance on subContractors

State entry and attendance requirements, adherence and constraints are the same as for the *Contractor*.

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## **12.3 Plant and materials**

### **12.3.1 Specifications**

None

### **12.3.2 Correction of defects**

All defects identified to be corrected immediately or if not possible, the *Contractor* notifies the *Service Manager*.

### **12.3.3 Contractor's procurement of Plant and Materials**

The *Contractor* provides the *Employer's representative* with a quotation with the agreed markup percentage for all materials, parts and spares required to perform repairs. The *Contractor* attaches the Vendor's invoice or proof of purchase together with the *Contractor's* quotation as supporting evidence. The warranties from suppliers are to be in favour of the *Employer* and not just the *Contractor*.

### **12.3.4 Tests and inspections before delivery**

Where applicable, material, dimensional, material safety data sheets (MSDS) and pressure test certificates are required for parts and equipment supplied or for any refurbishments/reconditioning conducted by the *Contractor*.

The *Service Manager* may request to inspect Plant and Materials together with the *Contractor* on arrival before use on site and from time to time during execution. The *Contractor* keeps records of such inspections and the records be available for *Service Manager* on request. Findings from these inspections will be tracked in the monthly meetings.

### **12.3.5 Plant & Materials provided "free issue" by the Employer**

None

### **12.3.6 Cataloguing requirements by the Contractor**

None

## **13. Working on the affected property**

### **13.1 Working on the affected property**

Drakensberg, Ingula and Palmiet Power Stations are National Key Points. All persons intending to perform work and/or attend meetings during this contract period comply with the following:

- The *Contractor* adheres to all Life Saving Rules as specified. The *Employer* does not permit any passengers to be transported at the back of any Truck, light domestic vehicle or enclosed light commercial vehicle. Each person shall sign the site entrance register and

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this information shall also be collated by the *Contractor* for use during the scheduled meetings. All *Contractor* personnel are in possession of Security clearance. Verification records are submitted as part of the safety file together with ID copies. The *Employer* reserves the right to refuse entry to all persons with criminal records.

- Original Identity document (ID) or passport is presented to Security on arrival
- No weapons may be taken on site
- No drugs allowed on site
- No explosives allowed on site
- No firearms and ammunition allowed on site
- No photographs may be taken whilst on site
- All persons entering the *Employer's* premises undergo a breathalyser test. Any persons testing positive is not allowed entry. The *Employer* has a zero tolerance towards alcohol.
- Tool registers is verified on arrival by security personnel
- Only reverse parking is allowed on site
- General access to the station is controlled and it is mandatory that the *Contractor* adheres to all security regulation in force during the period of the contract.
- The *Contractor* is required to submit proof of verification record(s) (Security clearance) from SAPS or accredited supplier linked to SAPS AFIS system not older than thirty (30) days before access to site is granted.
- The *Contractor* is required to submit the SAPS Clearance Certificates obtained for all his employees along with copies of their Identity Documents to the site Security Manager for verification. Only individuals with clear criminal records will be considered.

### 13.2 People restrictions, hours of work, conduct and records

**ESKOM does not permit any passengers to be transported at the back of any Truck, light domestic vehicle or enclosed light commercial vehicle.**

All Life Saving rules as specified shall be adhered to.

In normal circumstances, the premises may be entered from 07:30 to 16:45 Mon-Thu, excluding public Holidays and from 07:30 to 12:30 on Fridays. During outages, these times could differ but averaging from 07:00 to 17:30. Each person shall sign the site entrance Register and this information shall also be collated by the Contractor for use during the scheduled meetings.

Parking is allowed in the demarcated areas only and should it be required to drive on site, then please adhere to the following:

- Maximum speed is 20km/h
- Obey all road signs
- Only Diesel powered vehicles are allowed underground.

Any Damage to ESKOM's plant/ property will be for the *Contractor's* account.

### 13.3 Health and safety facilities on the affected property

All *Contractor* employees and intended sub-*Contractors* must attend a compulsory induction meeting at the start of the Contract period.

