

THE DESIGN, PROCUREMENT, MANUFACTURE, CONSTRUCTION, INSTALLATION, TESTING, COMMISSIONING OF THE 400/132KV GAS INSULATED SUBSTATION (GIS) AT WESKUSFLEUR SUBSTATION AND DECOMMISSIONING OF KOEBERG 400/132KV SUBSTATION.

## PART 3: SCOPE OF WORK

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## C3.1: *EMPLOYER'S WORKS INFORMATION*

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# 1 Background

Eskom Transmission's current installed base of Protection, Telecommunications, Metering, (tele)Control and associated equipment (PTM&C equipment) has typically been procured through a 2-stage procurement mechanism:

- Development contract, where a supplier will develop a product to meet Eskom's requirements and the product undergoes substantial acceptance testing before being accepted by Eskom. This may run for periods of up to 2 years or more in certain instances;
- Supply contract, where a supplier will supply products to Eskom as developed, tested and accepted during the development contract.

Product standardisation forms the backbone of Eskom Transmission's efforts to reduce the burden associated with sustaining the infrastructure and as such the above contracting may typically be extended for periods up to 10 years. Manufacturer specific interfacing may also dictate that only specific supplier's products can be used for infrastructure extension projects to ensure compatibility with the existing installed base.

Eskom's specification and adjudication criteria for PTM&C equipment in this enquiry are based on Eskom's deemed optimal approach (time and cost) to procure / engineer accepted products that are compatible with existing infrastructure and is prescriptive only in this regard. Products other than those previously accepted, as discussed above, would necessitate an extensive testing and acceptance process as well as the development of associated design base documentation to support the configuration, operation and maintenance of the products. In addition, experience has shown that constructive involvement by Eskom during development greatly accelerates the development timeframes and, as such, this has also been specified where relevant in this scope of work.

Tenderers are advised that if they have alternative technology which they may deem appropriate for the current scope of works, they are at liberty to bring this to Eskom's attention as a proposal. The use of technology which has not been tested and accepted by Eskom may delay the project and may have cost implications, which delays will impact the delivery timelines, and which additional costs will be for the tenderer's account. No product which is proposed as an alternative technology as contemplated shall be supplied or used in respect of the works unless accepted by Eskom in writing.

**Note:** The above must be read in conjunction with Engineering Specifications and Evaluation Criteria.

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## 2 Description of the works

### 2.1 Executive overview

The existing Koeberg 400kV GIS equipment together with associated AIS equipment has been in operation for almost 40 years and the substation is now due for major refurbishment in order to improve the reliability of the system.

The high-level scope of work for this project is to perform preliminary design, detailed design, for a new GIS building and equipping it with a 400/132kV GIS Breaker and half busbar system. This will include conducting preliminary investigations such as geotechnical studies and procurement of all equipment in compliance to Eskom standards.

The *Contractor* will construct the GIS building including installation, testing, commissioning, and handover of the new equipment and decommissioning of the old substation. The *Contractor* to provide SF6 storage facilities.

The *Contractor* to submit a detailed training program and provide training that will include the installation, maintenance, operation of all the equipment and provide any special tools that could be required for maintenance.

### 2.2 Employer's objectives and purpose of the works

The existing 400/132kV GIS is now due for major refurbishment in order to improve the reliability of the system

The objective and purpose of the *works* is to allow for the successful construction of a proposed new Weskusfleur GIS substation without interrupting the evacuation of power from Koeberg NPS.

Commissioning activities must be aligned with the planned Koeberg outages to avoid delaying Koeberg units from being returned back on line.

The proposed high-level scope is broken down as follows:

:

- The construction of new 400/132kV substation building including earthworks.
- The design, manufacture, supply and installation of a new 400kV and 132kV GIS system.
- The supply and installation of new 2 x 400/132/22kV 250 MVA Transformers.
- The supply and installation of new 2 x 22kV/400V 315kVA Auxiliary Transformers.
- The supply and installation of new 2 x 6.6kV/380V 315kVA Auxiliary Transformers.
- The re-routing, design and installation of Generator Transformers in-feed 1 and 2 to the proposed new 400kV busbar.
- The supply and installation of protection schemes.
- The design, manufacture, supply, and installation of a new 400 kV, 132 kV and 22kV cable systems.
- The de-energization and isolation of the existing 400/132kV GIS substation.
- Stringing, earthing and erection for 8 x 400kV Feeder bays.
- Stringing, earthing and erection for 5 x 132kV Feeder bays.
- Commissioning and handover of all the above.
- Provide a storage facility for the degassing of the SF6 gas for reuse.

Please refer to the following documents for the proposed scope:

- GIS: WKoe11P01-SE-D53 titled Weskusfleur 400/132kV Gas Insulated Substation – Scope of Work.
- PTM&C Scope: 240-170000104.

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The *Contractor* is responsible for the final detailed scope of work.

## 2.3 Interpretation and terminology

The following abbreviations are used in this Works Information:

Abbreviation	Meaning given to the abbreviation
AFC	Approved for construction
AIA	Appointed Inspection Authority
AIS	Air Insulated Substation
BAH	Breaker and Half
B-BBEE	Broad Based Black Economic Empowerment
BU	Business Unit
CHSM	Construction Health and Safety Manager
CHSO	Construction Health and Safety Officer
CM	Construction Manager
CPA	Cost Price Adjustment
CSI	Corporate Social investment
EA	Environmental Authorisation
ECC	Engineering and Construction Contract
EME	Exempted Micro Enterprise
EMP	Environmental Management Plan
FSS	Finance Shared Services
GIS	Gas Insulated Substation/System
GT Room	Generator Transformer Room/Building
IP	Intellectual Property
kVA	Kilo Volt Ampere
kV	Kilo Volt
LC	Local Content
LME	Large Measured Entity
LTIR	Lost Time Injury Rate
mm	millimetre
MTS	Main Transmission Station
MVA	Mega Volt Ampere
NCR	Non-Compliance Report

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NNR	National Nuclear Regulator
NPS	Nuclear Power Station
OBL	Outside battery limits
PM	Project Manager
Pr CPM	Professional Construction Project Manager
PTM&C	Protection Telecommunication Metering and Control
QITP	Quality, Inspection and Test Plan
QSE	Qualifying Small Enterprise
SACPCMP	South African Council for the Project and Construction Management Professions
SANS	South African National Standards
SARS	South African Revenue Service
SD&L	Supplier, Development and Localisation
SDL&I	Supplier, Development, Localisation and Industrialisation
SF6	SF <sub>6</sub> – Sulphur hexafluoride
SHE	Safety, Health and Environment
SHEQ	Safety, Health, Environment and Quality
TPD	Transmission Projects Delivery
V	Voltage
VAT	Value Added Tax
VFL	Visible Felt Leadership
R5,000.00	Five Thousand Rand

### 3 Management and start up.

#### 3.1 Management meetings

Regular meetings of a general nature may be convened and chaired by the *Project Manager* as follows:

Title and purpose	Approximate time & interval	Location	Attendance by:
Risk register and compensation events (Risk mitigation meetings)	Monthly on Friday at 10:00 or as agreed between the <i>Employer</i> and the <i>Contractor's</i> PM.	The <i>Employer's</i> PM to confirm the location i.e. Microsoft Teams or at the site camp.	Site supervisor, <i>Contractor</i> site supervisor, construction/site manager and project managers
Overall contract progress and feedback	Monthly on Thursday at 11:00 or as agreed between the <i>Employer's</i>	The <i>Employer's</i> PM to confirm the location i.e. Microsoft Teams or at	Site supervisor, <i>Contractor</i> site supervisor,



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	and <i>Contractor's</i> PM.	the site camp.	construction/site manager and project managers
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Regular meetings of a general nature may be convened and chaired by the *Contractor* as follows:

Title and purpose	Approximate time & interval	Location	Attendance by:
SHEQ Meetings	Monthly or as agreed between the <i>Employer's</i> and <i>Contractor's</i> PM.	The <i>Employer's</i> PM to confirm the location i.e. Microsoft Teams or at the site camp.	<i>Contractor</i> and <i>Employer's</i> representative
Progress update meeting	Monthly or as agreed between the <i>Employer's</i> and <i>Contractor's</i> PM.		

Meetings of a specialist nature may be convened as specified elsewhere in this Works Information or if not so specified by persons and at times and locations to suit the Parties, the nature and the progress of the works. Records of these meetings shall be submitted to the *Project 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.

The *Project Manager* prepares minutes of meetings for all meetings held between *Employer* and *Contractor*. The Minutes of a Meeting contain all significant aspects of the meeting recorded together with any actions placed, and is presented to the *Contractor* for signature at the next project meeting. After the *Contractor* has signed the minutes of meeting, the minutes are to be officially published.

