NEC3 Engineering & Construction Contract

Between **ESKOM HOLDINGS SOC Ltd**
(Reg No. 2002/015527/30)

and **[Insert at award stage]**
(Reg No. _____)

for **excitation transformers replacement at Koeberg Nuclear Power Station (KNPS)**

Contents:		**No of pages**
Part C1	**Agreements & Contract Data**	**[●]**
Part C2	**Pricing Data**	**[●]**
Part C3	**Scope of Work**	**[●]**
Part C4	**Site Information**	**[●]**

CONTRACT No. **[Insert at award stage]**

KBG2056

Eskom
Shandré Brown
Procurement Quality Engineering

2021-09-14

Q2/L3 Service

Part C1: Agreements & Contract Data

Contents:

C1.1 Form of Offer & Acceptance

Offer

The *Employer*, identified in the Acceptance signature block, has solicited offers to enter into a contract for the procurement of:

Excitation transformers replacement at Koeberg Nuclear Power Station (KNPS)

The tenderer, identified in the Offer signature block, has examined the documents listed in the Tender Data and addenda thereto and by submitting this Offer has accepted the Conditions of Tender.

By the representative of the tenderer, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance the tenderer offers to perform all of the obligations and liabilities of the *Contractor* under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the *conditions of contract* identified in the Contract Data.

Options A	The offered total of the Prices exclusive of VAT is	**R [●]**
	Sub total	**R [●]**
	Value Added Tax @ 15% is	**R [●]**
	The offered total of the amount due inclusive of VAT is[1]	**R [●]**
	(in words) **[●]**	

This Offer may be accepted by the *Employer* by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document including the Schedule of Deviations (if any) to the tenderer before the end of the period of validity stated in the Tender Data, or other period as agreed, whereupon the tenderer becomes the party named as the *Contractor* in the *conditions of contract* identified in the Contract Data.

Signature(s) .....

Name(s) .....

Capacity .....

For the tenderer: .....

(Insert name and address of organisation)

Name & signature of witness ..... Date .....

Tenderer's CIDB registration number (if applicable) .....

[1] This total is required by the *Employer* for budgeting purposes only. Actual amounts due will be assessed in terms of the *conditions of contract*.

Acceptance

By signing this part of this Form of Offer and Acceptance, the *Employer* identified below accepts the tenderer's Offer. In consideration thereof, the *Employer* shall pay the *Contractor* the amount due in accordance with the *conditions of contract* identified in the Contract Data. Acceptance of the tenderer's Offer shall form an agreement between the *Employer* and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

Part C1	Agreements and Contract Data, (which includes this Form of Offer and Acceptance)
Part C2	Pricing Data
Part C3	Scope of Work: Works Information
Part C4	Site Information

and drawings and documents (or parts thereof), which may be incorporated by reference into the above listed Parts.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Returnable Schedules as well as any changes to the terms of the Offer agreed by the tenderer and the *Employer* during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Form of Offer and Acceptance. No amendments to or deviations from said documents are valid unless contained in this Schedule.

The tenderer shall within two weeks of receiving a completed copy of this agreement, including the Schedule of Deviations (if any), contact the *Employer*'s agent (whose details are given in the Contract Data) to arrange the delivery of any securities, bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the *conditions of contract* identified in the Contract Data at, or just after, the date this agreement comes into effect. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

Notwithstanding anything contained herein, this agreement comes into effect on the date when the tenderer receives one fully completed original copy signed between them of this document, including the Schedule of Deviations (if any).

Unless the tenderer (now *Contractor*) within five working days of the date of such receipt notifies the *Employer* in writing of any reason why he cannot accept the contents of this agreement, this agreement shall constitute a binding contract between the Parties.

Signature(s)

Name(s)	**Frikkie Ellis**	
Capacity	**Senior Manager Nuclear Projects (Acting)**	
for the *Employer*	**Eskom Holdings SOC Limited, Koeberg Nuclear Power Station, R27 off West Coast Road, Melkbosstrand, Republic of South Africa, 7441**	

Name & signature of witness

Date

Note: If a tenderer wishes to submit alternative tenders, use another copy of this Form of Offer and Acceptance.

Schedule of Deviations to be completed by the *Employer* prior to contract award

Note:

1. This part of the Offer & Acceptance would not be required if the contract has been developed by negotiation between the Parties and is not the result of a process of competitive tendering.
2. The extent of deviations from the tender documents issued by the *Employer* prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.
3. A tenderer's covering letter must not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid be the subject of agreement reached during the process of Offer and Acceptance, the outcome of such agreement shall be recorded here and the final draft of the contract documents shall be revised to incorporate the effect of it.

No.	Subject	Details
1	**[●]**	**[●]**
2	**[●]**	**[●]**
3	**[●]**	**[●]**
4	**[●]**	**[●]**
5	**[●]**	**[●]**
6	**[●]**	**[●]**
7	**[●]**	**[●]**

By the duly authorised representatives signing this Schedule of Deviations below, the *Employer* and the tenderer agree to and accept this Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Tender Schedules, as well as any confirmation, clarification, or changes to the terms of the Offer agreed by the tenderer and the *Employer* during this process of Offer and Acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the tenderer of a completed signed copy of this Form shall have any meaning or effect in the contract between the parties arising from this Agreement.

	For the tenderer:	**For the *Employer***
Signature	.....	.....
Name	.....	**Frikkie Ellis**
Capacity	.....	**Senior Manager Nuclear Projects (Acting)**
On behalf of	..... *(Insert name and address of organisation)*	**Eskom Holdings SOC Limited** **Koeberg Nuclear Power Station** **R27, Off West Coast Road** **Melkbosstrand** **Republic of South Africa** **7441**
Name & signature of witness	.....	.....
Date	.....	.....

C1.2 ECC3 Contract Data

Part one - Data provided by the *Employer*

Clause	Statement	Data
1	**General**	
	The *conditions of contract* are the core clauses and the clauses for main Option	
		A: Priced contract with activity schedule
	dispute resolution Option	**W1: Dispute resolution procedure**
	and secondary Options	
		X1: Price adjustment for inflation
		X2 Changes in the law
		X5: Sectional Completion
		X7: Delay damages
		X16: Retention
		X18: Limitation of liability
		Z: Additional conditions of contract
	of the NEC3 Engineering and Construction Contract, June 2005 (ECC3) (with amendments June 2006)	
10.1	The *Employer* is	**Eskom Holdings SOC Ltd (reg no: 2002/015527/30), a state-owned company incorporated in terms of the company laws of the Republic of South Africa**
	Address	**Registered office at Megawatt Park, Maxwell Drive, Sandton, Johannesburg**
	Represented by:	**Mr Frikkie Ellis**
	Tel No.	**+27 21 550 5202**
10.1	The *Project Manager* is:	**Ms Charity Samutela**
	Address	**Eskom Holdings SOC Limited Koeberg Nuclear Power Station, R27 Off West Coast Road, Melkbosstrand, Republic of South Africa, 7441.**

	Tel	**+27 21 522 3458**		
10.1	The *Supervisor* is:	**Mr Xolisa Mnyanda**		
	Address	**Eskom Holdings SOC Limited R27 Off West Coast Road, Melkbosstrand, Republic of South Africa, 7441.**		
	Tel No.	**+27 21 522 3547**		
11.2(13)	The *works* are	**excitation transformers replacement at Koeberg Nuclear Power Station (KNPS)**		
11.2(14)	The following matters will be included in the Risk Register	• **matters notified under early warning; and** • **decisions resulting from risk reduction meetings**		
11.2(15)	The *boundaries of the site* are	**the areas associated with the scope of work to be performed, within the boundaries of Koeberg Nuclear Power Station**		
11.2(16)	The Site Information is in	**Part 4: Site Information**		
11.2(19)	The Works Information is in	**Part 3: Scope of Work and all documents and drawings to which it makes reference.**		
12.2	The *law of the contract* is the law of	**the Republic of South Africa**		
13.1	The *language of this contract* is	**English**		
13.3	The *period for reply* is	• **two (2) weeks during non-outage periods** • **twenty-four (24) hours during outage** • **periods for review as stated in the Works Information.**		
2	**The *Contractor's* main responsibilities**	**data required by this section of the core clauses is provided by the *Contractor* in Part 2 and terms in italics used in this section are identified elsewhere in this Contract Data.**		
3	**Time**			
11.2(3)	The *completion date* for the whole of the *works* is	**30 June 2025**		
11.2(9)	The *key date*s and the *condition*s to be met are:	***Condition* to be met**		***key date***
		1	**Submission of acceptable scheme design to the *Project Manager* for acceptance and authorisation by the *Employer***	**As per first Accepted Programme**
		2	**Submission of acceptable detailed design to the *Project Manager* for acceptance and authorisation by the *Employer***	**As per first Accepted Programme**
		3	**Submission of acceptable Site**	**As per first**

			Work Package (SWP) to the *Supervisor* for acceptance	**Accepted Programme**
		4	***Contractor* to perform Factory Acceptance Testing (FAT) with the *Employer* and *Supervisor's* representatives**	**As per first Accepted Programme**
		5	***Contractor* to deliver new transformers to Site**	**As per first Accepted Programme**
		6	***Contractor* to perform Site Acceptance Testing (SAT) with the *Employer and Supervisor's* representatives**	**As per first Accepted Programme**
		7	**Submission of acceptable Unit 1 end of intervention report for acceptance by the *Project Manager* and authorisation by the *Employer***	**As per first Accepted Programme**
		8	**Submission of acceptable Unit 2 end of intervention report for acceptance by the *Project Manager* and authorisation by the *Employer***	**As per first Accepted Programme**
30.1	The *access dates* are:	**Part of the Site**		**Date**
		1	**The Site**	**Contract Date, following completion of the *Employer's* FFD process.**
		2	**Access to available documentation**	***starting date***
		3	**Access to Unit 1**	**As per Koeberg latest approved production plan rev 72**
		4	**Access to Unit 2**	**As per Koeberg latest approved production plan rev 72**
31.1	The *Contractor* is to submit a first programme for acceptance within	**four (4) weeks of the Contract Date. The programme must be compliant to NEC3 ECC Clause 31.2.**		
31.2	The *starting date* is	**01 February 2022**		
32.2	The *Contractor* submits revised programmes at intervals no longer than	**non-outage: monthly, before the *assessment date*. outage period: one (1) day**		
35.1	The *Employer* is not willing to take over the *works* before the Completion Date.			

4	**Testing and Defects**		
42.2	The *defects date* is	**fifty-two (52) weeks after Completion of the whole of the *works*.**	
43.2	The *defect correction period* is	**one (1) week of date of notification. If the Defect is of such a nature that it cannot reasonably be repaired in one week, the *Contractor* promptly notifies the *Project Manager* and submits a plan for correcting the Defect. The *Contractor* and *Project Manager* agree on a revised *defect correction period.* If no agreement is reached within 1 (one) week of the notification of the Defect, Core Clause 45.1 may be invoked.**	
	except that the *defect correction period* for	**the period during the installation outage after Completion of the Section of the *works*, where the *Contractor* is still on Site is two (2) days**	
	and the *defect correction period* for	**the period during the next scheduled refuelling outage is determined by the nature of the Defect and shall be such period as is reasonable in all the circumstances. The defective part will be inspected by the *Contractor* and a decision made as to whether it can be repaired, or a replacement part ordered. The *Contractor* is responsible for providing working access to the Defect, including disassembly, opening and closing of plant and equipment and *works*, except if it was not in the scope of this contract**	
5	**Payment**		
50.1	The *assessment interval* is	**between the 24th and 25th day of each successive month**	
50.2	The *expenses* stated by the *Employer* for Compensation Events are	**Item**	**Amount**
		Accommodation	**Domestic hotel accommodation may not exceed R1 400 (one thousand four hundred rand) inclusive of VAT, per night per person (including dinner, breakfast, and parking).**
		Flights	**at cost with the following stipulations:** • **Local flights –travel on economy class** • **International flights –travel on economy class** **No business or first-class travel is allowed**
		Car Hire	**at cost with the following stipulations:** **Group B or an equivalent class.** **Group B vehicles contain the following specifications:** • **5 Doors, Manual** • **Air Conditioning** • **Radio/CD**

			• **Power Steering** • **Airbags, Central Locking** **ABS**
		Airport parking charges, toll fees and taxis	**at cost**
		The above is in terms of: • **Government Gazette No.37042 dated 15 November 2013,** • **Treasury Regulations (published under Government Notice R225 of 15 March 2005, as amended)** **Eskom's Directive for the Implementation of the National Treasury Cost Containment Instruction and Government Gazette (Ref: 240-78635659.**	
51.1	The *currency of this contract* is the	**South African Rand.**	
51.2	The period within which payments are made is	**four (4) weeks after receipt of a valid TAX invoice.**	
51.4	The *interest rate* is	**zero percent above the publicly quoted prime rate of interest (calculated on a 365-day year) charged from time to time by the Standard Bank of South Africa Limited (as certified, in the event of any dispute, by any manager of such bank, whose appointment it shall not be necessary to prove) for amounts due in Rands**	
6	**Compensation events**		
60.1(13)	The place where weather is to be recorded is:	**Koeberg Operating Unit meteorological station.**	
	The *weather measurements* to be recorded for each calendar month are,	**the cumulative rainfall (mm)**	
		the number of days with rainfall more than 10 mm	
		the number of days with minimum air temperature less than 0 degrees Celsius	
		the number of days with snow lying at 09:00 hours South African Time	
		and these measurements:	
	The *weather measurements* are supplied by	**Koeberg Operating Unit meteorological station.**	
	The *weather data* are the records of past *weather measurements* for each calendar month which were recorded at:	**Koeberg Operating Unit meteorological station.**	
	and which are available from:	**the South African Weather Bureau and included in Annexure A to this Contract Data provided by the *Employer***	
60.1(13)	Assumed values for the ten-year return *weather data* for each *weather measurement* for each	**as stated in Annexure A to this Contract Data provided by the *Employer*.**	

	calendar month are:	
7	**Title**	**there is no reference to Contract Data in this section of the core clauses and terms in italics used in this section are identified elsewhere in this Contract Data.**
8	**Risks and insurance**	
80.1	These are additional *Employer*'s risks	• **death of or personal injury to the *Employer's* personnel**
		• **loss of or damage to the *Employer's* existing property in excess of limits stated in Clause X18.2**
84.1	The *Employer* provides these insurances from the Insurance Table	• **the *Employer* shall arrange and maintain at its expense, Nuclear Liability Insurance policy and a Nuclear Property Damage Insurance policy which shall provide insurance cover to the *Contractor* and its Sub-*Contractor*s, agents or representatives and the personnel of any of them as an insured party in accordance with the National Nuclear Regulatory 49 Act of 1999 as amended.** **Such insurance shall not be affected by Completion or termination of this Contract and shall apply regardless of negligence of whatsoever degree on the part of the aforesaid *Contractor*, Subcontractor, agents or representatives and the personnel of any of them.** **The *Employer* waives their rights to recourse against the *Contractor* and its insurers for any nuclear damage including in respect of the amount of the deductible where applicable.** **The *Employer* shall arrange and maintain with the *Contractor* and its Subcontractors as an insured party a Nuclear Liability Insurance policy.** **The *Employer* furthermore agrees to hold harmless and indemnify the *Contractor*, its Subcontractors, agents or representatives and the personnel of any of them, and shall cause its insurers to waive any right of subrogation or action against any liability, loss, damage or injury caused by a nuclear accident, subject to the provisions of the National Nuclear Regulatory Act 49 of 1999; except to the extent that such liability, loss, damage or injury arises from the wilful misconduct of the *Contractor* and its employees.** • **Loss of or damage to the *Employer's* Nuclear Property for the replacement cost, including the cost incurred in relation to the replacement of any Plant and Materials provided by the *Employer* up to a limit the *Employer* deems to be necessary, and which is effective from the starting date to the completion date or the termination date (whichever the earlier) of the Contract, and annually renewable.**

<table>
<tr><td></td><td></td><td>In the event damage to the Employer's property was occasioned by the negligence of the Contractor the Contractor shall be liable for the R25 Million each and every loss deductible. Per above, for loss of or damage arising out of a nuclear event, the amount of the deductible shall be Nil.</td></tr>
<tr><td>84.1</td><td>The Employer provides these insurances from the Insurance Table</td><td>INSURANCE TABLE
<table>
<tr><th>Insurance against</th><th>Minimum amount of cover or minimum limit of indemnity</th></tr>
<tr><td>Assets All Risk</td><td>As per the insurance policy document.</td></tr>
<tr><td>Project insurance</td><td>As per the insurance policy document.</td></tr>
<tr><td>Nuclear Public Liability</td><td>As per the insurance policy document.</td></tr>
<tr><td>Nuclear Material Damage and Business Interruption</td><td>As per the insurance policy document.</td></tr>
<tr><td>Nuclear Material Damage Terrorism</td><td>As per the insurance policy document.</td></tr>
<tr><td>General and Public Liability</td><td>As per the insurance policy document.</td></tr>
<tr><td>Environmental Liability</td><td>As per the insurance policy document.</td></tr>
<tr><td>Transportation (Marine)</td><td>As per the insurance policy document.</td></tr>
<tr><td>Marine Small Craft Liability</td><td>As per the insurance policy document.</td></tr>
<tr><td>Motor Fleet and Mobile Plant</td><td>As per the insurance policy document.</td></tr>
<tr><td>Cyber Liability</td><td>As per the insurance policy document.</td></tr>
</table></td></tr>
<tr><td>84.1</td><td>The Employer provides these additional insurances</td><td>INSURANCE TABLE
<table>
<tr><th>Insurance against</th><th>Minimum amount of cover or minimum limit of indemnity</th></tr>
<tr><td>Loss of or damage caused by the Contractor to the Employer's property</td><td>The replacement cost where not covered by the Employer's insurance.

The Employer's policy deductible as at contract date, where covered by the Employer's insurance.</td></tr>
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<tr><td></td><td></td><td>
<table>
<tr><td>Loss of or damage to Plant and Materials</td><td>The replacement cost where not covered by the Employer's insurance.

The Employer's policy deductible as at contract date, where covered by the Employer's insurance.</td></tr>
<tr><td>Loss of or damage to Equipment</td><td>The replacement cost where not covered by the Employer's insurance.