The required Health & Safety files, complete with all of the requirements thereto, must be submitted, completed and approved before the start of the contract period.

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#### 13.4 Environmental controls, fauna & flora

The *Contractor's* attention is drawn to the fact that the *Employer's* Power Stations are situated in highly sensitive areas with respect to the environment.

The *Contractor* acquaints himself with all statutory and local environment regulations and adheres to these without exception.

The *Contractor* complies with the Hazardous Chemical Regulations, GNR. 1179 of 25 August 1995 as amended by GNR.930 of 25 June 2003 and GNR.683 of June 2008 when using any hazardous chemicals, as well as complying with the requirements of the National Environmental Management Act of 1988.

The *Contractor* will be required to ensure that all *Services* are carried out as per the ISO 14001 standard and Eskom's Environmental Policy. The following environmental requirements are complied with at all times:

- Zero liquid effluent discharge.
- No chemicals will be dumped into the station drains or on the premises.
- No oil or waste will be dumped in an unauthorised area or unlicensed waste site.
- Asbestos will be handled and stored according to Act 15 of 1973 (hazardous substances Act).
- No materials or waste will be burnt on site. Hazardous substances shall be handled and stored according to the hazardous substances Act no 15 of 1973. No effluent shall be discharged into the public streams.
- Construction Safety, Health, and Environmental Management Rev. 0 32-136

##### 13.4.1 Waste Disposal

All waste introduced to and/or produced on the *Employer's* premises by the *Contractor* for this contract, must be handled in accordance with the minimum requirements for the Handling and Disposal of Hazardous Waste in terms of Government Legislation as proclaimed by the Department of Water Affairs and Forestry Act, 1994 Ref: ISBN0621-16296-5.

##### 13.4.2 Hazardous substances

If product is classified as a hazardous substance, safety brochures must accompany delivery. In accordance with the Occupational Health and Safety Act (OHSA), Act 85 of 1993 section 10 and 11. If any hazard is identified by the *Contractor*, he must immediately inform the *Employer*.

#### 13.5 Cooperating with and obtaining acceptance of Others

The *Contractor* co-operates with and does not delay, impede or otherwise impair the service of Others.

#### 13.6 Records of *Contractor's* equipment

The *Contractor* shall, before entering the site for the first time, provide a comprehensive list of all equipment and tools intended for use during the contract period, to the *Service Manager*. Access will be postponed until such time as the inventory is approved and available at each site visit.

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Material intended for use shall be approved beforehand as stipulated. The exact amounts consumed during a particular service visit must be declared and reconciled in order to reflect on the quarterly report.

### 13.7 Equipment provided by the *Employer*

None

### 13.8 Site services and facilities

#### 13.8.1 Provided by the *Employer*

The *Service Manager* shall make available to the *Contractor*, or their representatives, the following facilities during the contract period:

- Toilets and ablution facilities.
- Eating amenities in the Powerhouse.
- First-aid in the Powerhouse building.

The *Contractor* shall provide everything else necessary for providing the Service.

#### 13.8.2 Provided by the *Contractor*

The *Contractor* makes provision for all required site services and facilities.

### 13.9 Control of noise, dust, water and waste

The control of noise, dust, water and waste shall be as expressed in the environmental requirements for site.

### 13.10 Hook ups to existing works

As far as practicable, all work will be conducted at ground level. Should any hook-ups be required for specific work, please consult with the *Service Manager*.

### 13.11 Tests and inspections

#### 13.11.1 Description of tests and inspections

Inspections will be carried out by the Health & Safety Officer, the Environmental officer and the *Service Manager* periodically. This information will be shared during the quarterly meetings.

Inspections carried out by the *Contractor*, specifically those intended for the prevention of harbouring areas, must be recorded and recommendations communicated with the *Service Manager* as soon as it becomes apparent.

#### 13.11.2 Materials facilities and samples for tests and inspections

None

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