### 3.2 Documentation control

- Properly compiled letters on Official Company letter head or forms attached to an email and not as a message in an email itself.
- Alpha numeric identification – Reference: **Date / Weskusfleur GIS /Communication number**.
- All correspondence to be addressed to the Project Manager.
  - Properly compiled letters on Official Company letter head or forms attached to an email and not as a message in an email itself.
  - Alpha numeric identification – Reference: **Date / Weskusfleur GIS /Communication number**.
  - All correspondence to be addressed to the Project Manager.

#### Contractual Forms to be used

- Contractual forms as per the NEC3 ECC forms.

#### Site Records:

*Contractor* site diary signed daily by the *Employer* and *Contractor's* Supervisors/ site managers.

- *Contractor* Daily Site Diary (Minimum *Employer* requirements on *Contractor* Daily Site Diary are);
  - Contract Number.
  - Date.
  - Work Hours – Start, Finish and Overtime.

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- Rainfall (mm).
- Temperature.
- Wind Speed.
- Visitors to site.
- *Contractor* employees on site and description (Site Agent, Foreman, Skilled, etc.).
- List of Plant and Equipment.
- Brief description of the day's activities.
- Toolbox talk topic.
- Diary signed daily by *Employer* - Site Manager/Supervisor and *Contractor* – Contract Manager/Site Agent.
- Daily *Contractor* attendance register to be attached to the Daily Site Diary.
- Site instructions issued by the Supervisor.
- Site Memorandums addressed to the Supervisor.

**Summary of the documentation required from the *Contractor* before and during construction includes the following:**

DOCUMENT	Before	During
Programme	X	X
Resource Schedule	X	X
Health and Safety Plan	X	
Quality Assurance Plan	X	
Method Statements	X	
Materials Inventory		X
Drawing Register		X
Progress Schedule		X
Application for Payment		X
Geotechnical and Foundation design reports	X	
Soil Test Results	X	
Concrete Batching note		X
Cube Test Reports		X
Weather Data (All site activities)		X
Monthly Safety Report		X
Inventory list of all materials		X
Construction progress photographs		X

## Communication

- All correspondence from the *Contractor* is signed by the *Contractor's* authorised representative.
- Correspondence from the *Project Manager* is issued and signed in the name of the *Project Manager* or his authorised representative.
- All formal correspondence from the *Contractor* is addressed to the *Project Manager* or his authorised representative and delivered to the *Project Manager* or his authorised representative.
- Emails and other forms of electronic communication (collectively referred to herein as *emails*) between the *Contractor* and the *Project Manager* are for the expedient transfer of preliminary technical data and non-contractual information only.
- The *Contractor* provides all contractually required submittals, notifications and the like by means of official correspondence or formal document transmittal.
- Emails or documentation included therein, sent from the *Project Manager* to the *Contractor* do not, in themselves, constitute either acceptance of a proposal from the *Contractor* or an

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instruction under the terms of the contract either of which may be or may result in a compensation event to the contract.

- The *Contractor* does not act on any email that the *Contractor* believes results in a compensation event to the contract whether or not the email by the *Project Manager* stated that it constituted a compensation event. The *Contractor* requests formal written confirmation of any instruction that may be or may result in a compensation event and receives this confirmation through formal correspondence, document transmittal, and *Project Manager's* instruction or compensation event, before acting on such an instruction.
- Signature authorities
  - The *Contractor* provides, a "Signature Authorization Form", the names and specimen signatures of those individuals within the *Contractor's* organization authorized to sign documents on behalf of the *Contractor*. The *Contractor* also specifies the financial or other limits of authority for each individual.
  - The *Contractor* delegate's authority within its organization to home office and field office personnel as required for effective performance of the work.
  - The *Contractor's* Contract Signatory signs the "Signature Authorization Form".

## Drawings and Document Transmittals

### Documentation Requirements

The *Contractor* submits all documentation conforming to the requirements of the *Employer and / or the Project Manager* applicable standards and specifications with the following specific requirements:

- When required, the *Contractor* transmits to the *Employer / Project Manager*, technical submissions, sketches or drawings, calculations, and other pertinent data, in sufficient detail to enable the *Employer / Project Manager* to review the information and determine that the *Contractor* clearly understands the requirements of the contract.
- Documents and data provided by the *Contractor* under the contract are subject to the *Employer / Project Manager* review and accept prior to *Contractor's* start of procurement.
- Review and acceptance of drawings, documents and / or data, etc. by the *Employer / Project Manager*, does not absolve the *Contractor* from any responsibilities under this contract.
- The review by the *Employer / Project Manager* with or without comments does not relieve the *Contractor* of any obligations or requirements under the contract nor be construed as an authorization of, or consent to, any deviation from the contract. If the *Contractor* considers that the *Employer / Project Manager* comments constitute a compensation event to the contract, the *Contractor* requests a formal instruction.
- All drawings and other documents are in English and are sized in accordance with metric standard sizes and carry titles to indicate equipment numbers or any other identification number of the portion of work covered on the particular drawing and / or document.
- The revision number marks changes or additions to any document, at the point of a revision, and the revision is reflected in its title block or drawing number by an appropriate revision indication.
- An Aconex transmittal summarizing the content of the set accompanies multiple sheets with the same drawing number.
- The format of electronic documentation conforms to the following requirements:

Document	Native Format	Issued to <i>Employer</i>
Specifications	MS Word	Native & PDF
Manuals	MS Word	Native & PDF

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Document	Native Format	Issued to <i>Employer</i>
Datasheets	Microsoft Excel	Native & PDF
Programs	Primavera or MS Projects	Native & PDF
Spreadsheets	MS Excel	Native & PDF
Drawings	AutoCAD Release 2004 or later	Native & PDF
Other Documentation	Microsoft Office compliant	Native & PDF

- The *Contractor* is, in interpreting the drawings and specifications, bound by the figures marked thereon and not by scaled measurements.
- If the *Contractor* believes that new or revised IFC (issued for construction) documents constitute a change to the Contract, the *Contractor* notifies *Employer / Project Manager* of the change and does not proceed with the changes until officially instructed to do so by the *Employer / Project Manager*.
- The *Employer / Project Manager* reviews engineering information or queries raised and returns comments to the *Contractor* within the period of reply. This review by the *Employer / Project Manager* does not relieve the *Contractor* of his responsibility to ensure that the package is in accordance with the requirements.
- The *Contractor* submits a written signed off As built as final issue of the "Handover" documentation.

### Design Specifications

For a detailed list of Eskom drawings and documents, refer to document number WKoe11P01-SE-D53 titled Weskusfleur 400/132kV Gas Insulated Substation – Scope of Work

### 3.3 Health and safety risk management

Refer to the Health and Safety Specification (TPDMAN-SP-84)

#### In accordance with Eskom internal procedure and wherever Health and Safety Issues are concerned:

- The Executive projects manager, BU will induct the *Contractor* MD before commencement of work on site. This will assist in ensuring that the MD gets first-hand information of requirements.
- Site managers, Site supervisors, including site representatives shall be required to conduct 1 VFL per day.
- The *Contractor* shall allow for work stoppages as per the Health and Safety specification
- The MD is required to conduct 2 Visible Felt Leadership per month.
- Site supervisors shall conduct behaviour-based safety observation. The client will provide training on request.
- The *Contractor* shall present all lost time incident and medical incidents to the *Employer*, the presentation of all incidents shall be done within 30days of the incident. All incidents shall be presented by the *Contractor's* MD to the *Employer*.

#### In addition to the above, the following shall apply:

During construction, all workers on structures shall use the following:

- Full body harnesses.
- Double Lanyards.
- Double climbing hooks, alternatively fall arrest system approved by Eskom.
- The fall arrest system is to be installed and used prior to any dressing or stringing operations. On cross-rope structures where the system is to be installed before the tower is erected, it will be used during the entire construction period.

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- Only head protecting helmets with chin straps that conform to Standard Reference Number EN 12492:2000 - Mountaineering equipment - Helmets for mountaineers - or EN 397:2000 Industrial Safety Helmets are acceptable. In addition, the requirements of SABS 0333:1999 part 3 and SABS 1833:1999 shall apply.

The *Contractor* supplies his Health and Safety Plan in accordance with the Occupational Health and Safety Act no.85 of 1993 and the Construction Regulations prior to the commencement of work on site.

The *Contractor* supplies the *Project Manager* with a monthly safety report indicating the total number of employees on site, the number of hours worked, the number of hours lost due to injury and details of any incidents/accidents.

Minutes of Safety Meetings are forwarded to the *Project Manager*.

Reporting of incidents shall be in accordance with Eskom 32-95 Rev8 or the latest revision.