The Employer's policy deductible as at contract date, where covered by the Employer's insurance.</td></tr>
<tr><td>The Contractor's liability for loss of or damage to property (except the Employer's property, Plant and Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the Contractor) arising from or in connection with the Contractor's Providing the Service</td><td><u>Loss of or damage to property</u>
The replacement cost

<u>Bodily injury to or death of a person</u>
The amount required by the applicable law.</td></tr>
<tr><td>Liability for death of or bodily injury to employees of the Contractor arising out of and in the course of their employment in connection with this contract</td><td>The amount required by the applicable law</td></tr>
</table>
</td></tr>
<tr><td>84.1</td><td>The Contractor provides these additional insurances:</td><td>whatever the Contractor deems necessary in addition to that provided by the Employer.</td></tr>
<tr><td>84.2</td><td>The minimum limit of indemnity for insurance in respect of loss of or damage to property (except the works, Plant, Materials and Equipment) and liability for bodily injury to or death of a person (not an employee of the Contractor) caused by activity in connection with this contract for any one event is</td><td>whatever the Contractor deems necessary in addition to that provided by the Employer. Notwithstanding anything stated to contrary in the Employer's insurances, the insurance procured by the Contractor will be required to indemnify the Employer for loss of or damage to the Employer's property in respect of the Employer's insurance deductibles in the amount of minimum of R25 M.</td></tr>
<tr><td>84.2</td><td>The minimum limit of indemnity for insurance in respect of death of or bodily injury to employees of the Contractor arising out of and in the course of their employment in connection with this contract for any one event is</td><td>as prescribed by the Compensation for Occupational Injuries and Diseases Act No. 130 of 1993 and the Contractor's common law liability for people falling outside the scope of the Act with a limit of Indemnity of not less than R500 000 (Five hundred thousand Rands).</td></tr>
</table>

9	**Termination**	**there is no reference to Contract Data in this section of the core clauses and terms in italics used in this section are identified elsewhere in this Contract Data.**
10	**Data for main Option clause**	
A	**Priced contract with activity schedule**	**there is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.**
11	**Data for Option W1**	
W1.1	The *Adjudicator* is	**the referring Party selects 2 (two) persons from the panel of NEC Adjudicators set up by the ICE-SA Division (or its successor body) of the South African Institution (see www.ice-sa.org.za) and whose availability he has confirmed to act as the Adjudicator. The other Party selects 1 (one) of the 2 (two) nominees to be the Adjudicator within 4 (four) days, failing which the person chosen by the first party will be the Adjudicator. The parties appoint the selected Adjudicator under the NEC3 Adjudicator's Contract. If the Parties do not agree on an Adjudicator, the Adjudicator will be appointed by the Arbitration Foundation of Southern Africa (AFSA).).**
W1.2(3)	The *Adjudicator nominating body* is:	**the Chairman of ICE-SA a joint Division of the South African Institution of Civil Engineering and the London Institution of Civil Engineers. (See www.ice-sa.org.za) or its successor body.**
W1.4(2)	The *tribunal* is:	**arbitration.**
W1.4(5)	The *arbitration procedure* is	**the latest edition of Rules for the Conduct of Arbitrations published by The Association of Arbitrators (Southern Africa) or its successor body.**
	The place where arbitration is to be held is	**Cape Town, South Africa**
	The person or organisation who will choose an arbitrator - if the Parties cannot agree a choice or - if the arbitration procedure does not state who selects an arbitrator, is	**the Chairman for the time being or his nominee of the Association of Arbitrators (Southern Africa) or its successor body.**
12	**Data for secondary Option clauses**	
X1	**Price adjustment for inflation**	**price adjustment will only be applicable after the first 12 months of the contract period**
X1.1(a)	The *base date* for indices is	**August 2021**
X1.1(c)	The proportions used	

	to calculate the Price Adjustment Factor are:	**proportion**	**linked to index for**	**Index prepared by**
		CPA Formula A LABOUR		
		Proportion	**Linked to index for**	**Index prepared by**
		85%	**People**	**SEIFSA – http://www.seifsa.co.za/ Table C3 (A) All hourly paid employees**
		15%	**Fixed**	
		100%	**Total**	
		CPA Formula B TRANSFORMERS		
		Proportion	**Linked to index for**	**Index prepared by**
		85%	**Material**	**SEIFSA – http://www.seifsa.co.za/ Table M-6 Construction input price index (CIPI): material purchases for whole industry, Construction electric motors, generators, or transformers.**
		15%	**Fixed**	
		100%	**Total**	
		CPA Formula C OTHER		
		85%	**Other**	**SEIFSA – http://www.seifsa.co.za/ Table D-2 Consumer Price Index (CPI) or StatsSA Table B1 CPI headline index numbers**
		15%	**Fixed**	
		100%	**Total**	
X1.4	Price adjustment	**price adjustment for inflation is not applicable to a change in the Price for Work Done to Date since the last assessment, for a change in the Price for Work Done to Date since the last assessment after the Completion Date for which delay damages in terms of Option X7 are applicable.**		
X2	**Changes in the law**	**there is no reference to Contract Data in this Option and terms in italics are identified elsewhere in this Contract Data.**		
X5	**Sectional Completion**			
X5.1	The *completion date*			

	for each *section* of the *works* is:	***Section***	**Description**	***Completion date***
		1	**Unit 1 Implementation (Outage 127)**	**As per first Accepted Programme**
		2	**Unit 2 Implementation (Outage 227)**	**As per first Accepted Programme**
	Remainder of the *works*			**As per first Accepted Programme**
X5 & X7	**Sectional Completion and delay damages used together**			
X7.1 X5.1	Delay damages for late Completion of the *section*s of the *works* are:	***section***	**Description**	**Amount per day**
			Unit 1 Implementation (Outage 127)	**R45 000.00**
			Unit 2 Implementation (Outage 227)	**R45 000.00**
	Remainder of the *works*			**R22 500.00**
	The total delay damages payable by the *Contractor* does not exceed:	**20% of the total of the Prices**		
X16	**Retention**			
X16.1	The *retention free amount* is	**0% of the Prices at the Contract Date**		
	The *retention percentage* is	**10% of the Prices at the Contract Date**		
X18	**Limitation of liability**			
X18.1	The *Contractor*'s liability to the *Employer* for indirect or consequential loss is limited to:	**R0.0 (zero Rand)**		
X18.2	For any one event, the *Contractor*'s liability to the *Employer* for loss of or damage to the *Employer*'s property is limited to:	**the amount of the deductibles relevant to the event described in the *Employer's* Nuclear Property damage insurance policy. The value of the insurance policy deductible is a minimum R25 M. The *Contractor* is liable for the above deductible for the *Employer*'s property which is damaged. In the event that the loss result in a nuclear "Peril" the liability amount will be Nil.**		
X18.3	The *Contractor*'s liability for Defects due to his design which are not listed on the	**the greater of** • **the total of the Prices at the Contract Date and** • **the amounts excluded and unrecoverable from the *Employer's***		

	Defects Certificate is limited to	**assets policy for correcting the Defect (other than the resulting physical damage which is not excluded) plus R25 M first amount payable in terms of the *Employer's* assets policy**
X18.4	The *Contractor*'s total liability to the *Employer* for all matters arising under or in connection with this contract, other than excluded matters, is limited to:	**the total of the Prices other than for the additional excluded matters.** **The *Contractor's* total liability for the additional excluded matters is not limited.** **The additional excluded matters are amounts for which the *Contractor* is liable under this contract for** • **Defects due to his design which arise before the Defects Certificate is issued,** • **Defects due to manufacture and fabrication outside the Site,** • **loss of or damage to property (other than the *works*, Plant and Materials),** • **death of or injury to a person and** • **infringement of an intellectual property right.**
X18.5	The *end of liability date* is	• **7 (seven) years after the *defects date* for latent Defects and** • **the date on which the liability in question prescribes in accordance with the Prescription Act No. 68 of 1969 (as amended or in terms of any replacement legislation) for any other matter.** • **A latent Defect is a Defect which would not have been discovered on reasonable inspection by the *Employer* or the *Supervisor* before the *defects date*, without requiring any inspection not ordinarily carried out by the *Employer* or the *Supervisor* during that period.** • **If the *Employer* or the *Supervisor* do undertake any inspection over and above the reasonable inspection, this does not place a greater responsibility on the *Employer* or the *Supervisor* to have discovered the Defect.**
Z	**The *Additional conditions of contract* are**	**Z1 to Z14 always apply.**
Z1	**Cession delegation and assignment**	
Z1.1	The *Contractor* does not cede, delegate or assign any of its rights or obligations to any person without the written consent of the *Employer.*	
Z1.2	Notwithstanding the above, the *Employer* may on written notice to the *Contractor* cede and delegate its rights and obligations under this contract to any of its subsidiaries or any of its present divisions or operations which may be converted into separate legal entities as a result of the restructuring of the Electricity Supply Industry.	
Z2	**Joint ventures**	
Z2.1	If the *Contractor* constitutes a joint venture, consortium, or other unincorporated grouping of two or more persons or organisations then these persons or organisations are deemed to be jointly	

	and severally liable to the *Employer* for the performance of this contract.
Z2.2	Unless already notified to the *Employer*, the persons or organisations notify the *Project Manager* within two weeks of the Contract Date of the key person who has the authority to bind the *Contractor* on their behalf.
Z2.3	The *Contractor* does not alter the composition of the joint venture, consortium, or other unincorporated grouping of two or more persons without the consent of the *Employer* having been given to the *Contractor* in writing.
Z3	**Change of Broad Based Black Economic Empowerment (B-BBEE) status**
Z3.1	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.
Z3.2	The *Contractor* is required to submit an updated verification certificate and necessary supporting 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*.
Z3.3	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.
Z3.4	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.
Z4	**Confidentiality**
Z4.1	The *Contractor* does not disclose or make any information arising from or in connection with this contract available to Others. This undertaking does not, however, apply to information which at the time of disclosure or thereafter, without default on the part of the *Contractor*, enters the public domain or to information which was already in the possession of the *Contractor* at the time of disclosure (evidenced by written records in existence at that time). Should the *Contractor* disclose information to Others in terms of clause 25.1, the *Contractor* ensures that the provisions of this clause are complied with by the recipient.
Z4.2	If the *Contractor* is uncertain about whether any such information is confidential, it is to be regarded as such until notified otherwise by the *Project Manager*.
Z4.3	In the event that the *Contractor* is, at any time, required by law to disclose any such information which is required to be kept confidential, the *Contractor*, to the extent permitted by law prior to disclosure, notifies the *Employer* so that an appropriate protection order and/or any other action can be taken, if possible, prior to any disclosure. In the event that such protective order is not, or cannot, be obtained, then the *Contractor* may disclose that portion of the information which it is required to be disclosed by law and uses reasonable efforts to obtain assurances that confidential treatment will be afforded to the information so disclosed.
Z4.4	The taking of images (whether photographs, video footage or otherwise) of the *works* or any portion thereof, in the course of Providing the Works and after Completion, requires the prior written consent of the *Project Manager*. All rights in and to all such images vests exclusively in the *Employer*.
Z4.5	The *Contractor* ensures that all his sub-*Contractor*s abide by the undertakings in this clause.

Z5	**Waiver and estoppel: Add to core clause 12.3:**
Z5.1	Any extension, concession, waiver or relaxation of any action stated in this contract by the Parties, the *Project Manager*, the *Supervisor*, or the *Adjudicator* does not constitute a waiver of rights and does not give rise to an estoppel unless the Parties agree otherwise and confirm such agreement in writing.
Z6	**Health, safety, and the environment: Add to core clause 27.4**
Z6.1	The *Contractor* undertakes to take all reasonable precautions to maintain the health and safety of persons in and about the execution of the *works*. Without limitation the *Contractor*: • accepts that the *Employer* may appoint him as the "Principal *Contractor*" (as defined and provided for under the Construction Regulations 2014 (promulgated under the Occupational Health & Safety Act 85 of 1993) ("the Construction Regulations") for the Site. • 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 *works*; and • undertakes, in and about the execution of the *works*, 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-*Contractor*s, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.
Z6.2	The *Contractor*, in and about the execution of the *works*, complies with all applicable environmental laws and regulations and rules, guidelines and procedures otherwise provided for under this contract and ensures that his Sub-*Contractor*s, employees and others under the *Contractor's* direction and control, likewise observe and comply with the foregoing.
Z7	**Provision of a Tax Invoice and interest. Add to core clause 51**
Z7.1	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 in accordance with the *Employer*'s procedures stated in the Works Information, showing the amount due for payment equal to that stated in the payment certificate.
Z7.2	If the *Contractor* does not provide a tax invoice in the form and by the time required by this contract, the time by when the *Employer* is to make a payment is extended by a period equal in time to the delayed submission of the correct tax invoice. Interest due by the *Employer* in terms of core clause 51.2 is then calculated from the delayed date by when payment is to be made.
Z7.3	The *Contractor* (if registered in South Africa in terms of the companies Act) is required to comply with the requirements of the Value Added Tax Act, no 89 of 1991 (as amended) and to include the *Employer*'s VAT number 4740101508 on each invoice he submits for payment.
Z8	**Notifying compensation events**
Z8.1	Delete from the last sentence in core clause 61.3, "unless the *Project Manager* should have notified the event to the *Contractor* but did not".
Z8.2	If the *Contractor* does not provide a tax invoice in the form and by the time required by this contract, the time by when the *Employer* is to make a payment is extended by a period equal in time to the delayed submission of the correct tax invoice. Interest due by the *Employer* in terms of core clause 51.2 is then calculated from the delayed date by when payment is to be made.
Z8.3	The *Contractor* (if registered in South Africa in terms of the companies Act) is required to comply

	with the requirements of the Value Added Tax Act, no 89 of 1991 (as amended) and to include the *Employer*'s VAT number 4740101508 on each invoice he submits for payment.
Z9	***Employer's* limitation of liability**
Z9.1	The *Employer's* liability to the *Contractor* for the *Contractor's* indirect or consequential loss is limited to R0.00 (zero Rand)
Z9.2	The *Contractor*'s entitlement under the indemnity in 83.1 is provided for in 60.1(14) and the *Employer*'s liability under the indemnity is limited.
Z10	**Termination: Add to core clause 91.1, at the second main bullet point, fourth sub-bullet point, after the words "against it":**
Z10.1	or had a business rescue order granted against it.
Z11	**Addition to secondary Option X7 Delay damages (if applicable in this contract)**
Z11.1	If the amount due for the *Contractor*'s payment of delay damages reaches the limits stated in this Contract Data for Option X7 or Options X5 and X7 used together, the *Employer* may terminate the *Contractor*'s obligation to Provide the Works using the same procedures and payment on termination as those applied for reasons R1 to R15 or R18 stated in the Termination Table.
Z12	**Ethics**
For the purposes of this Z-clause, the following definitions apply:	
Affected Party	means, as the context requires, any party, irrespective of whether it is the *Contractor* or a third party, such party's employees, agents, or Sub-*Contractor*s or Sub-*Contractor*'s employees, or any one or more of all of these parties' relatives or friends,
Coercive Action	means to harm or threaten to harm, directly or indirectly, an Affected Party or the property of an Affected Party, or to otherwise influence or attempt to influence an Affected Party to act unlawfully or illegally,
Collusive Action	means where two or more parties co-operate to achieve an unlawful or illegal purpose, including to influence an Affected Party to act unlawfully or illegally,
Committing Party	means, as the context requires, the *Contractor*, or any member thereof in the case of a joint venture, or its employees, agents, or Sub-*Contractor* or the Sub-*Contractor*'s employees,
Corrupt Action	means the offering, giving, taking, or soliciting, directly or indirectly, of a good or service to unlawfully or illegally influence the actions of an Affected Party,
Fraudulent Action	means any unlawfully or illegally intentional act or omission that misleads, or attempts to mislead, an Affected Party, in order to obtain a financial or other benefit or to avoid an obligation or incurring an obligation,
Obstructive Action	means a Committing Party unlawfully or illegally destroying, falsifying, altering or concealing information or making false statements to materially impede an investigation into allegations of Prohibited Action, and
Prohibited Action	means any one or more of a Coercive Action, Collusive Action Corrupt Action, Fraudulent Action or Obstructive Action.
Z12.1	A Committing Party may not take any Prohibited Action during the course of the procurement of

	this contract or in execution thereof.
Z12.2	The *Employer* may terminate the *Contractor*'s obligation to Provide the Services if a Committing Party has taken such Prohibited Action and the *Contractor* did not take timely and appropriate action to prevent or remedy the situation, without limiting any other rights or remedies the *Employer* has. It is not required that the Committing Party had to have been found guilty, in court or in any other similar process, of such Prohibited Action before the *Employer* can terminate the *Contractor*'s obligation to Provide the Services for this reason.
Z12.3	If the *Employer* terminates the *Contractor*'s obligation to Provide the Services for this reason, the amounts due on termination are those intended in core clauses 92.1 and 92.2.
Z12.4	A Committing Party co-operates fully with any investigation pursuant to alleged Prohibited Action. Where the *Employer* does not have a contractual bond with the Committing Party, the *Contractor* ensures that the Committing Party co-operates fully with an investigation.
Z13	**Communications**
Z13.1	Add to the end of the first sentence in core Clause 13.1: "excluding communication by a communications protocol allowing the interchange of short text messages between mobile telephone devices and a store-and-forward method of writing, sending, receiving and saving messages over the internet."
Z14	**Nuclear Liability**
Z14.1	The *Employer* is the operator of the Koeberg Nuclear Power Station (KNPS), a nuclear installation, as designated by the National Nuclear Regulator of the Republic of South Africa, and is the holder of a nuclear licence in respect of the KNPS.
Z14.2	The *Employer* is solely responsible for and indemnifies the *Contractor* or any other person against any and all liabilities which the *Contractor* or any person may incur arising out of or resulting from nuclear damage, as defined in Act 44 of 1999, save to the extent that any liabilities are incurred due to the unlawful intent of the *Contractor* or any other person or the presence of the *Contractor* or that person or any property of the *Contractor* or such person at or in the KNPS or on the KNPS site, without the permission of the *Employer* or of a person acting on behalf of the *Employer*.
Z14.3	Subject to clause Z14.4 below, the *Employer* waives all rights of recourse, arising from the aforesaid, save to the extent that any claims arise or liability is incurred due or attributable to the unlawful intent of the *Contractor* or any other person, or the presence of the *Contractor* or that person or any property of the *Contractor* or such person at or in the KNPS or on the KNPS site, without the permission of the *Employer* or of a person acting on behalf of the *Employer*.
Z14.4	The *Employer* does not waive its rights provided for in section 30 (7) of Act 44 of 1999, or any replacement section dealing with the same subject matter.
Z14.5	The protection afforded by the provisions hereof shall be in effect until the KNPS is decommissioned.