#### **Unsafe working condition**

Where the instruction relates to health and safety matters or is in relation to a *Contractor's* default, the instruction is not a compensation event"

#### **Termination due to Non-Compliance.**

Eskom reserves the right to terminate the contract in the event that the *Contractor* is found to be consistently non-compliant to any SHEQ related issue.

#### **Penalty for Health and Safety statistics.**

Should the LTIR at any stage during the contract exceed the ESKOM target of 0.30 which is subject to change, a penalty of R100, 000.00 shall be imposed by the client. This penalty shall be refunded in the event that the LTIR drops below 0,30 or the applicable target specified by the *Employer* at contract completion.

#### **Penalties Health and Safety violations**

The following penalties shall apply for Health and Safety violations and are non – refundable:

- Life Saving rule violation: R10,000.00 per event, payable by the *Contractor*.
- Risk assessment and / or method statement not in place or available at activity: R10,000.00 per event.
- Non-compliance to Legislation: R10,000.00 per event.

#### **Penalties for Sub – Contractor management**

- Sub-*Contractors* are to be managed in accordance with the requirements of Health and Safety Specification (SHE Specification). Failure to comply shall result in a fine of R10,000.00 per non-compliance.

All the above penalties shall be implemented by the *Project Manager* after all necessary investigations have been finalised.

The *Contractor* shall comply with the health and safety requirements contained in SHE Specification which forms part of the enquiry documentation.

### **3.4 Environmental constraints and management**

The *Contractor* shall comply with the environmental criteria and constraints stated in Health and Safety specification, EMP, EA and TPDMAN – ST 37 to this Works Information.

In addition to the above, the following are the Koeberg environmental requirements:

The establishment of a concrete batch plant to comply to the Environmental Authorisation.

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The concrete batch plant must be lined with impermeable material to prevent any possible leachate and or ground water contamination.

A method statement detailing how the concrete batch plant will be established must be sent to the *Project Manager* for review and acceptance prior to establishing the batch plant.

The following penalty shall apply for Environmental non-compliance and are non-refundable:

**Penalties for Environmental related issues**

- Legal contravention and non-compliance: R20,000.00 per event.

**Campsite Layout**

- Campsite establishment and de-establishment is to be managed in accordance with the Health and Safety specification.
- The layout should be such that it facilitates a circular traffic route that eliminates the need to reverse when loading and offloading. There must be one point of entry and exit
- The *Contractor* shall comply with the environmental criteria and constraints stated in Annexures as per EMP.
- The *Contractor* must also comply with the following environmental procedures: TPD – ST 37 Environmental requirements for *Contractors* working on power delivery projects

### 3.5 Quality assurance requirements

The *Contractor* shall comply with the quality criteria and constraints stated in QM58 Quality specification to this Works Information.

The following penalties shall apply for Quality and are non-refundable:

**Penalties for Quality related issues**

- NCRs not closed out satisfactorily within 30 days: R10,000.00 per event.

**In addition to the above, the following shall apply:**

- The *Contractor* implements and maintains a quality management system in order to ensure compliance with the *works information* and all contractual obligations and also as a minimum meets the requirements of the ISO 9000 series for quality management systems as specified within Quality Requirements for Organisations. In this regard the *Supervisor* may instruct the *Contractor* to perform quality inspections prior to his own inspections, or to assist in inspections.
- The *Contractor* ensures that his staff and sub-*Contractors* are conversant with the contents of the scope of work, quality control plans and work instructions.
- The involvement of the *Contractor's* Appointed Inspection Authority (AIA) is a requirement to ensure that all the conditions of the code are met, but this does not absolve the *Contractor* from any of his responsibilities for quality.
- The *Contractor* and his AIA compiles a Contract Quality Plan, specific product inspection and test plan for the entire Scope of Works. This document shows at which stages during the contract the AIA is required, and what types of inspection, testing, witnessing etc. are carried out to ensure that the requirements of the *works information* are met by the *Contractor*.
- All Quality Planning documentation shall be submitted for Eskom Approval 14 days after Contract Award or prior Commencement of any Works.
- The *Contractor* ensures that the *works* is carried out in accordance with the inspection and test plans, acceptance test procedures and other specifications in the *works information*.

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- The *Contractor* ensures that all specifications and requirements are issued and controlled to the relevant parties in his organisation. Copies of all relevant specifications and drawings must be available on site.
- All documentation has a clearly stated revision number and previously similar documentation is revoked.
- Any non-conformity is to be documented by the *Contractor* and is to be reported to the *Supervisor* immediately and corrected in the specified timelines.
- All completed work is signed-off on inspection and test plans and control sheets on a daily basis and all the relevant signatures are on the documentation. A weekly status report of completed work / activities is made available to the *Project Manager*.

The *Contractor* must comply with the following quality procedure: QM58 Quality requirements for organisations

### 3.6 Programming constraints

A detailed proposed programme is submitted with the Tender. The programme includes:

- method statements which identify the equipment and other resources which the *Contractor* plans to use.
- planned completion of each section of the *works*.
- the order and timing of the operations which the *Contractor* plans to do in order to Provide the Works. Makes provision for:
  - float
  - time risk allowances
  - health and safety requirements
- the dates when, in order to Provide the Works in accordance with his programme, the *Contractor* will require outages.

The *Contractor* shall submit the first programme to the *Project Manager* for acceptance within two (2) weeks of the *starting date* of the Package Order. The programme is to conform strictly to the requirements of core clause 31 and the Contract Data.

The *Contractor* revises the programme as required in accordance with core clause 32.

Each time the programme is revised, the *Contractor* submits a revised Forecast Rate of Payment.

#### Weather and its effect on the Accepted Programme

The *Employer* will provide a weather data from SA weather services for Atlantis-Western Cape. The *Contractor* should familiarise themselves with the minimum and maximum temperatures, monthly average rain fall, wind and snow fall around the area using the 10 (ten) year weather data from SA Weather Services and make provisional allowance in the pricing.

Only the difference between more adverse weather recorded and the equivalent measurement given above is taken into consideration when assessing a compensation event.

#### Outage constraints

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Since the objective is to evacuate the full power produced from the Koeberg power station, the execution must be aligned with the approved Koeberg unit outages.

The *Employer* will provide the *Contractor* with the outage schedule for Koeberg unit 1 and 2, for the *Contractor* to plan the execution of the *Works* accordingly and make provisional allowance for any delays due to unavailability of outages.

### 3.7 *Contractor's* management, supervision, and key people

The *Contractor* submits an organogram showing his human resources and their lines of authority / communication/ roles and responsibility.

The *Contractor* provides experienced and competent personnel with proven track record of previous projects in the following key positions and submits their CV's:

- Project Manager/s
- Construction manager/s
- Site Supervisor/s (experienced in GIS installations and commissioning)
- Qualified Rigger/s
- Quality Assurance Manager
- Foundation Supervisor/s
- Stringing and Cabling Supervisor/s
- Environmental Control Officer/s
- Quality Control Officer/s
- Safety Officer/s
- Geotechnical specialist

The *Contractor* shall provide experienced and competent personnel in the following key positions:

#### **Project Manager/s**

Competency level: Civil Engineering/Construction Management/Electrical Engineering.

The Project Manager shall be registered as a Professional Construction Project Manager (Pr.CPM) with the South African Council for Project and Construction Management Professions (SACPCMP) or international equivalent authority as Project Manager. The international Project Manager if involved in this project must have accreditation from SACPCMP to work in South Africa. The Project Manager will act as one point of responsibility for the management of the project from conception to completion, which includes the management of related professional services. This registration must remain valid for the duration of the contract. The *Contractor* must provide proof of registration to the *Project Manager*.

#### **Construction Manager**

Competency level: Civil Engineering/Construction management/Quantity Surveying or a minimum of 10 (ten) years relevant civil construction experience. The Site Manager shall be registered as a Professional Construction Manager (Pr.CM) with the South African Council for Project and Construction Management Professions (SACPCMP). This registration must remain valid for the duration of the contract. The *Contractor* must provide proof of registration to the *Project Manager*.

#### **Supervisors**

Competency level: As specified in Health and Safety Specification.

#### **Required SHE personnel**

Competency level: As specified in Health and Safety Specification.



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Including but not limited to SACPCMP, registered as a Construction Health and Safety Manager (CHSM) & Construction Health and Safety Officer (CHSO). The *Contractor* shall discuss these appointments and the number of appointments with the *Project Manager*.

### SACPCMP Registration Requirements

The *Contractor* shall ensure that they comply with the registration of identified personnel as per the requirements of the South African Council for the Project and Construction Management Professions (SACPCMP) as gazetted in Project and Construction Management Professions Act No. 48 of 2000, Section 18(1) (a) or (b) and (c).