Annexure A: One-in-ten-year-return *weather data* obtained from SA Weather Bureau for [weather station]

If any one of these *weather measurements* recorded within a calendar month, before the Completion Date for the whole of the *works* and at the place stated in this Contract Data is shown to be more adverse than the amount stated below then the *Contractor* may notify a compensation event.

	Average Minimum Temperatures in Cape Town, South Africa (°C)	Average Maximum Temperature in Cape Town, South Africa (°C)	Cape Town Average Temperature (°C)	Average Sea Temp (°C)	Average Precipitation/ Rainfall (mm)	Wet Days (>0.1 mm)	Average Sunlight Hours/ Day	Relative Humidity (%)	Average Wind Speed in Cape Town (Beaufort)	Average Number of Days with Frost	
Weather in Cape Town in January	16	26	21	19	16	4	10.9	71	4	0	*Average Temperature in Cape Town in January*
Weather in Cape Town in February	16	26	21	18	15	4	10.4	73	4	0	*Average Temperature in Cape Town in February*
Weather in Cape Town in March	14	25	20	17	22	5	9.1	77.0	3	0	*Average Temperature in Cape Town in March*
Weather in Cape Town in April	12	22	17	17	51	8	6.9	80	3	0	*Average Temperature in Cape Town in April*
Weather in Cape Town in May	10	20	15	16	97	12	5.9	83	3	0	*Average Temperature in Cape Town in May*
Weather in Cape Town in June	8	18	13	16	108	13	6.0	83	3	0	*Average Temperature in Cape Town in June*
Weather in Cape Town in July	7	17	12	15	94	13	5.7	83	3	0	*Average Temperature in Cape Town in July*
Weather in Cape Town in August	8	18	13	15	85	12	6.4	82	3	0	*Average Temperature in Cape Town in August*
Weather in Cape Town in September	9	19	14	15	57	10	7.2	79	3	0	*Average Temperature in Cape Town in September*
Weather in Cape Town in October	11	21	16	16	40	9	8.9	76	4	0	*Average Temperature in Cape Town in October*
Weather in Cape	13	23	18	17	25	6	9.9	74	4	0	*Average Temperature*

Town in November											*in Cape Town in November*
Weather in Cape Town in December	14	25	19.5	18	19	5	11.1	71	4	0	*Average Temperature in Cape Town in December*

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

C1.2 Contract Data

Part two - Data provided by the *Contractor*

Notes to a tendering contractor:

1. Please read both the NEC3 Engineering and Construction Contract (April 2013) and the relevant parts of its Guidance Notes (ECC3-GN)[2] in order to understand the implications of this Data which the tenderer is required to complete. An example of the completed Data is provided on pages 156 to 158 of the ECC3 (April 2013) Guidance Notes.
2. The number of the clause which requires the data is shown in the left hand column for each statement however other clauses may also use the same data
3. Where a form field like this [ ] appears, data is required to be inserted relevant to the option selected. Click on the form field ***once*** and type in the data. Otherwise complete by hand and in ink.

Completion of the data in full, according to Options chosen, is essential to create a complete contract.

Clause	Statement	Data
10.1	The *Contractor* is (Name): Address Tel No. Fax No.	
11.2(8)	The *direct fee percentage* is **Note: *direct fee percentage* is applied to the Defined Cost of other work** The *subcontracted fee percentage* is **Note: *subcontracted fee percentage* is applied to the Defined Cost of subcontracted work**	**%** **%**
11.2(18)	The *working areas* are the Site and **Note: It is important that the *Contractor* fully describes the Working Areas to include not just the Site (the boundaries of which are defined by the *Employer* in Contract Data Part 1) but all areas where work connected with the contract is to be performed.** **With the exception of manufacture, fabrication and design work, which may be performed outside the working areas and paid as such, only the cost of resources working within the Working Areas qualify as Defined Cost for payment purposes. Hence the importance of fully describing the Working Areas.**	

[2] Available from Engineering Contract Strategies Tel 011 803 3008, Fax 011 803 3009 or see www.ecs.co.za

24.1	The *Contractor's* key persons are: **Please insert the name, job, responsibilities, qualifications and experience of its key people. Provide for additional key persons if necessary** **Note: Ensure that the key people listed have direct involvement with the contract (not CEO, MD, ED's of company or parent company unless the individual has an active role in the contract)** 1 Name: Job: Responsibilities: Qualifications: Experience: 2 Name: Job Responsibilities: Qualifications: Experience:	**CV's (and further key persons data including CVs) are appended to Tender Schedule entitled .**
11.2(3)	The *completion date* for the whole of the *works* is	
11.2(14)	The following matters will be included in the Risk Register **Note: The listing of risks on the Risk Register does not have the effect of fixing either of the parties with any particular risk.**	
11.2(19)	The Works Information for the *Contractor*'s design is in:	
31.1	The programme identified in the Contract Data is	
A	**Priced contract with activity schedule**	
11.2(20)	The *activity schedule* is in **Note: The Activity Schedule is used for payment purposes** **Please insert a reference to the list of activities prepared by the Tenderer which he expects to carry out in Providing the Works indicating a lump sum for each activity**	
11.2(30)	The tendered total of the Prices is	**(in figures)** **(in words), excluding VAT**

	Data for Schedules of Cost Components	*Note "SCC" means Schedule of Cost Components starting on page 60, and "SSCC" means Shorter Schedule of Cost Components starting on page 63 of ECC3 (April 2013).*		
A	**Priced contract with activity schedule**	**Data for the Shorter Schedule of Cost Components**		
41 in SSCC	The percentage for people overheads is: Note : • **Relevant People costs (such costs being those paid by the *Contractor*, including legally required and pension payments, for those people directly employed or paid by the *Contractor* according to the time worked and whose place of work is within the Working Areas) are determined by reference to the "Shorter Schedule of Cost Components". The Tenderer then applies to those costs as a percentage for people overheads.** • **This has the same purpose as the percentage for Working Area overheads but is for use only when the Shorter Schedule of Cost Components is used.** • **The Shorter Schedule is used with Options A for the purposes of assessing compensation events.**	**%**		
21 in SSCC	The published list of Equipment is the last edition of the list published by The percentage for adjustment for Equipment in the published list is	**Minus %**		
22 in SSCC	The rates of other Equipment are: **Note: For use with the Shorter Schedule of Cost Components**	**Equipment**	**Size or capacity**	**Rate**
61 in SSCC	The hourly rates for Defined Cost of design outside the Working Areas are **Note: Hourly rates are estimated 'cost to company of the employee' and not selling rates. Applicable costs only that are incurred outside the Working Areas** **For use with the e Shorter Schedule of Cost Components**	**Category of employee**		**Hourly rate**

62 in SSCC	The percentage for design overheads is **Note: a percentage to cover the overhead costs in relation to Design outside the Working Areas.** **Note: For use with the e Shorter Schedule of Cost Components**	**%**
63 in SSCC	The categories of design employees whose travelling expenses to and from the Working Areas are included in Defined Cost are:	

C1.3 Forms of Securities

Not applicable

PART 2: PRICING DATA
ECC3 Option A

Document reference	Title	No of pages
C2.1	Pricing assumptions: Option A	
C2.2	The *activity schedule*	

C2.1 Pricing assumptions: Option A

1. How work is priced and assessed for payment

Clause 11 in NEC3 Engineering and Construction Contract, (ECC3) Option A states:

Identified and defined terms 11 11.2

(20) The Activity Schedule is the *activity schedule* unless later changed in accordance with this contract.

(27) The Price for Work Done to Date is the total of the Prices for

- each group of completed activities and
- each completed activity which is not in a group.

A completed activity is one which is without Defects which would either delay or be covered by immediately following work.

(30) The Prices are the lump sum prices for each of the activities on the Activity Schedule unless later changed in accordance with this contract.

This confirms that Option A is a lump sum form of contract where the work is broken down into activities, each of which is priced by the tendering *Contractor* as a lump sum. Only completed activities are assessed for payment at each assessment date; no part payment is made if the activity is not completed by the assessment date.

2. Function of the Activity Schedule

Clause 54.1 in Option A states: "Information in the Activity Schedule is not Works Information or Site Information". This confirms that specifications and descriptions of the work or any constraints on how it is to be done are not included in the Activity Schedule but in the Works Information. This is further confirmed by Clause 20.1 which states, "The *Contractor* Provides the Works in accordance with the Works Information". Hence the *Contractor* does **not** Provide the Works in accordance with the Activity Schedule. The Activity Schedule is only a pricing document.

3. Link to the programme

Clause 31.4 states that "The *Contractor* provides information which shows how each activity on the Activity Schedule relates to the operations on each programme which he submits for acceptance". Ideally the tendering *Contractor* will develop a high level programme first then resource each activity and thus arrive at the lump sum price for that activity both of which can be entered into the *activity schedule*.

4. Preparing the *activity schedule*

Generally, it is the tendering *Contractor* who prepares the *activity schedule* by breaking down the work described within the Works Information into suitable activities which can be well defined, shown on a programme and priced as a lump sum.

The *Employer*, in his Instructions to Tenderers or in a Tender Schedule, may have listed some items that he requires the *Contractor* to include in his *activity schedule* and be priced accordingly.

It is assumed that in preparing his *activity schedule* the *Contractor:*

- Has taken account of the guidance given in the ECC3 Guidance Notes pages 19 and 20;
- Understands the function of the Activity Schedule and how work is priced and paid for;
- Is aware of the need to link the Activity Schedule to activities shown on his programme;
- Has listed and priced activities in the *activity schedule* which are inclusive of everything necessary and incidental to Providing the Works in accordance with the Works Information, as it was at the time of tender, as well as correct any Defects not caused by an *Employer's* risk;
- Has priced work he decides not to show as a separate activity within the Prices of other listed activities in order to fulfil the obligation to complete the *works* for the tendered total of the Prices.
- Understands there is no adjustment to the lump sum Activity Schedule price if the amount, or quantity, of work within that activity later turns out to be different to that which the *Contractor* estimated at time of tender. The only basis for a change to the Prices is as a result of a compensation event.

An activity schedule could have the following format:

Item No.	**Programme Reference**	**Activity description**	**Price**

C2.2 the *activity schedule*

Activity Schedule

Item No.	Activity Description	Price
1	Acceptance of Project Management Plan (PMP)	
2	Acceptable of Project Quality Plan (PQP)	
3	Acceptance of first programme submitted for acceptance	
4	Submission of scheme design for *Employer's* review	
5	*Employer's* approval of scheme design	
6	Submission of detailed design for *Employer's* review	
7	*Employer's* approval of detailed design	
8	Acceptance Test in Shop (FAT) – Unit 1	
9	Acceptance Test in Shop (FAT) – Unit 2	
10	Acceptance Test in Shop (FAT) – Spares	
11	Submission of Site Work Packages (SWP 's) – Unit 1	
12	Acceptance of Site Work Packages (SWP 's) – Unit 1	
13	Submission of Site Work Packages (SWP 's) – Unit 2	
14	*Employer's* acceptance Site Work Packages (SWP 's) – Unit 2	
15	Manufacturing, transporting & delivery of transformers – Unit 1	
16	Manufacturing transporting & delivery transformers – Unit 2	
17	Manufacturing transporting & delivery transformers – Spares	
18	Site Acceptance Testing (SAT) – Unit 1	
19	Site Acceptance Testing (SAT) – Unit 2	
20	Site Acceptance Testing (SAT) – Spares	
21	Installation of Unit 1	
22	Commissioning of Unit 1	
23	Installation of Unit 2	
24	Commissioning of Unit 2	
25	Acceptance of end of intervention report – Unit 1	
26	Acceptance of end of intervention report – Unit 2	
	Overall Total Price	

PART 3: SCOPE OF WORK

Document reference	Title	No of pages
	This cover page	1
C3.1	*Employer*'s Works Information	
C3.2	*Contractor*'s Works Information	
	Total number of pages	

C3.1: *EMPLOYER*'S WORKS INFORMATION

Contents

1 Description of the *works*

The *works* are the excitation transformers replacement at Koeberg Nuclear Power Station (KNPS)

The *works* the *Contractor* must perform on unit 1 and 2 at KNPS are as follows:

- the compilation and submission of acceptable design packages and reports as stipulated in requirements of specification TRS 240-152358699 rev1 to the *Project Manager* for acceptance,
- the manufacturing, supply of Plant and Material (8- off dry-type single phase transformers including all transformer auxiliaries). The *Contractor* shall install three transformers on each of the two units, with all associated auxiliaries as stipulated in appendix A of the TRS – GGSS 1074 Schedules A&B rev 14.1. The remainder two transformers are to be used as strategic spares,
- to perform FAT and submit acceptable reports for acceptance by *Supervisor,*
- the transportation, delivery of all 8 transformers to KNPS and storage,
- to perform SAT and submit acceptable reports of all the 8 transformers for acceptance by *Supervisor,*
- to compile and submit acceptable SWP to the *Supervisor* for acceptance*,*
- the provision of technical support during licensing process,
- to identify and update all the existing *Employer* 's documents that are associated with Generator Excitation (GEX) project,
- to provide and cater for all the rigging and scaffolding as required for the *works*,
- the installation, testing and commissioning of the new excitation transformers on the Generator Excitation (GEX) system,
- the compilation of acceptable end of Intervention reports and submission to the *Employer* for approval,
- the compilation of training material and provision of training for the operation and maintenance of the new system,
- to identify the *Employer's* procedures affected by the replacement of excitation transformers and provide procedures mark-ups for the operational of the equipment and maintenance of the new system; and
- the identification of all recommended spare parts that should be required by the *Employer* for maintaining the new systems and the relevant support information.

1.1 Executive overview

The replacement of the excitation transformers is necessitated due to aging related failing mechanism and the plant configuration; the following problems exist on the excitation transformers:

- Several oil leaks have been experienced on the excitation transformers throughout the life of the plant. Most of the oil leaks found were on gaskets of the bushings and the Buchholz relay, which is indicative of degradation of transformer materials.
- The oil leaks furthermore present a fire risk to surrounding plant, due to the oil leaking to unwanted areas. This in turn also causes a safety risk to personnel due to possibility of slipping etc.
- The oil required for the transformers is not easily accessible as it is not available locally.

The *works* is rendered in accordance with the requirements stated in this Works Information, which specifically includes the Technical Requirement Specification (TRS) 240-152358699 Revision 1 – Specification for Procurement of Excitation Transformers at Koeberg Nuclear Power Station and appendix A of the TRS – GGSS 1074 Schedules A&B rev 14. 1.

1.2 *Employer*'s objectives and purpose of the *works*

It is the *Employers* objective to contract with the *Contractor* to perform the *works.* The *works* include:

- all the *Contractor* activities that relate to the design verification, manufacturing, supply, delivery, inspection, installation, testing, commissioning, and documentation updates of the excitation transformers replacement;
- for the *Contractor* to prove through acceptance tests that the new transformers are acceptable;
- the responsibility of the *Contractor* to comply with all the requirements presented in the TRS Ref: 240-152358699 rev 1 including appendix A and all the documents it refers to; and
- Supplier Development and Localisation (SD&L) opportunity.

1.3 Interpretation and terminology

1.3.1 Terminology

The following words and terms used have the meaning as given below:

Term	Definition
Access Control	The portion of an entry-control system that verifies authority and authorises access of personnel seeking entry into a controller area. *(Source: IEEE Standards Dictionary)*
Construction Health and Safety Agent	A competent person who acts as a representative for the *Contractor* in managing health and safety on a construction project for the *Contractor* and who has satisfied the registration criteria of the SACPCMP to perform the required functions.
Controlled disclosure	Controlled disclosure to external parties (either enforced by law, or discretionary).
COVID-19	Severe Acute Respiratory Syndrome Coronavirus 2' (SARS-CoV-2).
Design	The process of devising a system, component, or process to meet the *Employer's* requirements, as specified in the Works Information. It is a decision-making process, in which the basic science, mathematics and engineering sciences are applied to meet the objective for the *works*.
Designer	The *Contractor* appointed to perform the design activities in accordance with the Works Information
Include	If "include" is followed by other, specific, words it will not be construed as limiting the meaning of the general words preceding it, save where the word "similar" precedes the word "include"".
Including	If "Including" is followed by other, specific, words will not be construed as limiting the meaning of the general words preceding it, save where the word "similar" precedes the word "including".

Term	Definition
Level 1 Programme	Executive summary or a project master programme. This is a major milestone type of programme which highlights major project activities, milestones, and key deliverables for the whole project.
Level 2 Programme	Management summary or summary master programme. Maintained as a summarisation of the Level 3 programme. It depicts the overall project broken down into its major components by area.
Level 3 Programme	The project coordination programme or publication programme. The Level 3 programme is maintained as an integrated rollup or summary of the Level 4 programme activities. The programme consists of a set of integrated Level 4 programmes based on Critical Path Methodology (CPM).
Level 4 Programme	Execution programme or project working level programme. Level 4 is the detailed working level programme, and an expansion a Level 3 programme. This is the key working level CPM programme displaying the operations to be accomplished. The Level 4 programme may be for major sections of the work or for discrete processes such as a design, procurement and/or a commissioning etc.
Level 5 Programme	Detail programme. This is further breakdown of the activities of a Level 4 programme. This programme is used to map out the detailed tasks needed to coordinate day to day work in specific areas.
May	Denotes permission in *Employer* documentation.
Non-Outage	When the power station unit is operational
Others	Others working on this project as required by the *Employer* are as follows: • NNR; • *Employer's* Authorise Inspection Agency; • *Employer's* consultants; and • Consultants. The list is updated, by the *Project Manager*, each time a third parties contract is placed by the *Employer* or Others change
Outage	When the power station unit is shut down for maintenance and refuelling

Term	Definition
Physical conditions	Referred under Core Clause 60.1(12) means natural physical conditions and man-made and other physical obstructions and pollutants, which the *Contractor* encounters at the Site when executing the *works*, e.g. sub-surface, hydro-logical conditions, etc., but excluding weather conditions.
Physical Security	The application of methods for preventing malevolent acts against safeguards and security interest, detecting such acts as they occur, and responding to such acts. (Source: IEEE Standards Dictionary)
Public domain	Published in any public forum without constraints (either enforced by law, or discretionary).
Quality Assurance	The maintenance of a desired level of quality in a service or product, especially by means of attention to every stage of the process of delivery or production.
Requirement	A condition or capability needed by a user to solve a problem or achieve an objective.
Shall	Denotes a requirement in *Employer* documentation.
Should	Denotes a recommendation in *Employer* documentation.
Technical Lead	The provision of technical guidance, technical coordination, and technical leadership to the project, to ensure the *works* is suited for its designated purpose as stated in the Works Information.