The following are the categories that must be registered, and their certificates be downloaded from privyseal ([www.privyseal.com](http://www.privyseal.com)) and be submitted:

- 1 Construction Manager (CM), reference to Construction Regulation GNR. 84 of 7 February 2014 section 8(1), in terms of appointment and registration in terms section 18(1)(c) of the Act 48 of 2000.
- 2 Construction Health and Safety Manager (CHSM), registration in terms section 18(1)(c) of the Act 48 of 2000.
- 3 Construction Health and Safety Officer (CHSO), reference to Construction Regulations GNR.84 of 7 February 2014 section 8(6), and in terms section 18(1)(c) of the Act 48 of 2000.

Note:

- 1 Alternate Construction Manager, reference to Construction Regulations GNR.84 of 7 February 2014 section 8(1), shall be registered with SACPCMP should the person be appointed as Alternate Construction Manager.

Consideration shall be made to those who are registered as Candidate in any of the categories mentioned above, provided that the individual candidate submits an agreement (appointment) between the candidate and the mentor. Both the candidate and the mentor shall submit their certificates downloaded from privyseal ([www.privyseal.com](http://www.privyseal.com))”

## 3.8 Invoicing and payment

Within one week of receiving a payment certificate from the *Project 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 *Project Manager's* payment certificate.

The *Contractor* shall address the tax invoice to

Eskom SOC Limited  
P O Box 1091  
Johannesburg  
2000

and include on each invoice the following information:

- 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.
- Description of service provided for each item invoiced based on the Price List.
- Total amount invoiced excluding VAT, the VAT and the invoiced amount including VAT.
- (Add other as required)

Details on how to submit invoices and additional information:

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- Ensure that the Eskom order number is clearly indicated on your invoice together with the line number on the order you are billing for.
- All Electronic invoices must be sent in PDF format only.
- Each PDF file should contain one invoice; or one debit note; or one credit note only as Eskom's SAP system does not support more than one PDF being linked into workflow at a time.
- Your E-mail may contain more than one PDF file (e.g. 2 invoices on 2 separate PDF files in one e-mail)
  - Send all invoices in PDF to the *Employer*: [invoicessskomlocal@eskom.co.za](mailto:invoicessskomlocal@eskom.co.za)
- For Foreign invoices, suppliers will still be required to physically deliver hard copies of original documents to the respective documentation management centers even though you have e-mailed those invoices (Eskom is still seeking clarity from the South African Reserve Bank regarding e-invoicing for Foreign Invoices or invoices in foreign currency. Current requirements are that these manual invoices should still be submitted. You can send the invoice copy to the email addresses indicated below).

### Tax Requirement

- A PDF file that was created directly from a system meets the definition of original document and is allowed (including saving documents from excel to PDF, word to PDF etc.)
- An Invoice that was printed and then scanned to PDF by the Vendor is not acceptable as this is not an original tax invoice by SARS definition but a copy.

The following wording needs to appear on the invoice: "Your invoice is encrypted in order to comply with SARS requirements that invoices, and statements sent electronically are tamperproof."

- If there is Cost Price Adjustment (CPA) on your invoice, we recommend that you issue a separate invoice for CPA so that if there are any issues on the CPA the rest of the invoice can be paid while resolving the CPA issues.
- Introduction of electronic invoicing does not guarantee payment but will ensure visibility of all invoices and ensure that no invoices get lost. If the goods receipt is not done the invoice will be parked and the system will automatically send an e-mail to the end user to do the goods receipt. This is also tracked by Eskom through the park invoice report.
- Your company can request a park invoice report from the Finance Shared Services (FSS) contact center which can then be followed up and corrected. You are welcome to forward the details of invoices corrected to the FSS contact center.
- Email addresses for invoice submission: [invoicessskomlocal@eskom.co.za](mailto:invoicessskomlocal@eskom.co.za)

## 3.9 Risk and Insurance.

The *Contractor* to note that any cancellations or changes to the outage dates are due to national network constraints aimed at addressing national security of supply. Outages may be cancelled or postponed as necessary to address this issue, which is of national interest and related to system constraints. Activities affected by these changes should not be considered as compensation events.

Regarding the insurance provided by the *Employer*, the *Contractor* should refer to Z Clause 13 (Insurance) within Part C1 – Data provided by *Employer*. Delays associated with insurance claims should not be considered as compensation events.

## 3.10 Shipping

The nominated INCOTERM for this project is DAP (Delivery At Place). The place is at Koeberg NPS. This INCOTERM will apply to international supplier who do not have a local representative.

In the event that contract is concluded with a local supplier, who will be importing the goods from overseas, no INCOTERM applies because the transaction is not an international purchase. The recommendation is for the supplier to take full responsibility of shipping from origin country to Eskom site. This implies that the Eskom Deferment Account for payment of Customs Duties, where applicable, and Customs VAT cannot be utilized.

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### 3.11 Contract change management

As per NEC (ECC3)

### 3.12 Provision of bonds and guarantees

The form in which a bond or guarantee required by the *conditions of contract* (if any) is to be provided by the *Contractor* is given in Part 1 Agreements and Contract Data, document C1.3, Sureties.

The *Employer* may withhold payment of amounts due to the *Contractor* until the bond or guarantee required in terms of this contract has been received and accepted by the person notified to the *Contractor* by the *Project Manager* to receive and accept such bond or guarantee. Such withholding of payment due to the *Contractor* does not affect the *Employer's* right to termination stated in this contract.

### 3.13 Training workshops and technology transfer

The *Contractor* may be required to transfer some of the skills to *Employer's* site teams, comply to the Supplier Development Localisation & Industrialisation (SDL&I) requirements and as stated in the *Employer's* specifications provided to the *Contractor*.

The *Contractor* to submit a detailed training program and provide training that will include the installation, maintenance, operation of all the equipment and provide any special tools that could be required for maintenance.

## 4 Engineering and the *Contractor's* design

In accordance with the *Employer's* specifications which are provided to the *Contractor*.

The *Contractor* is to perform preliminary design, detailed design, for a new GIS building and equipping it with a 400/132kV GIS Breaker and half busbar system. This will include conducting preliminary investigations such as geotechnical studies and procurement of all equipment in compliance to Eskom standards.

The *Contractor* will construct the GIS building including installation, testing, commissioning and handover of the new equipment and decommissioning of the old substation. The *Contractor* to provide SF6 storage facilities for the existing SF6 gas.

### 4.1 *Employer's* design

The *Employer* will issue the pre-concept designs for information only.

The *Contractor* will be responsible for all concept (preliminary) and detailed designs in accordance with the *Employer's* specifications, international standards and information provided to the *Contractor*.

### 4.2 Parts of the works which the *Contractor* is to design

The *Contractor* will be responsible for all concept (preliminary) and detailed designs in accordance with the *Employer's* specifications, international standards and information provided to the *Contractor*. This includes the earth works, buildings, GIS system, Cable systems, Transformers, and all related systems around these.

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The protection and control system must also be in accordance with the *Employer's* specification documents.

#### 4.3 Procedure for submission and acceptance of *Contractor's* design

In accordance with the *Employer's* specifications and tender returnables which are provided to the *Contractor*.

The *Contractor* to submit their designs to the *Project Manager* for review and acceptance.

#### 4.4 Other requirements of the *Contractor's* design

The *Contractor* to take into account that during commissioning, the new GIS must be integrated with Koeberg NPS and interfaced with the protection schemes that will be used.

The integration with the Koeberg existing systems is required for the following:

- 6.6kV system from Station Transformers to the new GIS system
- Interconnecting cables from the existing Koeberg MTS to the new GIS system
- HMI interfacing with Koeberg from the new proposed Weskusfleur MTS
- Possible integration with the remote ends.

#### 4.5 Use of *Contractor's* design

The *Contractor* to allow the *Employer* to use detailed designs, drawings and all relevant documents for operational, maintenance purposes and for future developments whenever required. Copy rights to remain with the *Employer*.

### INTELLECTUAL PROPERTY RIGHTS

"Intellectual Property" means (a) patents, trademarks, service marks, rights in designs, trade names, copyrights and topography rights, in each case whether registered or not; (b) applications for registration of any of them; (c) rights under licences and consents in relation to any of them; (d) all forms of protection of a similar nature or having equivalent or similar effect to any of them which may subsist anywhere in the world.