1.3.2 Abbreviations

The following abbreviations are used in this Works Information:

Abbreviation	Meaning given to abbreviation
ACP1	Access Control Point 1
ACP2	Access Control Point 2
AIA	Appointed Inspection Authority
ALARA	As Low As Reasonably Achievable
ASCC	Atmospheric Stress Corrosion Cracking
ASME	American Society Of Mechanical Engineers
BS	British Standards
CAD	Computer Aided Design
Codes	“Codes means codes, standards, criteria which may be applicable to or affect the manner in which the *Works* must be designed, installed or tested, including without

Abbreviation	Meaning given to abbreviation
	limitation those published by Governmental Authorities, the American Society of Mechanical Engineers (ASME) and the American National Standards Institutes (ANSI), and the instituted of Electrical and Electronics Engineers (IEEE).
COVID-19	Coronavirus disease 2019 (The global pandemic)
CRACK	Chemical restrictions and control at NOU
CSC	Construction Status Certificate
DCIF	Documentation Change Identification Form
DDR	Document Change Request
Design Report	Certified Code Design Report. This report contains all of the required analyses to satisfy ASME Code Section III requirements (limited to pressure boundary and attachments).
EIA	Environmental Impact Assessment
FAT	Factory Acceptance Testing
FFD	Fitness for Duty
GEX	Generator Excitation System
KNPS	Koeberg Nuclear Power Station
MM	Maintenance Manual
NCR	Non-Conformance Report
OE	Operating Experience
OEM	Original Equipment Manufacturer
ORT	Operating at Reduced Temperature
OTS	Operating Technical Specification
PQP	Project Quality Plan
QA	Quality Assurance
QADP	Quality Assurance Data Package
QC	Quality Control
QCP	Quality Control Program
RPC	Radiation Protection Certificate
SAT	Site Acceptance Testing
SSC	System Structure Component
SWP	Site Work Package
VAT	Value Added Tax

2 Management and start up.

2.1 Process

Any / all modifications performed at KNPS are controlled in accordance with the *Employer's* procedure KAA-501. For the purposes of this contract, the following sections are applicable to Providing the *Service*:

- Section F -Execution Detail Development
- Section G -Authorisation to Implement
- Section H - Schedule of Work
- Section I -Implementation
- Section J -Finalisation

2.2 Management meeting

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

2.2.1 Project Kick-off Meeting

Interval	**Location**	**Attendance by:**
Once	KNPS or Tele/Video Conference	*Project Manager, Employer*, *Contractor*, *Supervisor*, and Others as required

Activity Description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Establishing the project team	**X**		• The *Project Manager* notifies the names of *Employer* key persons to support the *Contractor* with the Provision of the Works, in terms of the *Employer* functions.	Within 1 week after the Contract Date.	At kick-off meeting with *Employer*'s Org structure.
Notification, venue, agenda and support documentation	**X**		• The *Project Manager* develops and notifies the agenda, venue and required support documentation for the meeting.	Within 2 weeks after the Contract Date.	An *Employer* systems engineer, operations representative and maintenance representative is present at the meeting.
Execution and Minutes	**X**		• The *Project Manager* assumes chairmanship of the meeting, records, and distributes the minutes of meeting.	Within 2 days of the meeting	

Activity Description	*Project Manager*	*Contractor*	Requirements	Planning	Additional notes
Conclusion	**X**	**X**	• This activity is complete upon acceptance of the minutes of the kick-off meeting by both Parties.	In accordance with the Accepted Programme	Deliverable: Minutes of the kick-off meeting.

2.2.2 Risk reduction meetings

Interval	Location	Attendance by:
Adhoc	KNPS or Tele/Video Conference	*Project Manager, Employer*, *Contractor*, *Supervisor*, and Others as required
At the risk reduction meetings items as prescribed in ECC Core Clauses 16.2 and 16.3 are discussed. The Risk Register is updated, by the *Project Manager,* and distributed within 5 days of the meeting.		

2.2.3 Operational meetings

Interval	Location	Attendance by:
During contract period	KNPS or Tele/Video Conference	*Project Manager, Contractor*, *Supervisor*

An operational meeting is held, by tele- or video conference, if necessary, between the *Project Manager* and the *Contractor's Project Manager* to monitor and control the design, manufacturing, and planning processes. Typical topics for discussion at this meeting will include *Contractor*'s reporting on the following:

- Review of Project Progress (Programme) with specific focus on Key Dates and interim milestones;
- Key Risks (threats) and Issues and, where applicable, identify and agree on associated preventive/contingent and recovery actions;
- Review of Actions List;
- Review of Communications.

2.2.4 Implementation meeting for specific progress and feedback

Interval	Location	Attendance by:
Daily during implementation	KNPS	*Contractor* and *Supervisor*
The implementation meeting is held between the *Contractor* and *Supervisor*'s implementation support team, to report on implementation progress and review any risks, issues and *Employer* actions that need to be resolved to ensure smooth implementation of the *works*.		

2.2.5 QC Meetings during implementation

Interval	Location	Attendance by:
Daily during implementation	KNPS	*Contractor* QC representative and *Employer QC* representatives

The *Contractor*'s QC representatives provide reports from each meeting to the *Employer*'s project QC Group. This report will cover:

- Scheduled QC inspections for the period identified in the meeting.
- Any new QC related issues identified since the last report, its status and action plan for resolution.
- Status and progress on previously reported quality issues.

2.2.6 Meetings of a specialist nature

Interval	**Location**	**Attendance by:**
Ad-hoc	Any	*Employer's* personnel, the *Project Manager,* the *Contractor, the Supervisor, and Others as required*
Meetings of a specialist nature may be convened by persons and *at* times and locations to suit the Parties, the nature, and the progress of the *works***.**		

2.2.7 Table-top" meetings

Interval	**Location**	**Attendance by:**
Ad-hoc	**Any**	*Employer's* personnel, the *Project Manager*, the *Contractor, the Supervisor, and Others* as required
To manage the occupancy of the Working Areas during implementation, the *Contractor* attends the "Table-top" meetings with the *Employer's* Outage representative to discuss area workload and to integrate and schedule the *Contractor's* activities as such as to allow sufficient space for implementation.		

2.2.8 Post implementation meeting for project feedback and review

Interval	**Location**	**Attendance by:**
Post unit implementation	KNPS	*Project Manager, Contractor* Senior Manager (not the *Contractor*'s *Project Manager*), *Contractor*'s *Project Manager*, *Supervisor, Employer's* personnel*,* Others as required
The post implementation meeting is held between the *Project Manager*, *Contractor* senior management, *Supervisor,* Outage control centre management and other line groups, to report on implementation issues and reviews. Share lessons learnt to ensure smooth implementation on the next implementation phase.		

All meetings are recorded using minutes or a register prepared and circulated by the person who convened the meeting. Records of these meetings shall be submitted to the *Project Manager* by the person convening the meeting within five days of 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. Confirmation of contract communications during operational meetings will, however, be considered as formal acknowledgement of receipt of a contract communication.

2.3 Documentation control

The *Contractor* complies with the documentation requirements of each TRS for each modification. Various conformation codes, design specifications, test equipment, quality standards and general requirements are listed in each TRS.

2.3.1 Documentation and record management

- All documentation produced by the *Contractor* complies with the latest *Employer*'s guide for technical writing - GGG-1299 - with date formats in accordance with ISO-8601 extended date format and measurements in metric units.
- All documentation, including drawings and operating and maintenance instruction manuals, are uniquely identified and cross-referenced with all related documents. Document deliverables are provided in electronic, searchable format (PDF) and includes all signatures obtained internally.
- Once the document deliverable has been accepted by the *Employer*, the *Contractor* provides, in addition to the electronic submission, one hardcopy version of the document.
- Where required, the *Contractor* may be requested to supply a document in its originally compiled format i.e., "Word", "Excel", "Visio" to facilitate the *Employer*'s review or documentation updates. The *Contractor* provides, upon request, the documents in its originally compiled format.
- All new drawings submitted by the *Contractor* conforms to the *Employer*'s drawing standard, KBA 0000 G00 1000
- The *Contractor* requests sequential drawing and document numbers from the *Employer* (where applicable).
- All new drawings are handed to the *Employer* in the electronic media (e.g.gn format) which is compatible to Micro Station V8i software program.
- All new drawings are sized to metric paper size standards (A4, A3 etc.).
- The *Contractor* identifies and provides the update requests for affected drawings, documents, and procedures.
- The *Contractor* corrects all identified documentation / configuration anomalies required to implement the *works* and notify the *Project Manager* of any other.
- Programmes, prepared by the *Contractor*, for the *works* and accepted by the *Project Manager* are considered as records.
- Records are kept, by the *Contractor*, identifying generally the activities on the Site, labour on the Site, Equipment on the Site, Sub-*Contractor* work on the Site, delivery of material to the Site, list of any instructions given, weather conditions encountered, and any delays encountered on the Site.

2.3.2 Documentation to be provided by the *Employer*

- The *Employer*, on request from the *Contractor*, provides copies of all applicable *Employer* standards, procedures, guides, and forms.
- The *Employer* provides access to all available Site documentation required for providing the Works.
- Original component related design base information does not all reside with the *Employer*. In cases where such information is required and not available, the *Contractor* reverse engineers the basis as part of the works.
- The *Contractor* provides a list of persons that require authorisation, by the *Project Manager*, for requesting copies of Site documentation.
- The *Project Manager* only authorises the relevant personnel once the *Contractor* has signed the Confidentiality and Non-Disclosure Agreement.

- Copy requests are made in writing, to the *Project Manager*, and details the exact documentation identification numbers.
- Documentation is provided in accordance with the latest Accepted Programme.

2.3.3 Communication

All communication is addressed to the *Project Manager* or the *Supervisor*, as applicable to the ECC. All communication refers to:

- the contract number that is issued by the *Employer* (normally a 46000xxxxx number),
- the title of the contract,
- any previous references relating to the specific communiqué (i.e. a response to a *Project Manager*'s communication),
- the specific ECC 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 *Project Manager* and *Contractor* and vice versa is as follows:

From the *Project Manager* to the *Contractor*: 46000……. Z/E/C 0xxx

From the *Contractor* to the *Project Manager*: 46000……. Z/C/E 0xxx with Z referring to the following categories:

Z = C for letters associated with ECC clause 5, 6 or 9

Z = R for letters not associated with ECC clause 5, 6 or 9

and xxx referring to the next sequential letter number.

All document deliverables transmitted to the *Project Manager* for review / acceptance / record / information are transmitted under formal communication with an associated document transmittal cover document. Related CDs or hardcopy documents are delivered with a hardcopy copy of the formal communication and/or document transmittal to the *Employer's* nominated information controller – situated on Site.

The title of each letter clearly summarises the purpose of the letter. In accordance with ECC Core Clause 13.7, each notification deals with only one specific issue at a time.

Where written and/or signed communication is required in terms of this Contract, the terms "writing" and "signed" or their analogous forms, will be construed as excluding sections 12 and 13 of the Electronic Communication and Transaction Act 25 of 2002, save that such a communication may be scanned after manual signature and then sent electronically.

In the case where letters are submitted electronically by means of email, the title of the letter is reflected in the subject line and only one letter is submitted per email.

2.4 Health and safety risk management

2.4.1 Nuclear Safety

The *Contractor* promotes a culture that is dedicated to continuously striving to enhance nuclear safety.

The *Employer* defines appropriate safety objectives for the KNPS, and the *Contractor* is also responsible for meeting those objectives, instilling a philosophy of personal excellence, and timely identification and resolution of safety problems.

The *Contracto*r is responsible for continuously pursuing enhancements to safety, not just complying with a minimal set of legal requirements.

2.4.2 SHE Specification

The *Contractor* complies with the *Employer*'s Level 1 Construction Safety, Health and Environment Procedure, number 32-136. SHE specification guidelines to which *Contractor* complies with are supplied by the *Employer*.

A project specific SHE file is to be created by the *Contractor* and submitted together with a completed copy of the Construction Regulations Checklist to the *Supervisor* for acceptance within 2 months of the starting date following which the *Contractor* maintains and updates the file.

It is to be noted that before any work can commence on Site, the *Contractor* must have performed a detailed risk assessment of the work to be performed and/or the work area where work is to be performed. The risk assessment is documented and discussed with the parties involved with the work and is to be submitted to the *Supervisor* for acceptance.

Personnel protective clothing as specified in the Act for all work, except work in the radiological controlled zone, is provided and is kept in good order by the *Contractor*. A hard hat (with chin strap), safety boots, ear plugs, and safety glasses are mandatory safety Equipment at the Site. Where work is to be performed on the 7,5m level Electrical Building, the *Contractor* provides arc-flash suits. Protective clothing for work in the controlled zone is prescribed and is supplied by the *Employer*.

2.4.3 Incident Management:

The *Employer*'s procedure 32-95 - Environmental, Occupational Health and Safety Incident Management Procedure, states the requirements for the effective management of incidents that may occur or could result in, occupational diseases/illnesses, fatalities, injuries, near misses, and/or environmental damage.

2.4.3.1 Reporting of SHE incidents:

All incidents occurring on site while Providing the Service shall be reported, to the *Project Manager*, as soon as practicable but not later than the end of that shift (in terms of KAA-688) and in the event of an incident as defined in terms of Section 24 of the OHSA where someone dies, becomes unconscious, suffers the loss of a limb or part of a limb is also reported immediately to the Department of Labour by the *Contractor*.

The following are requirements for the *Contractor*, in terms of KAA-688 – (The Corrective Action Process):

- In the event of any incident or accident, a corrective action report is completed by the *Contractor* and submitted before end of shift or within 24 h to the *Employer* and the *Project Manager*.
- The *Employer*'s template for the corrective action report (KAA-688) is included in the *Contractor*'s health and safety plan.
- The *Project Manager* raises a Condition Report (CR) and captures the details on the Devonway system.
- Where applicable, the *Project Manager* will mobilise an incident investigation team who will investigate the incident within 7 days, complete the *Employer*'s corporate documentation, indicating the root causes, corrective actions, and recommendations for submission to the *Employer*'s OH&S Department.
- The *Contractor* must submit proof of corrective action within pre-determined due dates to the *Employer*'s OH&S Department, who will then close-out the CR in Devonway. Dependant on the incident, it may also be required that the *Contractor* presents the corrective action to the *Employer*'s Koeberg Operating Safety Committee (KOSC).

2.4.3.2 Investigation and recording of incidents

All incidents are investigated by the *Contractor* with the assistance of the *Project Manager*, to establish the direct, indirect and root cause of such incident as well as any reactive/preventative measures required and

implemented to prevent a re-occurrence of such future incidents. Any such incident is recorded and investigated by the *Contractor* as required by General Administrative Regulation 9(1 4) of the OHSA.

2.4.3.3 Environmental incidents

Environmental incidents could include but is not limited to:

- release of effluent to the environment,
- non-compliance to station water permit conditions,
- non-compliance to station sewage permit,
- non-compliance to waste site permits,
- illegal dumping of waste,
- Environmental Impact Assessments (EIAs) not undertaken for projects,
- non-compliance to EIA environmental authorisation (EA),
- cutting down of protected plant species,
- harming of protected animal species and
- the *Supervisor* will inquire into all incidents including near–misses during *Contractor* audits.

2.4.3.4 Health and safety plan

The *Contractor*'s health and safety plan is the *Contractor*'s proposal of how the work will be carried out considering the hazards expected and procedures.

The *Supervisor* reviews and accepts the health and safety plan according to 32-136. The construction regulation checklist with the required information must be included in the health and safety plan.

The *Contractor* ensures that contents of the health and safety plan for the project shall include at least:

- A copy of the principal *Contractor* appointment letter.
- The scope of works /description of the work for which the *Contractor* was appointed.
- The *Contractor*'s risk assessment including control/mitigation measures to address all the risks identified in terms of KGA-067 (Safety, Health and Environmental Risk Assessment Guide).
- The risk based legislative appointments made, by the *Contractor*, as required by the construction regulations.
- The risk based legislative checklists and registers to be completed, by the *Contractor*, as required by the construction regulations.
- Certified copies and proof of competencies of all *Contractor* appointees i.e. training certificates, permits, medical certificate of fitness and curriculum vitae where required.
- Copies of identity documents for *Contractor*'s employees / workers appointed for the works.
- Accident/incident registers to be kept, by the *Contractor*, in the event of any incidents, including near misses. A copy of the *Employer*'s flash report template is included in the *Contractor*'s health and safety plan, should it be required in the event of an incident.
- Any waste management and pollution prevention by the *Contractor* – where required permits for dumping/incineration at authorised facilities. The *Contractor* must consult and comply with the *Employer*'s applicable waste procedure KAE 012.
- Proof of the *Contractor*'s registration and letter of good standing with COID or other registered insurer, Construction Industry Development Board (CIDB) and/ or Electrical *Contractor*s Board.

A SHE Programme, compiled by the *Contractor*, using the template provided in KAA-768 rev 6

The *Supervisor*'s letter of acceptance of the health and safety plan is added as soon as it is obtained.

The *Contractor* submits the health and safety plan, 30 days prior to commencement of any part of the *works* on Site, to the *Supervisor*, who verifies whether contents for acceptance. The *Contractor*'s health and safety plan will be returned to the *Contractor*, should it not contain the required information or where the necessary permits have expired.

The accepted *Contractor*'s health and safety plan must be on the Site. Periodic audits are conducted to ensure that the *Contractor*'s health and safety plan is implemented and maintained as the project progresses. Refer Construction Regulation 4(1) (d).

When the *Contractor* is required to review and update documentation on the *Contractor*'s health and safety plan, the plan must be re-submitted to the *Supervisor* for acceptance

2.4.3.5 Health and safety file

The *Contractor*'s health and safety file is separate from the *Contractor*'s health and safety plan. The *Contractor*'s health and safety file is progressively populated with checks and inspections, as indicated in the *Contractor*'s health and safety plan. Any drawings, designs, materials used, structural integrity testing and any other similar information applicable to the project will be placed on the *Contractor*'s health and safety file.

The *Contractor*'s health and safety file must be available on request and should be handed over to the *Supervisor*, prior to the Completion Date (Refer Construction Regulations 5(7) and 5(8)).

Depending on the nature of the *works* and detail of the information on the *Contractor*'s health and safety file, e.g., asbestos work where there is a requirement for medical surveillance of workers who will be exposed to asbestos, it is recommended that the *Contractor* keeps these records for forty years, in terms of Asbestos Regulations 16(f).