- All Intellectual Property rights, contained in any developed materials which are created by the *Contractor* or on behalf of the *Contractor*, for the purposes of and in support of the provision of the works vests with the *Contractor*. The *Contractor* retains the Intellectual Property rights in and to the *Contractor's* Intellectual Property made by or on behalf of the *Contractor* as part of the works.
- The *Contractor* gives to the *Employer* a non-terminable, transferable, non-exclusive, royalty-free licence, to copy, use and communicate the *Contractor's* documents containing Intellectual Property relating to the works (the "IP Documents"), including making and using modifications of them.
- This licence (a) applies throughout the actual or intended working life (whichever is longer) of the works; (b) entitles any person in proper possession of the relevant part of the works, to copy, use and communicate the IP Documents for the purposes of completing, operating, using, maintaining, altering, adjusting, repairing, refurbishing and demolishing the works (the "Purposes"); and (c) in the case of IP Documents which are in the form of computer programs and other software, permit their copying, use and communication for the Purposes.
- The IP Documents are not, without the *Contractor's* written consent, used, copied or communicated to a third party by or on behalf of the *Employer* for any purpose other than the Purposes.

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- The *Contractor* procures that each *SubContractor* executes all and any IP Documents and take all and any other actions as may be required, in order to give effect to this licence.
- The *Employer* retains all Intellectual Property rights in all documents made by or on behalf of the *Employer* including all documents and requirements provided prior to or during the execution of the works. The *Contractor* does not, without the written consent, of the *Employer*, copy, use or issue to a third party any of these document and requirements except for the purposes of executing the works.
- Either party procures that any third party executes confidentiality undertakings not to disclose to any other third parties, any of the *Employer's* documents and requirements at all, in respect of the *Employer*, or the IP Documents other than for the Purposes, in respect of the *Contractor*.

## 4.6 Design of Equipment

The *Contractor* submits particulars of the design including temporary works designs to the *Employer* for review and acceptance.

## 4.7 Equipment required to be included in the works

The *Contractor* shall submit a list of all equipment and machinery required to execute the *Works* and provide all special tools and equipment required for the maintenance of the completed *Works*.

## 4.8 As-built drawings, operating manuals and maintenance schedules

In accordance with the *Employer's* specifications which are provided to the *Contractor*.

Upon Completion of the *Works* the *Contractor* is to provide final "as built" records in accordance with the requirements as laid out below.

Three (3) copies of the full sets of detailed drawings (as per drawing register) and one electronic copy of the drawing register are to be compiled by the *Contractor* at the end of the project in a hard copy format. In addition, the *Contractor* is to supply an electronic format of the records to the *Project Manager*.

Three (3) copies of the operation manuals and maintenance schedules are to be compiled by the *Contractor* at the end of the project in a hard copy format. In addition, the *Contractor* is to supply an electronic format of the documents to the *Project Manager*.

# 5 Procurement

## 5.1 People

### 5.1.1 Minimum requirements of people employed on the Site

The *Contractor* to comply to the Labour Laws of South Africa and access requirements to Koeberg NPS

### 5.1.2 BBBEE and preferencing scheme

#### Change of Broad Based Black Economic Empowerment (B-BBEE) status

Where a change in the *Contractor's* legal status, ownership or any other change to his business composition or business dealings results in a change to the *Contractor's* B-BBEE status, the *Contractor* notifies the *Employer* within seven days of the change.

The *Contractor* is required to submit an updated verification certificate and necessary supporting

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documentation confirming the change in his B-BBEE status to the *Project Manager* within thirty days of the notification or as otherwise instructed by the *Project Manager*.

Where, as a result, the *Contractor's* B-BBEE status has decreased since the Contract Date the *Employer* may either re-negotiate this contract or alternatively, terminate the *Contractor's* obligation to Provide the Works.

Failure by the *Contractor* to notify the *Employer* of a change in its B-BBEE status may constitute a reason for termination. If the *Employer* terminates in terms of this clause, the procedures on termination are P1, P2 and P3 as stated in clause 92, and the amount due is A1 and A3 as stated in clause 93.

### 5.1.3 Supplier Development, Localisation and Industrialisation (SDL&I)

SDL&I mandate is to achieve maximum and sustainable local development impact through leveraging Eskom's procurement spend in a manner that allows flexibility within the business in order to accommodate government local development initiatives and policies

As a State-Owned Enterprise, ESKOM supports Government's socio-economic development initiatives that it addresses through Supplier Development and Localisation objectives, which include enterprise development, transfer of skills, job creation, incubation, localisation of procurement initiatives and industrialisation.

For the purposes of tendering, the *tenderer* must demonstrate the manner in which the SD&L requirements will be met in due course in an implementation program. If the *tender* is awarded all SD&L undertakings (the *Contractor's* SD&L Obligations) must be made by the *Contractor* at the time of contracting.

#### SDL&I Undertaking

- The SDL&I undertaking generally identifies the following areas for SDL&I evaluation. These are procurement from EMEs, QSEs, LMEs (Generic); local content of the tender as a whole; Job creation and Skills Development commitments of the *tenderer*.
- Targets and weighting are set for each individual project.
- Tenderers who complete and submit the undertaking as required, but who do not meet Eskom's targets, will not be disqualified. SDL&I undertakings do not form part of scoring but commitments will form part of contractual obligations.

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Weskusvlei							
SiteTABLE 1: SUPPLIER DEVELOPMENT AND LOCALISATION COMPLIANCE MATRIX FOR SUPPLIERS AND CONTRACTOR							
Criteria	Weight (%)	Total Target (%)	Proposed Target (%)	Total Overall Weighted Score			
Local Content to South Africa	25%	100%	0%	0.00%			
EME/QSE 1 and 2	50%	30%	0%	0.00%			
Skills development	25%			0.00%			
Total	100%			0.00%			
	Total Supplier Development and Localisation Score			0.00%			
TABLE 2: SKILLS DEVELOPMENT COMPLIANCE MATRIX							
			Target Number of Persons to be Trained (Local to South Africa)	Proposed Number of Persons to be Trained (Local to South Africa)	Target Number of Persons to be Trained (Local to Site)	Proposed Number of Persons to be Trained (Local to Site)	Total Weighted Score
Skill Type (Occupation)	OFO Occupational Group	Weight (%)					
Civil Engineer		10.00%	0		2		
Electrical Engineer		10.00%	0		2		
Welding Artisan		10.00%	0		4		
Rigger		10.00%	0		4		
Commissioning of Protection Panels & GIS equipment		10.00%	0		2		
Cable Joint Training		10.00%	0		2		
SF6 Handling Training		10.00%	0		2		
Structural Technologist		10.00%	0		2		
Safety Officer		10.00%	0		2		
Mechanical Technologist		10.00%	0		2		
	Total	100.00%	0		24		0.00%

**To be completed by Tenderer**

Number of jobs to be <b>created</b> as a result of this contract	
Number of jobs to be <b>retained</b> as a result of this contract	

## Definitions and Interpretation

The definitions below shall be referred to in the interpretation of this document. The targets for EMEs, and QSEs are a percentage of the local content portion of the tender only.

### Exempted Micro Enterprise (EME)

- In terms of the Generic Codes of Good Practice, an enterprise including a sole propriety with annual total revenue of R10 million or less qualifies as an EME.
- In instances where Sector Charters are developed to address the transformation challenges of specific sectors or industries, the threshold for qualification as an EME may be different from the generic threshold of R10 million. In such instances, the relevant Sector Charter thresholds will therefore be used as a basis for a potential bidder to qualify as an EME. (For example, the approved thresholds for EMEs for the Tourism and Construction Sector Charters are R2.5 million and R1.5 million respectively).
- An EME automatically qualifies as a level 4 contributor with B-BBEE recognition level of 100% in terms of the Codes of Good Practice.
- An EME with at least 51% black ownership qualifies as Level 2 Contributor with B-BBEE level of 125% in terms of the Codes of Good Practice.
- An EME with 100% black ownership qualifies as a Level 1 contributor with B-BBEE level of 135% in terms of the Codes of Good Practice.

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- An EME that is regarded as a specialized enterprise with at least 75% black beneficiaries qualifies as Level 1 contributor with B-BBEE level of 135% in terms of Codes of Good Practice.
- An EME that is regarded as a specialized enterprise with at least 51% black beneficiaries qualifies as a Level 2 contributor with B-BBEE level of 125% in terms of the Codes of Good Practice.
- An EME is required to submit a sworn affidavit confirming their annual total revenue of R10 million or less and level of black ownership to claim points as prescribed by regulation 6 and 7 of the Preferential Procurement Regulations 2017.