Where the *Contractor*'s employees / workers are exposed to hazardous chemical substances and where a medical surveillance was required, it is recommended that that the *Contractor* keeps these records for thirty years, as stipulated under the Hazardous Chemical Substances Regulations 9(f).

The *Contractor* ensures that all other medical surveillance requirements in terms of the OHS ACT, where applicable, is complied with for the *Contractor* and Sub-*Contractor* organisations.

The *Contractor*'s health and safety file is audited by the *Supervisor* or his delegate, to ensure that work is being carried out and the necessary checks and inspections are conducted in accordance with the *Contractor*'s plan.

The minimum contents of a SHE File are indicated in 32-136.

2.4.3.6 Risk assessments

The *Contractor* appoints a competent risk assessor, in writing, to perform risk assessments (Construction Regulation 7(1)). The *Contractor* is however required to use the *Employer*'s methodology and provide a project specific risk assessment with the *Contractor*'s health and safety plan, submitted for review and acceptance by the *Supervisor*. The *Contractor*'s risk assessment includes a monitoring and review plan as required by Construction Regulation 7(1). No work may commence on Site, until the *Contractor*'s risk assessment has been accepted by the *Supervisor*.

The *Contractor* ensures that ergonomic hazards have been identified evaluated and addressed. As required by Construction Regulation 7(6). Hazards the *Contractor* must consider include:

- improper lifting techniques,
- continuous repetitive movements with body parts in extreme postures; and
- poor grips on tools or carrying containers with no handles.

Whenever changes to methods of working / manufacture or materials are introduced, the *Contractor*'s risk assessment is reviewed, including controls and mitigation measures and submitted to the *Supervisor* for

review and acceptance. Following acceptance, the *Contractor*'s risk assessment must be placed in the health and safety plan, for implementation.

The *Employer*'s risk assessment chart is completed, by the *Contractor*, during the *Contractor*'s pre-job briefs and displayed at the entrances to those areas of the Site. The template is available from the *Supervisor*.

The *Contractor* ensures that all *Contractor*'s employees are informed, instructed and trained by a competent person regarding the hazards, risks and related work procedures. These employees must carry proof of such training, for the duration of the project. (Construction Regulation 7(9)).

Regarding environmental considerations, the *Contractor* ensures that any aspect from a product or activity that might have an impact on the air, water, marine and soil or which may have the potential to cause harm to the environment is addressed in the *Contractor*'s risk assessment, in order to avoid any environmental incidents while Providing the Works. Where such impact cannot be avoided, the *Contractor* ensures that the necessary steps are taken to minimise and remediate such impact. (Refer to Section 28 of National Environmental Management Act, 1998).

Lists of expected hazards and risks at the KNPS have been referenced in 32-136, as well as the Occupational Health Services Job Specification (reference KFV-SR-004), outlining the required physical attributes and personal protective safety Equipment. Some known hazards include:

- **Safety**: live electrical Equipment, working at heights, moving vehicles, floor openings, slippery floors, unguarded machinery, sharp tools, exposed blades, suspended loads, overhead pipelines, floor level pipelines, faulty portable electric tools, strong winds, poorly maintained high pressure vessels, untrained staff doing hot work.
- **Health**: radiation exposure, dust, noise, snake/spider bites, bee stings, chemical fumes and splashes, asbestos lagging, prolonged awkward postures.
- **Environmenta**l: air emissions, marine spill, ionising radiation being released into environment, chemicals leaching into ground/soil, diesel/petrol spill, clearing of vegetation, disturbance of habitat.

2.4.3.7 Accident - Incident Reporting Protocol

The reporting of accidents/incidents is a legal requirement as outlined in the OHSACT, section14 (e)

The *Employer*'s Corporate Procedure 32-95 (Rev 6) addresses the process that has to be followed by all Parties. The following table indicates the actions required and the timeframes in which to act.

Incident	Action	Timing
Near Miss	• Condition Report (Devonway). • Near Miss Card • Flash Report. No investigation required unless a trend develops or priority rating is high or extreme as per Procedure: 32-95, Rev 6.	Report incident before end of shift.
Property Damage	• Condition Report (Devonway). • Flash Report. • 240-62989893 - Vehicle Accident Reporting form No investigation required unless a trend develops or rating is high or extreme as per 32-95, Rev 6.	Report incident before end of shift.

Incident	Action	Timing
First Aid	• Condition Report (Devonway) • Flash Report. • Minor Injury form. • 240-77046688-*Employer*s Investigation Report (Complete sections: 1, 2, 6, 7, and 10). Accident/Incident investigation required as per 32-95, Rev 6.	• Report incident before end of shift. • Investigation completed within 7 days • Investigation report to be completed within 30 days.
Medical Injury	• Condition Report (Devonway). • Flash Report. • 240-77046688-*Employer*'s Investigation Report (complete sections: 1, 2, 6, 7, and 10). • *Employer*s Report (WCL II). • Resumption Report. • Annexure 1 Note: 1st medical, progress and final medical reports to be issued by medical practitioner	• Report incident before end of shift. • Investigation completed within 7 days. • Investigation report to be completed within 30 days.
LTI's	• Condition Report (Devonway). • Flash Report. • 240-77046688-*Employer*s Investigation Report (full document). • *Employer*s Report (WCL II). • Resumption Report. • Annexure 1 Note: 1st medical, progress and final medical reports to be issued by medical practitioner	• Report incident before end of shift. • Investigation completed within 7 days. • Investigation report to be completed within 30 days.
Fatality or Occupational Diseases	• Condition Report (Devonway). • Flash Report. • 240-77046688-*Employer*s Investigation Report (full document). • *Employer*s Report (WCL II). • Resumption Report. • Annexure 1 Note: 1st medical, progress and final medical reports to be issued by medical practitioner.	• Report incident before end of shift. • Investigation completed within 7 days. • Investigation report to be completed within 30 days.

2.4.3.8 *Employer's* lifesaving rules

The *Contractor* complies with the *Employer*'s five rules as stipulated in the *Employer*'s Management Directive 32-421. The *Employer* takes a ZERO TOLERANCE stance to violation of these rules:

- Rule 1: Open, isolate, test, earth, bond, and/or insulate before touch.

- Rule 2: Hook up at heights.
- Rule 3: Buckle up.
- Rule 4: Be sober.
- Rule 5: Permit to work.

2.5 Environmental constraints and management

2.5.1 Environmental impact

Environmental impact filtering is performed by the *Contractor* in accordance with the following. This filtering record is included as part of the Scheme Design.

Activity Description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Environmental Impact Assessment Filtering Phase.		**X**	• The *Contractor* completes the Environmental Impact Assessment Filtering in accordance with National Environmental Management Act 107 of 1998 • The EIA filtering is performed as part of the Scheme Design and submitted as an attachment to the Scheme Design.	In accordance with Accepted Programme	
Acceptance by the *Project Manager*	**X**		• The *Project Manager* obtains acceptance from the *Employer's* Environmental Officer, with support from the *Contractor*.	Within 2 weeks of submittal.	Acceptance by the *Project Manager* is subject to acceptance by the *Employer's* Environmental Officer. This acceptance is obtained as part of the Scheme Design acceptance process.
Environmental Impact Assessment Studies (where required)		X	• The *Contractor* provides the necessary input data to complete any additional EIA studies required for the relevant modification.	In accordance with Accepted Programme	
Conclusion	**X**	X	• This activity is complete upon acceptance by the *Project Manager* of the EIA filtering.	In accordance with Accepted Programme	Deliverable: Environmental Impact Assessment Filtering form/report.

2.5.2 Plant and Materials

The *Contractor* ensures that all Plant and Materials, services and work supplied in terms of this contract conform to all applicable environmental legislation and in the *Contractor*'s residing country and to the *Employer*'s environmental specifications. The *Contractor* ensures that the *Employer*'s chemical restrictions and controls at Koeberg (CRACK) programme (KAA-751) are adhered to.

2.5.3 General Constraints

2.5.3.1 Laws and regulations to be complied with

Specific laws to be complied with include:

The *Contractor*, at its own expense, complies with:

- the Nuclear Energy Act 92 of 1982,
- the National Key Points Act 102 of 1980,
- the Protection of Information Act 84 of 1982*,*
- the Occupational Health and Safety Act 85 of 1993 and its regulations,
- the Basic Conditions of Employment Act 75 of 1997. The *Contractor* indemnifies the *Employer* against any claims, proceedings, compensation, and cost arising from the *Contractor's* transgression of the Act,
- the Labour Relations Act 66 of 1995,
- the Medicine and Related Substance Control Act 101 of 1965,
- the National Health Act 61 of 2003,
- the Compensation for Occupational Injuries and Diseases Act 130 of 1993, and
- all laws, regulations, byelaws, and requirements of local and other authorities which may be applicable to the *works* and as amended or replaced.

Where applicable, the *Contractor* complies with the *Employer's* Radiological Safety Regulations Programme, and in general, the whole framework of plant rules and regulations, which may be in force at the *Employer's* facilities from time to time.

While on the Site, the *Contractor* is at all times under the authority of the *Employer's* Power Station Manager for the purpose of giving effect to the provisions of the above. However, this does not in any way relieve the *Contractor* of his obligation to comply with the relevant legislation. Failure of the *Employer's* Power Station Manager to act in any specific manner does not make him or the *Employer* liable to the *Contractor* in any manner for any matter which may arise because of such failure to act.

2.5.3.2 Confidentiality and publicity

The exchange between the Parties or the disclosure to third parties of information is subject to the provisions of the Nuclear Energy Act 92 of 1982, the National Key Points Act 102 of 1980, and the Protection of Information Act 84 of 1982. The *Contractor* agrees that neither the *Contractor* nor its employees, agents or sub-*Contractor*s make any public statements or release to any third party (including the Adjudicator) any information concerning the performance of any work without first obtaining the written approval of the *Project Manager*. Requests to release information are co-ordinated by the *Project Manager* through the designated *Employer*'s Commercial Manager or the *Employer*'s Power Station Manager. The *Contractor* ensures adherence of its employees, agents, and sub-*Contractor*s to this restriction.

2.5.3.3 Reporting culture

The *Contractor* is required to have a process or means by which the workers (all organisational levels) can report issues and incidences that negatively (or have the potential to) affect performance, without fear of retaliation or punitive action.

The *Contractor*'s process must be such that the information is captured, analysed and the resulting corrective actions taken because of the reports are identified and tracked, for implementation and improvement. All such reported issues are shared with the KNPS, for purposes of capturing in the KNPS Corrective Action Programme (CAP).

2.5.3.4 Observation programme

It is desired (not expected) that the *Contractor* is capable of performing initial investigations into human performance events to determine the contributing factors (error precursors and organisational weaknesses). The *Contractor* must however support and co-operate with any such investigation by KNPS.

The *Contractor* is required to have a process whereby workers' at-work behaviours in the field are observed and coached against a set of formalised best practice criteria. This is to reinforce the desired standards and behaviours expected on the job site and to provide assurance that the *Contractor*'s workers and supervisors are adhering to standards. The *Contractor*'s workers must be coached where deviations from standards and expected behaviours are detected.

This information is captured, by the *Contractor*, in a means that allows review of previous observations performed for the identification of potential trends in worker behaviours that could potentially lead to an event. Actions are to be developed and implemented to address such trends. The *Contractor*'s process must have an auditable trail.

2.5.4 *Employer's* Site Access Control

2.5.4.1 Fitness for duty management

The *Contractor* adheres to the *Employer's* procedure with regards to fitness for duty (FFD) requirements for vendors and *Contractor*s who are required to perform work inside the owner controlled areas of the KNPS (335-68). This document is not applicable to visitors. Accesses for visitors are dealt with in KAA-777.

The objective of the *Employer's* FFD programme is to provide reasonable assurance that the *Contractor's* plant workers will perform their tasks in a reliable and trustworthy manner and are not under the influence of any substance or suffer from any health impairment which in any way adversely affects their ability to safely and competently perform their duties. The FFD programme also gives reasonable assurance that the workforce has been trained and their technical competence has been assessed.

The *Employer's* FFD process is designed to only allow the *Contractor's* employees to perform work if they:

- have valid identification documents,
- have been declared free of drugs and alcohol,
- have been declared healthy, physically able and free of any medical condition that could impair their ability to perform the work they have been appointed for,
- have valid work permits,
- have completed the security background verification process,
- have the qualifications required for the task,
- have the minimum plant access training required to work on site,
- have been declared competent and authorised to perform the work they have been appointed for,
- have received specific training required for the work they will be required to perform and

- have signed a non-disclosure agreement to protect the *Employer's* information, they come in contact with.

2.5.4.2 FFD requirements before registration takes place

Information the *Contractor's* employee must supply:

- identification document,
- work permit (non SA citizens),
- qualifications,
- curriculum vitae (CV),
- criminal record history and
- proof of residential address.
- Forms that the *Contractor's* employee must sign:
- pre-placement medical examination,
- baseline questionnaire for audiometry,
- medical declaration,
- security permit application,
- consent to disclose criminal information (if the *Employer* is performing the criminal check),
- SAPS enquiry and
- non-disclosure agreement (protection of information).

Activities to be performed before the *Contractor's* arrival at the Site

Activity Description	***Project Manager / Employer***	***Contractor***	**Requirements**	**Planning**	**Additional Notes**
Recruitment & Selection		**X**	•	*Contractor's* own planning	
ID Document		**X**	Proof of identification is required before that the *Contractor*'s employee is allowed to register on the FFD system.	*Contractor's* own planning	The following identification documents are the only documents that shall be accepted as proof of identification. • South African Identification Book issued by the Department of Home Affairs. (Green ID) or • Valid Official Passport or • Valid Temporary Identification Document issued by the Department of Home Affairs.
Proof of Residential Address		**X**	Proof of residential address is required before that the	*Contractor's* own planning	The proof may not be older than 3 months when the *Contractor's* employee is enrolled on the FFD system.

Activity Description	***Project Manager / Employer***	***Contractor***	**Requirements**	**Planning**	**Additional Notes**
			Contractor's employee is allowed to register on the FFD system.		
CV and Qualifications		**X**	Authenticated qualifications to be presented before registration takes place	*Contractor's* own planning	• CVs of *Contractor* employees are included in the documents where this is required by the procedure. • The *Contractor's* employees must be in possession of his/her CV when he/she arrives on site to start the FFD process. • The *Contractor* is required to verify the authenticity of the qualifications that is required for the work that is to be performed on Site. The *Employer* retains the right to verify any tertiary qualification that an applicant is required to have to work in a specific discipline. • The *Contractor* ensures that his employee has the original (or certified copy) of the qualifications when he/she is registered on the FFD system. • Persons not in possession of the qualifications required by the *Employer* are not considered for employment by the *Contractor* (in that particular discipline).
Criminal History		**X**	Assessment of criminal history	*Contractor's* own planning	• Terminate Process Hold Point • The criminal history of an applicant shall be assessed before access to the Site is considered. • SA citizens obtain their criminal history reports from the South African Police (SAPS). The report may not be older than 3 months when the *Contractor's* employee is enrolled on the FFD system. This service is also available from the

Activity Description	*Project Manager / Employer*	*Contractor*	Requirements	Planning	Additional Notes
					Employer's Security section. South African applicants are required to give their consent to the *Employer* to obtain the relevant information from the SAPS. • Non South African citizens are required to provide proof of their criminal history. The criminal history report from their country's law enforcement agency or INPO (USA citizens only) is dated within three months of their required access date. • Persons with a criminal background that is deemed to be a security risk to the Site are not to be considered for employment by the *Contractor*. • The *Contractor's* employee will be in possession of the proof of criminal history when he/she arrives on site to start the FFD process.
Complete Man Job Spec Form	**X**	**X**	*Contractor* to complete with *Project Manager*	*Contractor's* own planning	• The *Contractor* ensures that an occupational health services job specification form is completed, in conjunction with the *Project Manager*; for each of his employees and all signatures are obtained before the health assessment is arranged. • These forms are obtainable from the *Employer* at Koeberg. The form identifies the work scope, the occupational hazards that the *Contractor's* employee will be exposed to and the physical attributes that are required for the execution of the tasks. • The *Contractor's* employee will be in possession of the completed and signed occupational health

Activity Description	*Project Manager / Employer*	*Contractor*	Requirements	Planning	Additional Notes
					services job specification form when he/she arrives on site to start the FFD process.
Drug Test		**X**	Negative drug test to be presented before registration takes place	*Contractor's* own planning	• Terminate Process Hold Point • *Contractor* ensures that their employees have been tested for drugs before they arrive on site to start the FFD process. Persons with a positive drug test result are not considered for employment by the *Contractor*. • Persons with positive drug tests will not be allowed to register for the FFD process. • The *Contractor's* employees must be in possession of the drug test results when he/she arrives on site to start the FFD process.
Health Assessment		**X**	Medical examination to be presented before registration takes place	*Contractor's* own planning	• Terminate Process Hold Point • The *Contractor* ensures that all his employees complete a health assessment before they arrive on site to start the FFD process. The occupational health services job specification form is required by the occupational health practitioner for the health assessment. • Applicants that are not declared fit to do the work specified in the occupational health services job specification form are not allowed to register on the FFD system. • Health assessment are only performed by *Employer* registered Occupational Health Practitioners. • The health assessment report is not older than 3 months when the

Activity Description	*Project Manager / Employer*	*Contractor*	Requirements	Planning	Additional Notes
					Contractor's employee is enrolled on the FFD system. • Persons that are not declared fit to perform the work specified in the occupational health services job specification form are not be considered for employment by the *Contractor*. • The *Contractor's* employee must be in possession of the medical assessment results and other relevant documentation when he/she arrives on site to start the FFD process.
Work Permit		**X**	Work permits to be obtained before registration takes place	*Contractor's* own planning	• Terminate Process Hold Point • Non South African Citizens are required to be in possession of the relevant Work Permit as required by the Immigration Act before access is considered. • Persons not in possession of a valid work permit is not be considered for employment by the *Contractor*. • The *Contractor's* employee must be in possession of the original work permit when he/she arrives on site to start the FFD process.
Registration on FFD System	**X**	**X**		*Contractor's* own planning	• *Contractor's* employees are registered on the *Employer's* FFD system by a person appointed by the *Employer*. This could be a *Contractor* employee, if appointed by the *Employer.* The *Project Manager* is responsible to arrange this activity. Registration is only performed if the *Contractor*'s employee is in possession of all the documentation required for registration • If the *Contractor's* employee

Activity Description	***Project Manager / Employer***	***Contractor***	**Requirements**	**Planning**	**Additional Notes**
					is in possession of all the required documents, the individual will be registered and issued with a bar coded form.
Training Requirements Form	**X**	**X**	*Project Manager* and *Contractor* to supply	*Contractor's* own planning	• The scope of each *Contractor* employee's work requirements are to be assessed to identify the training and/or technical assessments that are required before work may commence. • All *Employer* training sessions includes an assessment at the end of each session. Persons that do not pass any training assessments and/or technical assessments as identified for the scope of work are not allowed to continue with the FFD process and shall be required to leave the Site. • The *Project Manager* identifies any specific training needs of each individual or group of individuals (based on the planned work scope) and ensures compliance to the training requirements identified for the specific duties before access to Site is considered. • The *Contractor's* employee must be in possession of the training requirements form when he/she arrives on site to start the FFD process.
FFD Bookings	**X**	**X**		*Contractor's* own planning	• *Contractor*'s employees are booked on the *Employer's* FFD system by a person appointed by the *Employer*. This could be a *Contractor* employee, if appointed by the *Employer*.
Confined Space Training		**X**	Training that the *Contractor*'s employee must	*Contractor's* own planning	Only if required

Activity Description	*Project Manager / Employer*	*Contractor*	Requirements	Planning	Additional Notes
			complete (only if required)		
Basic Rigging Training		**X**	Training that the *Contractor*'s employee must complete (only if required)	*Contractor's* own planning	Only if required. The *Contractor* verifies the validity of prior learning
Non-Disclosure Agreement		**X**	All *Contractor* employees are required to sign a non-disclosure agreement	*Contractor's* own planning	• The *Contractor* ensures that a non-disclosure agreement is signed form is signed by each employee before the person is registered to start the FFD process. These forms are obtainable from the *Employer* at Koeberg.
Security Permit Application	**X**	**X**	*Project Manager* and *Contractor* to supply	*Contractor's* own planning	• The *Contractor* ensures that a security permit application form is completed for each employee, before the person is registered to start the FFD process. These forms are obtainable from the *Employer* at Koeberg. • It is important that the form is completed by the *Contractor* in conjunction with the *Project Manager*. The form identifies the security areas that the *Contractor's* employee is required to enter for the execution of the tasks. • The *Contractor's* employees must be in possession of the security permit application when he/she arrives on site to start the FFD process.