### **Qualifying Small Enterprises (QSE)**

- The Codes define a QSE as any enterprise with annual total revenue of between R10 million and R50 million.
- A QSE with at least 51% black ownership qualifies as a Level 2 contributor.
- A QSE with 100% black ownership qualifies as a Level 1 Contributor.
- A QSE that is regarded as a specialized enterprise with at least 75% black beneficiaries qualifies as a Level 1 contributor with B-BBEE level of 135% in terms of the Codes of Good Practice.
- A QSE that is regarded as a specialized enterprise with at least 51% black beneficiaries qualifies as a Level 2 contributor with B-BBEE level of 125% in terms of the Codes of Good Practice.
- A QSE is required to submit a sworn affidavit confirming their annual total revenue of between R10 million and R50 million and level of black ownership or a B-BBEE level verification certificate to claim points as prescribed by regulation 6 and 7 of the Preferential Procurement Regulations 2017.

### **Large Measured Entity (LME) /Generic**

- A generic Enterprise's B-BBEE compliance is measured using the Generic Scorecard. The Generic scorecard is based on five elements each of which has an assigned weighting which correlates with the importance of that specific element and a set target.
- A generic Enterprise has an annual turnover that is more than R50 million rands.

### **SDL&I Progress Report**

Means the *Contractor's* SDL&I progress report contemplated in clause 7 of this annexure.

### **Local Content**

- Goods made in South Africa (from local raw materials).
- Only good that are made within the borders of SA can be claimed to be local content.
- Local Content (is mainly based on local manufacturing, there must be value addition to the product).
- LC is measured on the product which must be manufactured in South Africa at a specified minimum threshold (LC).
- LC percentage is determined based on the availability of input materials.
- Assembly of products is considered to have some level of local content.
- Example where 100 local content is required, no imports are allowed all materials including the production process must be local.
- If local content is less than 100 imported raw materials can be used without any Exemption.
- Key to protect local industry against imports, build industrial capacity, create jobs and contribute to the economic growth in South Africa.



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### Local Procurement

- Goods and services purchased locally irrespective of where they were made or produced.
- It is based on geographical area, may be a region/district/province.
- Local procurement is based on the location of the business.
- Imported goods are considered.
- Using local resources to stimulate growth and development.
- Simply buying from a local supplier.

### Imported Goods and Services

“Imported goods and services” means, but is not limited to:

- Goods and services directly imported into South Africa.
- Goods which although stored in South Africa are produced and/or wholly manufactured outside the borders of South Africa and/or have a minimum of 50% (fifty percent) of production costs (including labour) incurred outside of South Africa and payable to foreign residents and/or foreign registered entities.
- Goods that have been "substantially transformed" outside of South Africa. Substantially transformed refers to the irreversible incorporation of imported components in the goods, with the labour costs and profit content earned by foreign residents and/or foreign registered entities exceeding 50% (fifty percent) of the Contract Amount and/or the significant assembly and manufacture of the goods occurring outside of South Africa's borders; and/or
- Services with at least 50% (fifty percent) of the labour cost incurred outside of South Africa's borders and/or with at least 50% (fifty percent) of the service fee payable to foreign residents and/or foreign registered entities, regardless of whether the service involves domestic capital goods or other domestic costs

### Final Review

Final Review means the review (to be conducted at the *completion* date of the whole of works by the *Project Manager*) of the *Contractor's* performance in respect of the *Contractor* SDL&I Obligations.

### Skills Development

This is the requirement that *tenderers* commit to train certain individuals in specified trades.

The requirement is that the targeted numbers of individuals are trained and complete practical tasks to achieve the outcome of passing a trade test and qualifying as an artisan, or the equivalent for any other required skill.

### Contractor's SDL&I Commitments

Means those commitments regarding local content, skills development, Job creation and procurement from EMEs and QSEs made by the *Contractor* in his tender submission and used by the *Employer* for the purposes of calculating the *Contractor's* SD&L score in the tender evaluation process.

### Contractor's SDL&I Obligations

Means those obligations of the *Contractor* regarding local content, skills development and procurement from QSEs and EMEs derived from *Contractor's* SDL&I Commitments and agreed between the *Contractor* and the *Employer*.

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### **Certificate of Fulfilment**

Means the certificate issued by the *Employer* after the Final Review as evidence of the *Contractor's* successful fulfilment of the *Contractor* SDL&I Obligations.

### **SDL&I Progress Reports**

The *Contractor* shall submit monthly SDL&I progress reports to the *Project Manager*. SDL&I progress reports shall be submitted by the 7th (seventh) day of the month following the months to which the report relates. Each report shall include:

- **An executive summary**

Charts and detailed descriptions of the progress in narrative format, including each stage of progress of the *Contractor* SDL&I Obligations, the meeting (or delay in the meeting) of anticipated dates and targets (as set out in the program) and any documents, statistics or other form of verification of the dates and targets to be provided in respect thereof.

Percentage progress and the actual or expected dates of commencement of any of the major stages making up the *Contractor* SDL&I Obligations.

Schedule of forecast and actual, together with a 3 (three) month look-ahead of major activities and events.

Comparisons of actual and planned progress in terms of the Implementation Program.

- **Details of actual and planned resources**

An Affidavit from the sub-*Contractors* stating the work that has been subcontracted to meet the *Contractor's* SDL&I obligations.

A schedule identifying all details of persons in the process of undergoing or who have successfully completed the Skills Transfer for the relevant period (including details of their personal information and certified copies of their test results and certificates received).

A risk register and assessment dealing with all areas of concern which may cause delays to the fulfilment of the SDL&I obligations and details of the corrective or other measures being adopted, or to be adopted to mitigate or overcome such delay; and such other matters and information (including schedules and charts) as the *Project Manager* may require to be included in the SDL&I progress report from time to time.

An electronic copy and two hard copies of each SDL&I progress report shall be submitted to the Project Manager.

Additional Reports: The *Project Manager* shall be entitled to request the *Contractor* to provide additional reports when in his opinion they are warranted to monitor the progress of the fulfilment of the *Contractor* SD&L obligations.

### **The Final Review**

The parties' record that the purpose of the final review is for the *Project Manager* to determine whether the *Contractor* has fulfilled the *Contractor's* SDL&I obligations as at *completion date*.

The *Contractor* shall provide the *Project Manager* with the following documentation to be used by the *Project Manager* as a basis for the final review:

- A consolidated SDL&I progress report recording all steps taken to meet the *Contractor's* SD&L obligations from the *starting date* to the *completion date* including all information and documentation referred to in clause 8.1 above.

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All of the SDL&I progress reports provided by the *Contractor* during the course of the contract and any other additional report, documentation or information that the *Project Manager* deems to be reasonably relevant to the conduct of the final review (to be provided by the *Contractor* at least 21 (twenty one) business days prior to the final review). The *Project Manager* shall notify the *Contractor* of such request by way of written notice at least 30 (thirty) business days prior to the final review.

The *Employer* shall, in its reasonable discretion, conduct the final review by comparing those *Contractor's* SDL&I obligations actually fulfilled by the *Contractor* as at the time of the final review against with the *Contractor's* SDL&I obligations as a whole.

The *Project Manager* shall notify the *Contractor* of its findings on the final review by way of written notice within 30 (thirty) business days of the final review. The notice shall contain the *Project Manager's* reasons for its findings.

Should the final review reveal that the *Contractor* has not fulfilled and/or complied with any of the *Contractor's* SD&L obligations as at the *completion date*:

The *Contractor* shall be in breach of a material obligation under the contract and the *Employer* shall be entitled to have immediate recourse to and make a claim against the whole of the retention as the penalty for the *Contractor's* breach of the *Contractor* SDL&I obligations.

Should the final review reveal that the *Contractor* has fulfilled and/or complied with all the *Contractor's* SDL&I obligations as at the *completion date*, the *Employer* shall issue a certificate of fulfilment.

### **SDL&I Retention and Performance Security**

As security for the fulfilment of all SDL&I obligations, Eskom will apply a retention of 2.5% of every invoice amount (excluding VAT) for failure to submit SDL&I performance reports every quarter; or failure to meet the SDL&I obligations in a contract.

In addition to the 7.5% as per clause X16.1 of Part C1 (Data by *Employer*), an additional retention of 2.5% for SDL&I, Project Stability, and CSI will apply.

The 2.5% retention will be refunded upon the successful fulfilment of the agreed SDL&I, Project Stability, and CSI commitments. However, if the *Contractor* fails to meet these obligations, the portion unfulfilled will be assessed and withheld from the final payment. Any penalty incurred will be deducted from the assessment conducted upon the completion of the entire project.

### **Project Stability and CSI**

The Contractor to comply with the requirements of the **Koeberg GIS Project Stability report**.

## **5.2 Plant and Materials**

### **5.2.1 Quality**

The *Contractor* shall comply with the QM58 Quality specification.

### **5.2.2 Spares and consumables**

*Contractor* to provide necessary parts and spares for commissioning and maintenance for the first year (defects period), in accordance with the *Employer's* specifications which are provided to the *Contractor*.