2.5.4.3 Fraudulent Documents

The *Contractor's* employees that have presented fraudulent documentation are permanently denied access to the *Employer's* Koeberg site.

2.5.4.4 False Declarations

The *Contractor's* employees that have made false declarations are permanently denied access to the *Employer's* Koeberg site.

2.5.4.5 FFD requirements after registration takes place

Activities to be performed after the *Contractor's* arrival at the Site

Activity Description	***Project Manager / Employer***	***Contractor***	**Requirements**	**Planning (excludes waiting time during high volume periods)**	**Additional Notes**
Enrolment on FFD System	X	X	*Contractor's* employees shall be enrolled on the *Employer's* FFD system by the *Employer's* Security Group when they arrive on site.	10 min	A *Contractor's* employee will not be allowed to attend any further FFD activities if he/she is not enrolled on the FFD system and issued with a bar coded form.
Drug Test	X	X	All the *Contractor's* employees are required to perform a drug test administered by the *Employer*. This test will be done notwithstanding the test done by the *Contractor*.	30 min	The *Contractor's* employees that fail the drug test are not allowed to continue further on the FFD process and will be required to leave the Site and will be denied access for at least 12 months.
Criminal History Verification	X	X	All *Contractor* employees that apply for a security permit to access the Site are required to give consent to the *Employer* to verify their criminal background. This activity is performed on site by the *Employer's* Security staff for South African citizens by the taking of a set of finger prints and forwarding same to the SAPS for verification.	30 min	South African citizens who have obtained their criminal records direct from the South African Police are only required to provide the *Employer*'s Security staff with a set of fingerprints, for record purposes. Non South African citizens are required to provide proof of their criminal history. The criminal history report from their country's law enforcement agency or INPO (USA citizens only) is dated within three months of their required access date. *Contractor* employees with a criminal background that is deemed to be a security risk to Koeberg are denied access to the Site
Health Verification	X	X	*Contractor* employees are required to report to the *Employer's* Health Services section where the medical examination performed off-site will be verified to ensure that all requirements have been met.	30 min	The duration of this activity is approximately 30 minutes

Activity Description	*Project Manager / Employer*	*Contractor*	Requirements	Planning (excludes waiting time during high volume periods)	Additional Notes
Induction Training including: • SAT • PIT • FME (Generic) • Human Performance	X	X	**Site Access Training (SAT)** *Contractor* employees that are required to work outside the protected area of KNPS are required to complete the SAT course before work may commence. **Plant Induction Training (PIT)** *Contractor* employees who are required to work inside the protected area of KNPS are required to complete the Plant Access Training (PIT) course before work may commence. **Foreign Material Exclusion Training (FME)** *Contractor* employees coming to site that require access to FME zones or will perform any hands-on work on the plant are required to complete this training. **Human Performance Training (HPT)** *Contractor* employees that are required to work inside the protected area of KNPS shall	8 hours	**Site Access Training (SAT)** The SAT course is designed for persons working only in the owner controlled area (OCA). Their security permits will not allow them access to the protected area of KNPS. *Contractor* employees that do not successfully complete the SAT course shall not be allowed access to the Site. **Plant Induction Training (PIT)** *Contractor* employees that do not successfully complete the PIT course are not allowed access to the Site. *Contractor* employees required to perform work in the intake basin are required to pass the PIT **Foreign Material Exclusion Training (FME)** *Contractor* employees that do not successfully complete the FME course are not allowed access to FME zones. Personnel required to perform hands-on work on the plant and for which FME was identified as part of the training requirements that do not complete the FME course successfully are not allowed access to the plant **Human Performance Training (HPT)** *Contractor* employees that do not successfully complete the HPT course are not allowed access to Site. *Contractor* employees required to perform work in

Activity Description	*Project Manager / Employer*	*Contractor*	Requirements	Planning (excludes waiting time during high volume periods)	Additional Notes
			complete the HPT before work may commence.		the intake basin are required to pass the HPT course.
Induction to Working at Heights / Material Handling	X	X	*Contractor* employees are required to successfully complete the required Working at Heights/ Material Handling training before working at heights or handling material is considered.	8 hours	Failure to successfully complete the Working at Heights / Material Handling training will result in work at heights or handling material being prohibited
Induction to Confined Space	X	X	*Contractor* employees are required to successfully complete the required confined space training before access to confined space is considered.	2 hours	Failure to successfully complete the confined space training will result in access to confined space being restricted
Induction to Basic Rigging	X	X	*Contractor* employees are required to successfully complete the required Rigging training before rigging work is considered.	8 hours	Failure to successfully complete the Rigging training will result in rigging work being prohibited
Training	X	X	*Contractor* employees are required to work as supervisors must successfully complete the required supervisor training before work is considered.	2.5 days	Failure to successfully complete the training will result individual being prohibited to do supervision
Technical assessment • Mechanical • Machining • MC&I • Electrical • Welding • Pipe Fitting • Civil TA 4 • I&T • MSS	X	X	*Contractor* employees who are required to perform work of a technical nature inside the protected area of Koeberg are required to perform technical assessments and be authorised to perform the work that they have been assessed for.	4 h - 16p 12 h - 3p 16 h - 16p 8 h - 4p 4 h - 6p 6 h - 4p 6 h – 4p 8 h – 4p 6 h – 4p	The *Contractor* is responsible to indicate the work that the *Contractor's* employee will be performing on the Site. *Contractor* employees that do not successfully complete the technical assessment shall not be allowed to perform work on the Site. The duration of this activity depends on the type of work discipline and scope and is between 4 hours and two days.
Final acceptance and Issuing permit	X	X	All required FFD requirements are completed successfully before final acceptance is processed and a security permit is issued by the Security Group.	30 min	

2.5.4.6 Medical Exam

Medical examinations are done by *Project Manager* approved external medical practitioners. These are:

Occupational Health Practice	**Contact Person**	**Telephone**	**e-mail address**
Life Occupational Health	Magda van Zyl	0215917050	Magda.VanZyl@lifehealthcare.co.za
Incon	Benita Du Preez	021 975 2694 ext. 2001	benita@incon.co.za
OCSA	Sibusiso Ngubane	0219810141	sibusison@ocsa.co.za
EOH	Pam Kinnock	0212527750	Pam.Pinnock@eoh.co.za
Fair Care Health	Colleen Paul	021 552 1377 l	hmalaka@msn.com

The *Contractor* is responsible for the cost and completion of the medical examination by his personnel prior to them coming to Site.

The *Contractor* is liable for payment of medical examinations and COVID -19 screening of staff.

2.5.4.7 COVID-19 controls that must be followed:

- Mask shall be provided by the *Contractor* and employees will wear it at all times while at the Site
- Temperature screening must be done outside of FFD centre in the allocated location, before proceeding to the Medical Centre reception desk.
- Hand sanitisers are in place and the practicing of social distancing will be strictly adhered to.

2.5.4.8 Exit procedure

The *Contractor* ensures that permit holders that no longer require access to the Site follow the FFD exit procedure. Failure to do so will result in the *Contractor's* employee being denied access in future.

The duration of the exit activity is approximately 90 minutes and includes an exit medical examination.

2.5.4.9 Security check points

Prior to access to Site, the *Contractor* passes through various security check points, via entrance at the R27 access gate, entrance at the Duynefontein entrance and at Access Control Point 1 (ACP-1). All temporary worker/visitors permits are issued at ACP-1.

2.5.4.10 Access to radiological areas "Controlled Zones" and reactor building

Where work is to be performed in a radiological area (Controlled Zone), the *Contractor* needs to pass through a dosimetry-issue check point.

General access for inspections and measurements in the reactor buildings are not allowed during the operation of the plant and are limited during the refuelling outages with access limitations in accordance with KSA-062.

Access to radiological areas is subject to all training and verifications being completed as stated in this Works Information.

2.5.4.11 Prohibited / unauthorised items on site

In terms of the National Key Point Act 102 of 1980, the KNPS is a declared National Key Point (NKP). The National Key Point Act requires and empowers the owner of the National Key Point (Power Station

Manager), to implement measures that will ensure the security of the National Key Point. The National Key Point area at the power station is the area within the protected area barrier (ACP-2 inwards).

One such security measure is procedure KAA-777 (Process for access to Koeberg Nuclear Power Station). The procedure stipulates that the following items are prohibited from being brought onto site, unless specifically authorised:

- explosives or components thereof,
- habit forming drugs,
- alcohol,
- mercury,
- acids,
- cellular phones,
- firearms, ammunition or any part thereof and
- cameras.

Contractor personnel violating the procedure will be investigated and may result in action being instituted against such individuals and possible removal from site.

To keep the *Contractor* informed, pictograms of the items are placed at all ACP-2 access points and it is also addressed in the Plant Access Training Course (PAT). It is the responsibility of each of the *Contractor*'s employees to ensure compliance and to refrain from bringing prohibited/unauthorised items onto site.

2.5.5 Vehicles and tools / equipment

All equipment and tools are subject to a security screening before they are allowed on Site. All equipment and tools must be listed and specified before they are brought on Site. This list will serve as evidence for removal permits upon Completion of the service. Vehicles are only allowed on if justification is provided to the that such a vehicle is essential to Provide the Service.

2.6 Quality Assurance and Control

2.6.1 Quality assurance requirements

The *Contractor* complies with the general quality requirements of DSG 310-087 Revision 2A and 238-103 Revision 2. Additional quality requirements are provided in the TRS 240- 152358699 Revision 1.

The design and installation *works* described in this contract are classified Q2/L3, the *Contractor's* Quality Management System (QMS) must be compliant to the requirements of ISO9001:2015.

The *works* are subject to a Quality Assurance Program in accordance with Section 3.2 of 238-103 Revision 2. A Quality Plan, specific to each manufacturing and installation activity, is to be established and submitted to the *Project Manager* for acceptance before commencement of any work.

The *Contractor's* quality assurance system is also subject to the acceptance by the *Employer*.

The *Contractor* ensures that any Subcontractor employed by him has and implements a Quality Assurance Programme to meet the quality assurance requirements of the *Employer.*

The *Contractor* controls and supervises his Subcontractor's quality plans (including manufacturing quality plans). The *Contractor* reviews and accepts all plans, prior to submission to the *Project Manager*, for his acceptance. All Subcontractor components are verified by the *Contractor's* technical representative(s) before use or installation.

If the Subcontractor must perform work in terms of the *Contractor* compiled quality plans, the Subcontractor also reviews and accepts the use thereof.

The *Employer* reserves the right to at any time audit and/or monitor the control between the *Contractor* and Subcontractor, as well as the performance of the *Contractor's* Subcontractor*.* Such audits are done by prior notification and in liaison with the *Contractor*.

The *Contractor* ensures that his staff and Subcontractors are conversant with the content of the *works* as defined by the Works Information, quality control plans/work plans and work instructions.

Contractor's authorisation of personnel (including Subcontractor personnel), applied for Providing the Works, is made available to the *Project Manager* prior to the start of the work for which the authorisation is done.

The *Contractor* retains records of internal reviews performed by its personnel. The records provide objective evidence of who performed the review and the level of detail of the review. This requirement is also applicable to review of Subcontractor deliverables. Where considered necessary, the *Project Manager* may request such review records and the *Contract*or provides such information without limitation.

Where considered necessary, the *Project Manager* may request the root cause analysis and associated corrective action plan that the *Contractor* has established to deal with non-conformances / issues and / or Defects related to Providing the Works. The *Contractor* provides such information without limitation.

2.6.2 *Contractor's* Quality Control Requirements

- The *Contractor* ensures that all work (*Contractor* and Subcontractor work) is carried out in accordance with the quality control plans or any other specifications through written instructions from the *Project Manager.*
- The *Contractor* ensures that all specifications and requirements are communicated to the relevant parties in his organisation and does not deviate from it.
- All documentation has a clearly stated revision number and previous similar documentation is revoked.
- All quality related problems/issues are reported and resolved as Defects in terms of Core Clause 42.2.
- All completed work is signed off in the quality control plans as the work proceeds and all the relevant signatures are on the documentation.

2.6.3 *Contractor's* Quality Control Plans (QCPs)

- The *Contractor* compiles and submits to the *Project Manager* for acceptance, a quality control plan (QCP), showing all agreed hold, witness, and verification points prior to commencement of *works*
- The QCP's are accepted by the *Project Manager,* the *Contractor,* and the *Employer's* Appointed Inspection Authority/QA representative applicable) prior to the commencement of work
- The *Contractor's* and Subcontractor's quality control programmes are subject to the acceptance by the *Project Manager*. Components supplied by Subcontractor's are verified by the *Contractor's* technical representatives, prior to installation - this verification is documented in a Quality Control plan and separately priced under compulsory activities under Activity Schedule
- The *Contractor* provides all completed QCPs, prior to PTW clearance, to the *Project Manager* inclusive of all proof of acceptability (i.e., surveillances / hold points / witness points signatures, calibration certification / etc.)

The QCP typically consist of the following as a minimum:

- A cover page that includes and makes provision for the following:
  - Document unique number
  - Revision number
  - Page number
  - Provision to incorporate all inspection report numbers
  - Plant/system worked on
  - High level description of work execution

- A page which includes a high-level logical sequence of work execution
- A page which includes:
  - Drawing numbers
  - Abbreviations
  - Records numbers
  - Procedures numbers
  - Reference document numbers
  - Certificate numbers and references
- The work execution logic and sequence.
- Hold and witness points
- A Materials summary that includes:
  - Material quantities and dimensions
  - Material certificate numbers or receipt inspection reference numbers with adequate traceability to material/other certificates.
- A thickness test report where thickness tests are carried out on components. The thickness test results are recorded, and the positions of the measurements are traceable to the specific area of testing against the records.

2.6.4 The *Contractor's* Quality Control Representative(s)

- The *Contracto*r and his Sub*contractor* employs quality control representatives, with appropriate proven experience. This representative reports directly to the *Employer's* Project QC Group, for the duration of the site implementation phase of the contract. This is priced separately as stated under compulsory activities under Activity Schedule CSC / SCC
- The *Contractor's Project Manager* and design staff is present at the CSC / SCC inspections (KAA-664), to ensure the quality of the installation.

2.6.5 Quality Assurance Data Packages (QADP)

Quality Assurance Data Packages (QADP) are required for all work, plant, Equipment, and components. The *Contractor* provides the complete QADP, for the *Project Manager*'s acceptance, within fifteen (15) days of Completion, in terms of Core Clause 30.2. The QADP requires all information as required by the applicable codes and standards and Eskom Quality Assurance Document 238-103. The *Contractor* shall supply a QADP that includes, but is not limited to, the following:

- Manufacture Quality Plan;
- Installation *works* quality plan;
- Rigging quality plan;
- Calibration certificates of the *Contractors* test Equipment used during the *works*;
- Material Certificates;
- Non-Destructive Examination (NDE) Records (if applicable);
- NDE Technical qualifications and authorisations (if applicable)
- Test Records ;
- Weld specifications, Welding procedures, Welder Authorisations and Welder qualifications
- Non-Conformances;
- Authorised component drawings and specifications;

- Seismic report (if applicable) ;
- Conformance Certificates;
- Certificates of Compliance;
- Disconnection/Re-connection sheets;
- Construction Status Certificates;
- Safety Clearance Certificates;
- *Contractors* certificates of conformance;
- Material traceability documentation from mill to end product;
- *Contractors* inspection and test certificates, etc. as required by the applicable technical specifications;
- *Employers*-accepted concessions/production permits as applicable;
- Inspection release reports issued by the *Employer*, or its inspection agency;
- Completed Quality Control Plans and supporting documentation used in the execution of the contract; and As-Built Drawings
- End of Manufacturing report as required by PP-0012, (when applicable)

2.7 The *Contractor's* Plan / Programmes for the *works*

2.7.1 Plan / Programme constraints and requirements

The *Contractor* prepares and submits at the stated intervals, all programming documentation described in this section, the layout of which is subject to the *Project Manager's* acceptance.

All work performed at KNPS are planned and scheduled in accordance with the requirements stated in:

- KLA-023 for outage related *works*
- KAA-721 (for non-outage related *works* – including pre-outage installation *works*.

Note that the above makes specific reference to the timelines to be adhered to for scheduling the *works*. As a general guide, outage work must be finalised and detailed SAP notifications, orders and operations raised on the *Employer's* SAP system at 6 months prior to the start of the outage; and for non-outage work, the SAP notifications, orders and operations must be raised 12 weeks prior start of work. "Finalised" means that the work plans and test procedures are completed, which include any related risks assessments associated with the work to be performed.

2.7.2 The Plan / Programme

The *Contractor* shows on each Plan / Programme which he submits for acceptance

- the starting dates, access dates and Completion Dates,
- planned Completion,
- the order and timing of the operations which the *Contractor* plans to do in order to Provide the Service,
- the order and timing of the work of the *Employer* and Others, as last agreed with them by the *Contractor* or, if not so agreed, as stated in the Works Information or Task Order,
- provisions for
  - o float,
  - o time risk allowances,
  - o health and safety requirements and

  - the procedures set out in this contract,
- the dates when, in order to Provide the Service in accordance with his programme, the *Contractor* will need
  - access to a part of the *Site*, if later than its access date stated on the Task Order,
  - acceptances,
  - Plant and Materials and other things to be provided by the *Employer* and
  - information from Others,
- for each operation, a statement of how the *Contractor* plans to do the work, identifying the principal Equipment and other resources which he plans to use,
- other information which this Works Information requires the *Contractor* to show on a Plan / Programmes submitted for acceptance,
- the services and work (programmes) of the sub-*Contractor*s,
- interfaces between Sub*contractor*'s as well as the interfaces between sub-*Contractor*s and the *Contractor*,
- all activities defined in each Task Order,
- dates for placement of orders for critical / major Plant, Material and Equipment,
- delivery to Site dates for Plant, Materials and Equipment,
- the Plan / Programmes revision number,
- performance percentage complete,
- physical percentage complete,
- original duration from baseline,
- remaining duration,
- all leads and lags need to be qualified and agreed with the *Project Manager*,
- the critical path is determined through the longest path of the schedule and the appropriate setting in Primavera applied. The critical path needs to be qualified and agreed with the *Project Manager*,
- the Programmes needs to be resources loaded, clearly indicating role, planned man hours,
- key milestones which including payment milestones linked to a deliverable list of activities for each Task Order,
- agreed calendars which will clearly indicate working days per week, working hours per day, shift work and holidays for the duration of the project life cycle. Should the *Contractor* appoint a Sub-*Contractor*, the same applies,
- upon acceptance of Plan / Programme, activity original durations (planned durations) may not be changed. The *Contractor* may only change remaining durations,
- project name, baseline and update cycle,
- a baseline indicating all accepted compensation events, All agreed compensation events to be shown in the programme logically linked to the affected list of activities,
- retained logic, use planned finish dates and define critical activities through the longest path. and
- the Primavera duration type setting of "Fixed Duration and units/time" and the percentage type setting of "Physical Percentage complete".
- For the sake of validity check, and change management, the contractor should submit "The schedule basis document" together with the plan/programme. The schedule basis document describes essential elements of information, presenting (where and how) the requirements of this contract are applied in the plan/programme."

Networks are constructed to reflect the possible (instead of probable) sequences of activities, using resource scheduling to stagger the performance of activities into the most probable sequence.

A separate Programme (Outage Implementation Programme) detailing pre-outage implementation and outage implementation may be compiled for each refuelling outage. This facilitates integration of the *Contractor's* outage Programme into the *Employer's* overall outage plan. The *Contractor*, however ensures that the start and finish dates of the "Outage Implementation Programme" corresponds to the Outage Implementation dates of the Accepted Plan / Programmes.

For the sake of compatibility, the *Contractor* prepares his programme on Primavera 15.1 or later version of the computerised planning software and utilises it for all planning, progress monitoring and reporting.

2.7.3 Reporting on progress and remaining duration

The method for reporting on activities in progress is by physical percentage complete and remaining duration, i.e. the time, in working days, needed to complete the activity from the report date. Once an activity has started, the remaining duration is assessed for each update.

Automatic reduction of remaining duration as the report date moves forward is not accepted.

2.7.4 Actual dates

When Completion of any activity is confirmed by quoting document numbers, these numbers are given in the notes and are appended, e.g. letters of acceptance, suborders, drawings, inspection certificates, delivery notes, etc. The actual start and finish of all activities are reported and included in the Plan / Programmes.

2.7.5 Time Now Date

The 'Time Now Date', unless otherwise agreed between the *Project Manager* and the *Contractor*, is the monthly assessment date of each programme submission...

2.7.6 Planning constraints

The *Contractor* makes allowance for incorporation of *Employer* acceptance review comments for documents delivered to the *Project Manager* for his acceptance.

The *Contractor* does not plan for any *Employer* activities during the period of week 51, week 52 and week 1 of each year unless such a period falls within the implementation window of the *works*. Should any reviews be planned during this period, then the review periods need to be agreed, upfront, with the *Project Manager*.

During refuelling outages, the *Employer's* resources may be limited to perform acceptance reviews, and should any reviews be planned over outage periods, then the review periods need to be agreed, upfront, with the *Project Manager*.

2.7.7 Outage planning and integration

Outage work is limited to the *works* which can only be performed during the outage and *works* considered of too high risk (based on its accepted risk assessment) to be performed on-line (prior to outage).

On-line work is performed prior to the outage and the *Contractor* includes the activities on the Programme as well as makes the necessary planning allowances for it. On-line work will only be approved subject to a *Supervisor* (and where applicable, *Employer*) accepted risk assessment.

To manage the occupancy of the Working Areas during implementation, the *Contractor* attends the "Tabletop" meetings with the *Employer's* Outage representative in order to discuss area workload and to integrate and schedule the *Contractor's* activities as such as to allow sufficient space for implementation.

2.7.8 Outage dates

The *Employer* may change the proposed outage implementation dates due to any reason with no impact on the Prices within the framework described below:

- For *Employer* proposed delays to outage start dates in excess of 30 days, the *Employer* give 120 days' notice;
- For *Employer* proposed delays to outage start dates in excess of 15 days, the *Employer* give 60 days' notice;
- For *Employer* proposed delays to outage start dates between 7 and 15 days, the *Employer* give 45 days' notice;
- For *Employer* proposed delays to outage start dates between 1 and 7 days, the *Employer* give 30 days' notice; and
- For *Employer* proposed expediting (bringing forward) an outage start date, the *Employer* give 30 days' notice for each week (7 days) from the start date on the accepted programme.

The *Employer* may also change the proposed outage implementation dates, with no impact on the Prices, if the *Contractor* is late and is the cause of the change.

2.7.9 Outage readiness review

At 2 months prior to the allocated implementation Outage, the *Employer* performs a readiness review and if the *Contractor* is proven to not be ready in terms of KLA-023, the *Employer* has the right to allocate the work to another outage, with no cost impact to the *Employer*.

The *Project Manager*, in conjunction with the *Employer* holds a readiness review to assess the *Contractor's* overall readiness to implement the *works*.

Specific items that forms parts of this review include (but are not limited to):

- Documentation (design, site implementation file acceptance)
- Planning (detailed planning including resources and working times)
- Resources (qualification, training plan and mobilisation progress)
- Plant and Materials (delivered to Site and accepted/receipt inspected)
- Safety (risk assessments, mitigation and prevention, construction regulations)

Should the review conclude that the *Contractor* has substantially failed to meet the required Key Dates or have failed to take subsequent corrective action to demonstrate a high level of confidence in terms of its readiness to implement the *works*, the *Employer* retains the right to reschedule the implementation of the *works* to the next opportune outage with no additional compensation due, by the *Employer*. It is hence critical that the *Contractor* ensures that Key Dates as stated in the Contract Data are adhered to and where deviations exist, that effective corrective action is taken to resolve any issue/delay.

2.7.10 Planner requirements

The *Contractor*'s planner is a key person, and his name is included in the Contract Data – Part Two, data provided by the *Contractor*. This key person must have intimate knowledge of ECC Core Clause 3 and specifically the requirements as set out in ECC Core Clause 31.2.

2.7.11 Monthly progress reporting

The *Contractor* submits to the *Project Manager* a monthly report following a monthly report no later than the 24th day of each month. The report contains the following information as a minimum requirement:

- Executive summary. (Narrative identifying major movement within the reporting period.)

- Revised programme in paper and software copy (.pdf and .xer file format) for *Project Manager*'s acceptance indicating, actual progress of work against last Accepted Programme. The inclusion of the primavera Log is recommended with the corresponding .xer file in txt format.
- updated Plan / Programmes for *Project Manager*'s acceptance indicating, actual progress of work against last Accepted Plan and Programmes and the baseline,
- critical path review of the Plan / Programmes,
- man, hour budget planned verses actual S-curve,
- time risk allowance consumed,
- executive invoice summary (narrative identifying major movement within the reporting period),
- updated status on the Document Delivery List (DDL),
- Updated "List of Applicable Documents" which is a list (table) indicating the "current accepted" revision as well as the status of any later revisions of documents considered key in the control of Providing the Works and include the following as a minimum:
  - Contract Quality Plan
  - Scheme Design
  - Installation Design
  - Affected Work Plan
  - Test Procedures
  - Safety Evaluation (Screening/Evaluation/Justification)
  - Safety, health and environment (SHE) plan,
  - Non-conformance reports dashboard,
  - *Employer's* waivers,
  - Operational experience report related to the *works* and
  - Safety Case
- List of Activities which:
  - were completed during current reporting period per discipline, (including the activities of the *Employer* and Others);
  - are in progress
  - activities of the *Employer* and Others;
  - are to be undertaken during the next reporting period per discipline, including the activities of the *Employer* and Others;
  - near critical activities (emerging from previous reporting period)
  - are behind schedule together with an action plan on how the delays are to be rectified.
- A schedule of all material procurement activities, including time for fabrication and delivery of manufactured products. The interdependence of procurement and construction activities is included in the schedule.
- Proposed monthly assessment information which is based on the list of activities that were completed during the current reporting period.
- Revised activity schedule which indicates projected future cash flow
- Key issues / Items of concern and corrective actions.
- Progress curves, as a minimum, payment versus time,
- Early warning log,
- Compensation event log,

- Critical activities log,
- completed and updated Plan / Programmes in .xer and .pdf file format.

2.7.12 Outage control / work control interface

Activity Description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Provision of *Employer* outage schedule	**X**		The *Employer's* outage schedule indicates sufficient detail for the *Contractor* to effectively determine installation windows for various modifications and/or phases of modifications.	In accordance with Accepted Plan / Programmes	Provision of *Employer* outage schedule
Modification isolation plan / requirements and determination of relevant implementation window(s).		**X**	The *Contractor* provides the required information and supports the *Project Manager* with interfaces to OCC / work control and operations.	In accordance with Accepted Plan / Programmes	
Modification implementation schedule (including testing).		**X**	For high priority work, the planning requirements for implementation are agreed outside the requirements of KLA-023, KAA-501 and KAA-721.	In accordance with KLA-023 and KAA-721.	KLA-023: Outage *works*. KAA-721: Non-outage *works* – including pre-outage *works*.
Inclusion of implementation schedule in overall outage schedule / weekly plan.	**X**		Physical linking and inclusion into overall outage schedule / production plan.	In accordance with Accepted Plan / Programmes	
Verification of implementation schedule in overall outage schedule / weekly plan.		**X**	The *Contractor* verifies and confirms that the outage schedule / weekly plan is correct.	In accordance with Accepted Plan / Programmes	

Activity Description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Modification documentation release plan		**X**	The *Contractor* compiles the document release plan. For a single modification, this is the document in the DCIF indicating when the documents are to be released during the modification implementation. In exceptional cases it may be required to create temporary operating instructions (TOIs), etc. until all other modifications on the system are completed and the system procedure is released. The document release plan will indicate and reference all TOIs and other strategies implemented to ensure that the operators at all time have correctly updated information in the control room. For TOIs, this service is supplied by the *Employer's* OPG group. It is the *Contractor's* responsibility to provide inputs and assistance in assuring that the document release plan is realistic and up to date.	In accordance with Accepted Plan / Programmes	*Contractor* will identify TOIs. TOIs to be managed by the *Employer*. Refer to document KGB-004 on guidelines to compile operating procedures.

Activity Description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Permit to work (PTW's) and sanction for test (SFT) and test applications (TA).		**X**	The request is completed by a responsible person (RP), supplied by the *Contractor* in accordance with *Employer's* plant safety regulation (PSR) procedures. Permit to Work and Sanction for Test requests needs to be raised on the *Employer's* PTW system. Isolation plans are referenced in the PTW request. PTW are raised in accordance with *Employer* procedure KAA-667.	In accordance with Accepted Plan / Programmes	A responsible person in terms of the OHSA is authorised to take out PTW's and SFT's to perform / supervise work and tests on the *Employer's* plant.
Management and scheduling of interfaces between outage control centre (OCC) / work control (WC) and the *Contractor*.	**X**		The *Contractor* provides the implementation planning. The *Employer* integrates the planning in the overall outage schedule. The *Contractor* supports the *Employer*. Interface in liaison with the *Project Manager*.	As required	Planning as per KLA-023 and KAA-721 are regarded as fixed (ruling time-line).
Notification to *Contractor* of any changes to schedule.	**X**		The *Employer* notifies the *Contractor* of any changes to the implementation schedule due to the *Employer* activities.	As required	
Outage meeting / production meeting progress feedback.	**X**		During planning stage of project the *Contractor* must be available to support the *Project Manager* during feedback at these meetings. Where required the *Contractor* attends the meetings.	As required	The meetings are held weekly.

Activity Description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Daily outage / production feedback during implementation and problem resolution.	**X**		During installation and testing the *Contractor* is available to support the *Project Manager* during feedback at daily outage and production feedback meetings. Where required the *Contractor* attends the meetings.	As required	
Conclusion	**X**	**X**	This activity group is part of the management function provided by the *Contractor* and extends over the duration of the project until Completion of the whole of the *works*.	In accordance with Accepted Plan / Programmes	Deliverable: Detailed modification implementation schedules (integrated with OCC plans) Documentation Release Plan Permit to Work and Sanction for Test Applications.

2.7.13 General

Activity Description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Site organisation chart and roster (*Contractor*)		**X**	Names, Main Responsibilities, Telephone numbers / Pagers / Mobile	In accordance with Accepted Plan / Programmes	
Support activities chart and roster		**X**	Names, Main Responsibilities, Telephone numbers / Pagers / Mobile	In accordance with Accepted Plan / Programmes	
Site representatives chart and roster (*Employer*)	**X**		Names, Main Responsibilities, Telephone numbers / Pagers / Mobile	In accordance with Accepted Plan / Programmes	

Activity Description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Kick-off meeting Implementation (Outage / non-outage)	**X**		The *Project Manager* arranges the meeting; the *Contractor* ensures that relevant personnel of the Site implementation team as well as project management team are present at the meeting. The venue for the meeting is on the Site.	In accordance with Accepted Plan / Programmes	
List of *Contractor's* Sub-*Contractor*s		**X**	To be supplied to *Project Manager* for *Employer's* PQA representative approval.	Minimum 8wks prior to start.	
List of Applicable Documents for Outage / non-outage Implementation		**X**	The List of Applicable Documents summarises the documentation to be used as reference during the implementation and testing phase of the modification.	In accordance with Accepted Plan / Programmes	
Acceptance of vehicle access to Site	**X**		Permission for access of a vehicle on the Site must be obtained from the *Project Manager* Vehicles are not allowed on the Site unless specific approval is obtained from the *Employer* and will only be considered for exceptional cases.	As required	
Site access permit applications		**X**	*Contractor* to complete forms himself.	As required	
Site access authorisation	**X**		At completion of all required access training.	5 days duration	
Arranging training and related competency tests / assessments.		**X**	Booking by *Contractor* - to fit in with normal routine course or *Contractor* to arrange a separate course for large number of people. *Employer* requirements relating to training of personnel are detailed in KSA-119.	As required	

Activity Description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Provide training and related competency tests/assessments.	**X**			As required	
Qualification and authorisation verification of all personnel to perform construction work for the *Contractor* for the service.		**X**	In accordance with the *Contractor*'s quality procedures and: • for performing welding activities, the *Contractor* ensures that all its welders comply to the requirements of KNM-001, • for performing non-destructive testing, the *Contractor* ensures that all its personnel are qualified in compliance with the requirements of KSA-037, • for performing scaffolding service, the *Contractor* ensures that all its personnel are qualified in compliance with the requirements of KSM-031, • for performing rigging service, the *Contractor* ensures that all its personnel are qualified in compliance with the requirements of KSA-132 and • for performing lagging service, the *Contractor* ensures that all its personnel are qualified in compliance with the requirements of KSM-032.	As required	
Checks for Sub-*Contractor*s agreement		**X**		As required	

Activity Description	*Project Manager*	*Contractor*	Requirements	Planning	Additional notes
Calibration of equipment	**X**		Where the *Employer* is required to calibrate equipment, the *Contractor* ensures that: • SAP orders are raised for the *Employer* to perform the calibrations. These SAP orders specifies in detail all the relevant calibration requirements • Equipment for calibration are supplied to the *Project Manager* at 3 months prior to start of the refuelling outage / implementation (for non-outage modifications)	T0-3 months	T0 = Start of refuelling outage / implementation window.
Conclusion	**X**	**X**	This activity group is part of the management function provided by the *Contractor* and extends over the duration of the project until completion of the whole of the service.	In accordance with Accepted Plan / Programmes	Deliverable: • Site Organisational Chart [Implementation] • List of sub-*Contractor*s • List of applicable documents • Office requirements • Records of authorised personnel involved with construction.

2.8 *Contractor*'s Management, Supervision and Key People

2.8.1 People

The *Contractor* submits an organogram showing all personnel, their categories of work, qualifications, and their lines of authority / acceptance to the *Project Manager for* acceptance.

The *Employer*'s standard for management and control of supplemental workers at KNPS is document in KSA-119 Rev 2.

The *Contractor* employs in and about the Provision of the Works only such persons that are careful, competent and efficient in their several trades and callings, to achieve nuclear safety, and the *Employer* reserves the right to object to and require the *Contractor* to remove from the *works,* forthwith, any person

employed by the *Contractor* in or about the Provision of the Works who, in the opinion of the *Project Manager*, misconduct's himself or is incompetent or negligent in the proper performance of his duties and such person is not again employed for the *works* without the written permission of the *Project Manager*.

The *Contractor*, in and about the Provision of the Works, provides evidence of skills assessment (including qualifications) for all its staff. *Contractor Project Manager*, QC and supervisors are required to present SAQA approved certificates (or equivalent), for the position that they fulfil. The *Contractor*'s *Project Manager* is trained on the NEC ECC3 prior the *access date*. Any personnel that do not meet the panel requirements will have their access to site revoked.