## **5.3 Tests and inspections before delivery**

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*Contractor* to notify the Project Manager for items which are ready for tests and inspection as required by the QM58; as per the accepted QITPs and in accordance with the *Employer's* specifications which are provided to the *Contractor*.

## **5.4 Marking Plant and Materials outside the Working Areas**

The *Contractor* shall mark all Equipment, Plant and Material which is outside of the working area, destined for the works, as the *Employer's* property.

## **5.5 Contractor's Equipment (including temporary works).**

*Contractor* to notify the Project Manager for items which are ready for tests and inspection as required by the QM58; as per the accepted QITPs and in accordance with the *Employer's* specifications which are provided to the *Contractor*.

# **6 Construction**

The *Contractor* shall comply with all the requirements of the SHEQ specifications, EA and EMP, *Employer's* specifications, international standards and SANS standards. The *Contractor* shall comply to Koeberg NPS' requirements for initiation, construction and completion of work.

## **6.1 Temporary works, Site services & construction constraints**

### **6.1.1 Employer's Site entry and security control, permits, and Site regulations**

Koeberg NPS have very strict entrance requirements; the *Contractor* shall make a provisional allowance to meet Koeberg's requirements for both access and construction. The *Contractor* will be expected to undergo security screening, training and drug testing prior accessing Koeberg NPS.

The *Contractor* to ensure that the security services are compliant with the PSiRA requirements. Construction work will be carried out in a Koeberg Security controlled area, the *Contractor* to comply to the Koeberg Security requirements.

The *Contractor* to attend to concerns raised by Koeberg NPS representatives as and when required. The *Contractor* will be responsible for access control and patrols within the construction area. The *Contractor* to also perform the threat and risk assessment.

### **6.1.2 Restrictions to access on Site, roads, walkways and barricades**

Refer to the EMP, Health and Safety specification, EA, *Employer's* specifications and Koeberg NPS requirements

- The *Contractor* to demarcate, construct and rehabilitate all access roads, construction areas, site camp, in accordance with the Environmental Management Plan. The *Contractor* to use existing access roads to access the construction area.

### **6.1.3 People restrictions on Site; hours of work, conduct and records**

Refer to attached EMP, Health and Safety specification, EA and Koeberg NPS requirements

The *Contractor* to keep records of all his people on Site, including those of his SubContractors, for the *Project Manager* or *Supervisor* to have access to at any time.

### **6.1.4 Health and safety facilities on Site**

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Refer to the Health and Safety specification, EMP, South African Government Guidelines and Directives on Management of COVID-19 and other epidemic outbreaks, World Health Organisation Guidelines, the latest Disaster Management Act and applicable government regulations.

The *Contractor* shall appoint the security for the site camp, plant and material.

The health and safety requirements change from time to time. The *Contractor* to refer and comply to the Health and Safety Specification. It is the responsibility of the *Contractor* to meet the National Nuclear Regulator's (NNR) safety requirements and the latest health and safety requirements at all times.

#### **6.1.5 Environmental controls, fauna & flora, dealing with objects of historical interest**

The *Contractor* to appoint the Environmental Officer to ensure compliance to the EMP, EA and other environmental authorisations and specifications.

#### **6.1.6 Title to materials from demolition and excavation**

*Contractor* to dispose building rubble in accordance with the EMP. Steel, copper and all other high value materials will be disposed by the *Employer*.

#### **6.1.7 Cooperating with and obtaining acceptance of Others**

There may be multiple *Contractors*/Stakeholders on site, it is required from the *Contractor* to make his own arrangements and cooperate with all *Contractors*/stakeholders on site, in such a way that all activities are completed timeously.

#### **6.1.8 Publicity and progress photographs**

No taking of photographs is allowed unless prior approval has been obtained from the *Employer*.

#### **6.1.9 Contractor's Equipment**

Records are to be kept of Equipment on Site including whether it is owned or hired. This includes any scaffolding, rigs, heavy lifts and cranes.

The *Contractor* shall inform the Project Manager prior to the removal of any equipment during the contract period from the Working Areas.

Permission may be required for the removal of equipment from site, and the correct process must be followed.

#### **6.1.10 Equipment provided by the Employer**

None

#### **6.1.11 Site services and facilities**

The *Contractor* shall conduct site inspection and establish what facilities (i.e. power supply, drinking & construction water, waste disposal, telecommunications, ablutions, fire protection, lighting) are required or necessary for providing the *Works* and plan accordingly.

*Contractor* shall provide everything else necessary for providing the *Works*

#### **6.1.12 Facilities provided by the Contractor**

*Contractor* shall provide all facilities necessary for providing the *Works*

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The *Contractor* is to provide the following items to facilitate the *Employer's* site *Supervisors* and project administration team within four weeks of contract award:

#### FACILITIES FOR *EMPLOYER*

- a) Establishment of *Employer* facilities on site i.e. Site office, sheds, toilets including plumbing, electricity, air conditioning, internet connections, copying and printing facilities etc.
- b) Portable water and toilet facilities for sole use of *Employer's* Representatives.

#### FACILITIES FOR THE *CONTRACTOR*

- c) Establishment of facilities on site i.e. Site office, sheds, toilets including plumbing and electricity, including internet connections, copying and printing facilities etc.
- d) Staff accommodation (not inside Koeberg NPS)
- e) Access to site & permits
- f) Establishment of equipment, tools and plant
- g) Allow the sum for hiring of standby generator including transport to site, working on site, diesel fuel and removing from site at contract completion.
- h) Name boards
- i) Dealing with water during construction
- j) Removal of the site Establishment

The *Contractor* shall negotiate with landowners for the erection of any construction camp(s) and accommodation for his personnel and ensuring compliance with all by-laws and requirements of the relevant authorities after contract award. All necessary services - water, electricity, sewerage, ablution facilities, telephones, etc. are to be provided by the *Contractor* to suit his needs.

All evidence of construction camp(s), batching plants, etc. are to be removed upon completion, and such areas rehabilitated to the satisfaction of the landowner and the *Supervisor*.

The *Contractor* shall provide sanitary amenities, first aid and firefighting facilities as required by the Occupational Health and Safety Act.

The *Contractor* keeps records of the following and submits copies of these records to the *Supervisor* weekly:

- Number of personnel by category and/or trade on site on a daily basis.
- Detailed list of equipment by category on site on a daily basis with an indication of its working condition i.e. working order, under repair, working but standing idle etc.
- A site diary is to be kept by the *Contractor* in which all events are recorded. Records of events that could give rise to Compensation Events are to be kept up to date for inspection by the *Supervisor* and/or *Project Manager* at all times.

#### **6.1.13 Existing premises, inspection of adjoining properties and checking work of Others**

Refer to Construction Environmental Management Plan and Site Information.

*Contractor* to do ground penetrating radar scan or latest appropriate equipment to establish underlying services.

Records of the site conditions before commencing construction and after rehabilitation are to be signed by all affected parties.

*Contractor* to plan for inspection of works where necessary prior to commissioning or connecting to the works.

#### **6.1.14 Survey control and setting out of the works**

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*Contractor* to construct GIS scope as per the approved designs including surveying and setting out of the works. The construction of the GIS scope and associated works must be within the approved perimeter as per the EA.

#### **6.1.15 Excavations and associated water control.**

The *Contractor* is required to control water resulting from deep excavation as per the requirements of the Health and Safety specification, EA, EMP and the SANS standards.

#### **6.1.16 Underground services, other existing services, cable and pipe trenches and covers**

*Contractor* is required to perform underground scanning using an effective modern scanning method to locate unknown underlying services, upon discovering underground services which requires to be relocated the *Contractor* shall inform the *Employer's Supervisor*. The *Contractor* to communicate any damaged services to the *Employer's Supervisor* and to confirm materials to be used for repairs.

The *Contractor* is responsible for the repairs of any damaged underground services (both known and unknown). Any damaged equipment is to be immediately repaired upon receiving approval from the *Employer's Project Manager* or Site Supervisor.

#### **6.1.17 Control of noise, dust, water, and waste**

The *Contractor* to comply to the Health and Safety specification and EMP.

The *Contractor* shall develop, implement and maintain an occupational hygiene management programme to ensure that the occupational hygiene stressors are identified, assessed, monitored and controlled.

#### **6.1.18 Sequences of construction or installation**

The *Contractor* to sequence the construction activities to align to the Koeberg 10 (ten) year outage plan.

*Contractor* to align the Gantry column construction with the proposed terminal tower positions.

#### **6.1.19 Giving notice of work to be covered up**

The *Contractor* to give inspection notice to the *Supervisor* regarding any works to be covered up prior to covering.

#### **6.1.20 Hook ups to existing works**

*Contractor* to develop commissioning procedures to be reviewed and accepted by the *Employer* prior to construction works requiring to be hooked up to existing services.

### **6.2 Completion, testing, commissioning and correction of Defects**

#### **6.2.1 Work to be done by the Completion Date**

On or before the Completion Date the *Contractor* shall have completed everything required to provide the Works as per the Works Information.

The *Project Manager* cannot certify Completion until all the work has been completed and is also free of Defects which would have, in his opinion, prevented the *Employer* from using the *works* and Others from doing their work.

#### **6.2.2 Use of the *works* before Completion has been certified**

The *Employer* will take over part of the works as per the commissioning sequence.

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### **6.2.3 Materials facilities and samples for tests and inspections**

In accordance with the *Employer's* specifications which are provided to the *Contractor*.

### **6.2.4 Commissioning**

The *Contractor* shall make provision for the commissioning as per the High-Level Scope Of Work – PTM&C Equipment For Weskusfleur Substation document no. 240-170000104 and in accordance with the *Employer's* specifications which are provided to the *Contractor*.

### **6.2.5 Start-up procedures required to put the *works* into operation**

The *Contractor* shall make provision for the two commissioning portions as per the High-Level Scope Of Work – PTM&C Equipment For Weskusfleur Substation document no. 240-170000104 and in accordance with the *Employer's* specifications which are provided to the *Contractor*.

### **6.2.6 Take over procedures**

Take-over of the *Works* shall be in accordance with NEC ECC3 hand over Certification and Projects Execution Hand over Document

The *Contractor* advises the *Supervisor* when the *Works* is available for final inspection and provides assistance if required.

All other work (rehabilitation, installation of retaining walls, groundworks, removal of temporary works, removal of construction camps, batching plants etc.) shall be completed within four (4) weeks of Take-Over.

The *Contractor* maintains the *Works* until the defects date with regard to making good erosion caused by his operations, shrinkages, imperfections, settlements, etc.

### **6.2.7 Access given by the *Employer* for correction of Defects**

Clause 43.4 of the NEC will apply and Koeberg access requirement

### **6.2.8 Performance tests after Completion**

In accordance with the *Employer's* specifications which are provided to the *Contractor*.

### **6.2.9 Training and technology transfer**

In accordance with the *Employer's* specifications which are provided to the *Contractor*.

### **6.2.10 Operational maintenance after Completion**

The supplier shall supply all maintenance personnel, tools, equipment and material (including any SF<sub>6</sub> gas required) at his own expense necessary to complete any maintenance or repair work during the guarantee period.

In accordance with the *Employer's* specifications which are provided to the *Contractor*.

## **7 Plant and Materials standards and workmanship**

### **7.1 Investigation, Survey and Site clearance**

*Contractor* is required to perform underground scanning using an effective modern scanning method to locate unknown underlying services and to carry out further investigation of existing facilities or of the Site before commencing preliminary and detailed/ final designs.



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The *Contractor* to take note of the space constraints within the Koeberg NPS and select the best possible route for the installations of underground services.

All construction to be conducted in accordance with the *Employer's* specifications, which are provided to the *Contractor*.

## 7.2 Building works

The *Contractor* shall be responsible for, but not limited to, the GIS building and the GIS building earthing system, provide the details with the tender documentation; In accordance with the *Employer's* specifications which are provided to the *Contractor* and SANS standards.

## 7.3 Civil engineering and structural works

In accordance with the *Employer's* specifications which are provided to the *Contractor* and SANS standards.

## 7.4 Electrical & mechanical engineering works

In accordance with the *Employer's* specifications which are provided to the *Contractor*.

## 7.5 Process control and IT works

In accordance with the *Employer's* specifications which are provided to the *Contractor*.

## 7.6 Other

When planning for outage *Works* related to the station transformers (installation and commissioning of the 6.6kV and 132kV cable) should not coincide with the Koeberg unit 1 & 2 outages.

Prior to digging or crossing of existing roads the *Contractor* to notify the *Employer* to obtain the required permits and work procedures.

# 8 List of drawings

## 8.1 Drawings issued by the *Employer*

This is the list of drawings issued by the *Employer* at or before the Contract Date and which apply to this contract.

Note:

- Some drawings may contain both Works Information and Site Information.
- The list contained in this document may not be deemed complete. The *Contractor* is encouraged to consult all the technical documents supplied in the tender pack and may request for additional documents for clarification if required.

Drawing number	Rev	Title
0.54/534	24	Koeberg Station Electric Diagram

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WKoe11P01-SE-D6	3	Weskusfleur Station Electric Diagram (Detail design)
WKoe11P01-SE-D7 sheet 1	4	Weskusfleur Key Plan (Detail design)
WKoe11P01-SE-D7 sheet 1	4	Weskusfleur Key Plan (Detail design)
WKoe11P01-SE-D14	2	Weskusfleur Fence and Yard stone layout
WKoe11P01-SE-D38	0	Weskusfleur Storage Yard General Arrangement and Setting out
WKoe11P01-SE-D41 sheet 1	1	Weskusfleur 400/132kV GIS Station Terrace Layout and Details
WKoe11P01-SE-D42 sheet 1	1	Weskusfleur 400/132kV GIS Station Access Road Layout and Details
WKoe11P01-SE-D42 sheet 2	0	Weskusfleur 400/132kV GIS Station Longitudinal Section and Details
WKoe11P01-SE-D42 sheet 3	0	Weskusfleur 400/132kV GIS Station Temporary Construction Road Details
WKoe11P01-SE-D43	1	Weskusfleur Storm water Drainage and Fire Protection
WKoe11P01-SE-D44 sheet 1	1	Weskusfleur 400/132/22kV 250MVA Transformer 11 Plinth Details
WKoe11P01-SE-D44 sheet 2	1	Weskusfleur 400/132/22kV 250MVA Transformer 12 Plinth Details
WKoe11P01-SE-D46 sheet 1	0	Weskusfleur Security Lighting Layout
WKoe11P01-SE-D46 sheet 2	0	Weskusfleur Security Lighting SLDB1 & SLDB2 400/230V AC Schematic and Cable Block Diagram
WKoe11P01-SE-D46 sheet 3	0	Weskusfleur Access Control Building Electrical Installation and Schematic Diagram
WKoe11P01-SE-D50	0	Weskusfleur Workshop Building Plan, Elevation, Section and Details
WKoe11P01-SE-D52	0	Weskusfleur Maintenance Workshop Lighting and Electrical Installation Layout
WKoe11P01-SE-D54 sheet 1	0	Weskusfleur Gen 1 GIL to Cable Connection Layout and Details Option-1B
WKoe11P01-SE-D54 sheet 2	0	Weskusfleur Gen 1 GIL to Cable Connection Layout and Details Option-1C
WKoe11P01-SE-D55 sheet 1	0	Weskusfleur Gen 1 GIL to Cable Connection Layout and Details Option-1A
WKoe11P01-SE-D56 sheet 1	0	Weskusfleur Gen 1 and Gen 2 to Cable Connection Layout and Details Option-2A
WKoe11P01-SE-D56 sheet 2	0	Weskusfleur Gen 1 and Gen 2 to Cable Connection Layout and Details Option-2B
WKoe11P01-SE-D56 sheet 3	0	Weskusfleur Gen 1 and Gen 2 to Cable Connection Layout and Details Option-2C
WKoe11P01-SE-D57 sheet 1	0	Weskusfleur General Layout of Culverts Option 1
WKoe11P01-SE-D57 sheet 2	0	Weskusfleur General Layout of Culverts Option 2
WKoe11P01-SE-D59	0	Weskusfleur Consumable Store Building Plan, Elevation, Section and Details
WKoe11P01-SE-D60	0	Weskusfleur Oil Dam Submersible Pump Electrical installation
WKoe11P01-SE-D61	0	Weskusfleur Workshop Electrical installation and Schematic Diagram

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WKoe11P01-SE-D62	0	Weskusfleur IBR Cladded Store Electrical Installation Layout
WKoe11P01-SE-D63	0	Weskusfleur Consumable Store Electrical installation Layout
WKoe11P01-SE-D65	0	Weskusfleur Scan Area

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## **C3.2 *CONTRACTOR'S* WORKS INFORMATION**

This section of the Works Information will always be contract specific depending on the nature of the *works*. It is most likely to be required for design and construct contracts where the tendering *Contractor* will have proposed specifications and schedules for items of Plant and Materials and workmanship, which once accepted by the *Employer* prior to award of contract now become obligations of the *Contractor* per core clause 20.1.

Typical subheadings could be

- a) *Contractor's* design
- b) Plant and Materials specifications and schedules
- c) Other

This section could also be compiled as a separate file.

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