The *Contractor* ensures that the *Contractor's* employees are reasonably fluent in the language of the contract.

The *Contractor* maintains at all times a harmonious relationship with and co-operates with the *Employer* and all its suppliers and sub-suppliers or their employees who may be involved.

All radiation workers comply with such radiation protection standards as is required by the *Employer*.

2.8.2 Supervision

The South African Construction Regulations require the *Contractor* to appoint a full-time competent employee to supervise the performance of construction work. The *Contractor* (as principal *Contractor* in terms of the OHSA Construction Regulations) therefore appoints, in writing, a competent full time construction supervisor and where required an assistant supervisor, clearly stipulating all duties relating to the supervision of the particular project.

The *Contractor's* construction supervisor must be registered as a professional construction manager in terms of the Project and Construction Management Act, 48 of 2000

The *Contractor* may appoint additional people (assistant construction supervisor) to assist the construction supervisor to perform certain of his functions, but this does not relieve the construction supervisor of his or her responsibilities under the regulations. If the *Contractor* has not appointed additional people to assist the construction supervisor, and an inspector determines that the construction supervisor needs assistance, he can instruct the *Contractor* to do so, at no additional cost to the *Employer*.

No work may be performed, by the *Contractor*, unless in the presence of the *Contractor's* construction supervisor or assistant construction supervisor.

The *Contractor's* construction supervisor and assistant construction supervisor shall be fully conversant with the contents of the *Contractor's* health and safety plan including the following and shall stop any or all work which is not in line with these provisions:

- Risk assessments,
- Method statements, and
- Fall protection plan.

2.8.3 Construction health and safety practitioners

The *Contractor's* construction health and safety agent (as a specified category in terms of section 18 (1) (c) of the Project and Construction Management Professions Act No. 48 of 2000) is appointed to ensure that the *Contractor* complies with its statutory duties under the Occupational Health and Safety Act (Act No. 85 of 1993) and applicable regulations such as the Construction Regulation, etc.

2.8.4 The *Contractor's* designer

All engineering work is performed by suitably qualified and experienced individuals. One of the *Contractor's* engineering personnel required to sign as compiler, reviewer and approver of documents and drawings for

the required processes in KAA-501 and 331-86 shall be a registered professional engineer or equivalent as approved by the *Employer* in accordance with Engineering Council of South Africa (ECSA) guidelines.

The *Contractor's* designer:

- must take steps to ensure that the applicable requirements of the Works Information and the National Regulations are complied with in the design,
- must perform all actions, including site visits, to ensure dangers or hazards and as found conditions and installation constraints, relating to the *works*, are identified. Where sections of the site are inaccessible for inspection, this must be stated in his design, with the resultant assumptions / constraints,
- must take into consideration the health and safety specification submitted by the *Employer*, as well as the applicable legislation and regulations related to the *works*,
- must make available to the client all relevant health and safety information about the design,
- must inform the *Project Manager* and the *Contractor's* personnel, in writing, of any known or anticipated dangers or hazards relating to the *works*, and make available all relevant information required for the safe execution of the *works* upon being designed or when the design is subsequently altered,
- must follow the requirements of the nuclear design standard for KNPS (Ref: KSU-008), applicable to all on-site plant systems, structures and components and off-site plant systems, structures and components that affect the safe and reliable operation of the KNPS;
- must compile the design in accordance with 331-86 (Design Changes to Plant, Plant Structures or Operating Parameters),
- must, subject to the provisions of sub-paragraphs 1. and 3. above, ensure that the following information as a minimum is included in a report and made available to the *Project Manager* and the *Contractor's* personnel:
- for civil services:
  - a geo-science technical report where appropriate,
  - the loading that the structure is designed to withstand; and
  - the methods and sequence of construction process
- for mechanical services:
  - service or maintenance manual(s),
  - finite element analysis,
  - stress analysis report indicating material strength and code/specifications and
  - the methods and sequence of construction process.
- for electrical / control and instrumentation services:
  - service or maintenance manual(s),
  - PID drawings,
  - wiring diagrams and
  - the methods and sequence of construction process.
- may not include anything in the design necessitating the use of dangerous procedures or materials hazardous to the health and safety of persons, which can be avoided by modifying the design or by substituting materials,
- must take into account the hazards relating to any subsequent maintenance of the relevant service and must make provision in the design for that work to be performed to minimise the risk,
- must carry out the necessary inspections at appropriate stages to verify that the construction of the relevant design is carried out in accordance with his design,

- must stop the *Contractor* from executing any construction work which is not in accordance with the relevant design's technical, health and safety aspects,
- must in his or her final inspection of the completed service in accordance with the OHSA the health and safety aspects of the service and declare the service safe for use, prior to the *Project Manager* issuing the Completion Certificate and
- must ensure that during design process, cognisance is taken of ergonomic design principles in order to minimise ergonomic related hazards in all phases of the life cycle of the service

2.8.5 Key personnel

The *Contractor* ensures that all key personnel requiring access to Site meet the requirements of the *Project Manager*'s security and medical qualifications as well as training and experience generally required by similar utilities elsewhere in respect of similar work. Where required, these staff members also meet such requirements as the National Nuclear Regulator may stipulate from time to time.

The *Contractor* provides orientation and technical training for all key personnel requiring access to Site in accordance with the requirements of the *Project Manager*'s Radiological Safety Regulations, the *Project Manager*'s Industrial Safety Programme, and, in general, the whole framework of plant rules (as applicable) and regulations which may be in force at the *Project Manager*'s Site from time to time, which is available on request.

The following are considered key persons by the *Project Manager* and the *Contractor* submits a brief CV with associated records of qualification and related experience at the Contract Date:

- *Contractor*'s *Project Manager*
- *Contractor*'s planner
- *Contractor's Project Engineer*
- Construction and installation supervisor(s)
- Quality assurance representative
- Quality control inspector(s)
- Health and safety representative

2.8.6 Emergency mustering, accountability, and evacuation

Due to the nature of the Site, the *Contractor* is required to have full accountability of personnel at all times. It is therefore required that the *Contractor* has and maintains a current status and accountability list of all his personnel on Site. The accountability list is handed to the *Project Manager* each time a change occurs.

The *Contractor* ensures that his site representative takes full responsibility for this requirement and that he and his personnel are fully conversant with the mustering requirements as detailed in the *Employer*'s procedure KAA-611 Revision 5.

2.8.7 Site hours

2.8.7.1 Non shift staff

Employer working hours are 24 hours a day, 7 days a week during outage periods (this is to be included in the plan).

Normal working hours during non-outage periods are:

- Mon-Thu: 07h30 – 16h35
- Fri: 07h30 – 13h35
- On the last Friday of each month however, working hours will be from 7h30 until 12h00.

2.8.7.2 Shift staff:

In accordance with official, approved shift rosters.

2.8.7.3 Flexitime

*Employer's e*mployees who have a written agreement entitling them to work flexitime, the "Core Time" during which time cannot be flexed is from 9h00 to 15h00, whilst no employee may flex prior to 6h00 (Monday to Friday) nor after 18h00 (Monday to Thursday).

The *Contractor* takes due cognisance of the *Employer's* working hours whilst Providing the Works and performs regular reporting of person hours worked on a monthly basis to the *Project Manager*.

2.9 Invoicing and payment

2.9.1 Assessments

The *Contractor* includes in the Monthly Planning Report the proposed assessment information. Failure to submit such information on the assessment date will result in the *Project Manager* making his own assessment, based on available information.

The *Contractor* submits, separately, all documentation and certification in support of the proposed assessment information.

2.9.2 Records and forecasting of expenses and time charges

The *Contractor* shall submit forecasts of time charges for each assessment period and maintain records thereof.

Clear records of hours worked or time sheets in respect of all time charges shall be kept by the *Contractor* and shall indicate the resource utilised, location, duration, and times, associated expenses incurred, and a summary of the *works* rendered which shall be cross-referenced to deliverables rendered. In addition, the *Contractor* shall provide proof of how he is managing his staff working remotely due to COVID-19 related restrictions. The records of hours shall indicate the *Project Manager* the time spent. The *Project Manager* shall review all time sheets during.

The *Contractor* shall maintain records of all documentation and make available to the *Employer* any or all such documentation on request.

2.9.3 Invoices and Payment Arrangements

The *Contractor* ensures that the requirement in terms of Section 20(4) (C) of the Value Added Tax Act 89 of 1991 as amended by the Revenue Laws Amendment Act 45 of 2003, that the VAT registration number of the recipient of the tax invoice, appears on the said tax invoice in order for the invoice to fully comply with the requirements of a valid invoice for VAT purposes as contained in the said Section 10(4) (C), is adhered to. No payment will be made on tax invoices not fully meeting this requirement.

The *Employer's* VAT Registration Number is **4740101508**

All invoices are marked for the attention of:

The Accounts Payable Section
Koeberg Operating Unit
Private Bag X10
Kernkrag 7440
South Africa

Particulars to be included on the *Contractor's* Tax Invoice:

- the name and address of the *Contractor*,
- the date of the invoice,
- an invoice number,
- *Contractor's* VAT registration number (if applicable),
- *Employer's* VAT registration number,
- reference to Contract and / or SAP Task Order number,
- the amount paid to date,
- the price adjustment for inflation (where clause X1 is applicable),
- the value of the invoice split into payments as per the Price List and
- a descriptive title of the service covered by the Invoice and / or the Contract's assessment number

To enable payment against each applicable SAP generated Task Order the *Project Manager* and the *Contractor* must sign next to each line acceptance of the service, Plant and Materials or goods delivered on the applicable SAP generated Task Order. The signed copy of this SAP generated Task Order is promptly returned to the *Project Manager.*

Payment is made by means of electronic transfer. The *Contractor* therefore provides his banking details to the *Project Manager* within one week of the Contract Date.

The *Contractor* submits to the *Project Manager* a statement of account on or before the 5th of each month, after the Contract *starting date*.

2.9.4 Prices and Taxes

The Contract price is inclusive of any company taxes, customs duties, levies, withholding taxes, Value-Added Tax (referred hereinafter as "taxes, duties and levies") which may be levied in connection with this Contract on the *Contractor* by any South African authorities.

All taxes, duties and levies which may be levied on the *Contractor* outside or inside South Africa by any authority shall be borne and paid by the *Contractor*. Refer to *Employer's* Risks in Core Clause 80.1.

Both Parties shall work closely together on the requirements of the contract excluding providing tax advice of any kind to and/from either party. If it is necessary for one party to get documentation or assistance from the other party concerning tax formalities or to get any preferential tax treatment, the other party shall provide assistance in a timely manner.

2.9.5 Compensation Events

The Contractor, when notifying a Compensation Event in terms of NEC3 ECC, must state which Compensation Event under ECC Clauses it believes it to be e.g. Compensation Events under Clause 60.1 or in the Option Clauses.

2.9.5.1 Concurrent delay

If the *Contractor* incurs additional costs that are caused both by *Employer* delay and concurrent *Contractor* delay, then the *Contractor* may only recover compensation to the extent the *Contractor* is able to separately identify the additional costs caused by the *Employer* delay from those caused by the *Contractor* delay. If the *Contractor* would have incurred the additional costs in any event as a result of *Contractor* delays, the *Contractor* is not entitled to recover those additional costs

2.9.5.2 Mitigation of delay

The *Contractor* has a duty to mitigate the effect, of *Employer* risk events, on the *works* and the *Contractor* does all it reasonably can to avoid an impact on the Prices. The duty to mitigate does not extend to the *Contractor* to adding extra resources or to work outside its planned working hours.

2.9.5.3 Notification of Compensation Event

When a Compensation Event is notified, the *Contractor* must provide sufficient and sufficiently detailed information (contemporaneous documentation) illustrating the exact or near to exact impact the Compensation Event has or will have on the *Contractor*, to enable the *Project Manager* to assess whether to call for a quotation or not. Adding to this the *Contractor* must state which Compensation event under NEC3 ECC Clause 60.1 he believes it to be.

2.9.5.4 Quotation

The *Contractor* provides quotations for compensation events detailing the following items as a minimum:

- Introduction
- Executive summary
- Contractual basis of compensation event (Refer to ECC Core Clause 60.1)
- Details of the compensation event
- Assessment of compensation event (ECC Core Clause 63)
- Conclusion
- Accepted programme showing impact of delay ((ECC Core Clause 62.2) – If the programme for remaining work is altered by the Compensation Event
- Appendices:
    - Early Warning (ECC Core Clause 16.1) - if applicable
    - Notification (ECC Core Clause 61.3)
    - Instruction to submit quotation (ECC Core Clause 61.1 or 61.2)
    - Instruction to submit alternative quotation (ECC Core Clause 62.1) or to submit a revised quotation (ECC Core Clause 62.4) - if applicable
    - Any extension of time under (ECC Core Clause 62.5) - if applicable
    - Any other document(s) the *Contractor* may consider applicable.

For compensation events to be implemented, the *Employer* requires the *Contractor* to sign a compensation event register form. For any payments required as a result of the compensation event, the *Contractor* is required to submit the signed compensation event register form, at latest, prior to the 15th of the month in which any associated amount should be assessed. This is to allow sufficient time for the *Employer* to load the associated costs onto its SAP system.

It is specifically stated that the *Employer* will not accept any forecasted payments relating to “compensation event acceptance”.

2.9.5.5 COVID-19 pandemic

The spread of the COVID-19 Pandemic constitutes a Force Majeure event. The principal cause of the introduction of preventative measures by the government is the spread of the COVID-19 Pandemic. Hence the primary basis of any claim from the *Contractor* should be the spread of the COVID-19 Pandemic, i.e., a Force Majeure event, as opposed to the introduction or amendments to the existing legislation and or regulation.

The coronavirus outbreak could also result in a number of the compensation events being triggered under clause 60.1, such as the following examples:

- **60.1(4)**– The *Project Manager* gives an instruction to stop or not to start any work. due to the pandemic.
- **60.1(6)**– The *Project Manager* does not reply to a communication from the *Contractor* within the period required by this contract, because of imposed period of self-isolation.
- **60.1(14)-**A breach of contract by the *Employer* which is not one of the other compensation events in this contract.

2.10 Insurance Provided by the *Employer*

Insurance will be applicable as per insurance reference and Z clauses in the *Employer's* Contract Data.

2.11 Contract Change Management

The *Contractor* is responsible to document and resolve any required changes on his design/Equipment. The approval process indicated in this Works Information is adhered to, by the *Contractor.*

The *Contractor* adheres to the contract change management procedure for any changes to the scope of the *Works.* The details of the contract change management procedure are agreed between the *Project Manager* and the *Contractor* at the project kick-off meeting.

2.12 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.

2.13 Records of Defined Cost to be kept by the *Contractor*

The *Contractor* keeps all records of defined cost as well as payments & assessments of compensation events, for presentation to the *Project Manager,* for compensation events

2.14 Training Workshops and Technology Transfer

Operational, Maintenance and Engineering training is to be provided in accordance with the requirements stated below

2.14.1 Transfer of Skills to the *Employer*'s Personnel

The *Contractor* assists the *Employer* in the skills development of the *Employer's* personnel by accommodating such personnel, as mutually agreed, in the offices of the *Contractor* for the purposes of gaining an understanding of the system/technology.

If in the opinion of the *Contractor* the existing skills of the *Employer's* personnel can be utilised to the benefit of the contract, this can be mutually arranged. Additional costs will be for acceptance by the *Project Manager* prior to it being incurred, as part of the TSC Compensation event procedure.

2.14.2 Training: Operators, Maintenance and Engineering

Activity Description	*Project Manager*	*Contractor*	Requirements	Planning	Additional Notes
Provision of specific system / component training material (i.e., should the *Contractor* provide training on the system, the training material is included in the scope of supply) and completion of the Training Change Request.		**X**	• Training Change Requests (TCRs) are compiled in accordance with KAA-959. • *Contractor's* training material is provided with the TCR.	In accordance with Accepted Programme	Notification to be made by official communication. *Employer* to follow own process for TCRs.
Submittal of TCR to TMG	**X**		• Operations and maintenance training initial impact assessment performed by the Training Management Group (TMG)	In accordance with Accepted Programme	
Interface with operating and maintenance teams	**X**		• The *Project Manager* arranges the training	As required	

Activity Description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional Notes**
Training on nonstandard / new components / systems to KNPS		**X**	• Where training is required for nonstandard components, the *Contractor* provides a resource (on Site) to perform a once-off specialised training course to the Operations, Maintenance as well as Engineering personnel. • The training is performed to a level where at least one *Employer's* team, consisting of 5 individuals, is capable to adequately maintain and operate the new component / system. • Training of maintenance personnel is completed prior to completion of *works* installation. • Training of operations personnel is completed prior to start of implementation. • Training of engineering personnel is completed prior to start of implementation.	6 weeks prior to the start of the outage unless otherwise agreed.	Normally, operator training is performed during the training weeks of each shift and therefore will take at least six weeks to complete (there are six shifts).
Conclusion	**X**	**X**	• This activity is complete once the *Employer's* Training Management Group issued a letter to the *Project Manager* confirming that training is completed.	In accordance with Accepted Programme	Deliverables: • Training Change Request (TCR) • Training material for nonstandard / new components to KNPS

2.14.3 Equipment required to be supplied as part of the *works*

The *Contractor* determines and supplies the Equipment required to Provide the Works as well as the Equipment required to maintain the *works.*

3 Engineering and the *Contractor's* design

3.1 *Employer*'s design

The *Employer* will not be performing the design as this is included as part of the *Contractor's* scope for the *works*.

3.2 Nuclear Safety

Contractor adherence to appropriate national and international standards in the design, construction, operation, and decommissioning, as part of the *works,* is necessary for the successful implementation of the *Employer's* nuclear safety requirements.

The *Contractor* critically assesses the standards specified, by the *Employer*, to assure that they remain consistent with the latest information arising from operational experience and developments in science and engineering. Where specified standards do not suffice, an appropriate nuclear safety standard is proposed to the *Project Manager*, for acceptance.

3.3 Parts of the *works* which the *Contractor* is to design

The *Contractor* is responsible for the overall design and functionality of the service as detailed in the TRS 240-152358699 Revision 1.

3.4 Procedure for submission and acceptance of *Contractor*'s design

The *Project Manager*'s process for design which the *Contractor* has to comply with is detailed in the document Design Changes to Plant, Plant Structures or Operating Parameters no. 331-86. The *Contractor* enters this process at step D.

The *Contractor*'s design complies with all technical requirements as documented in the *Project Manager*'s TRS 240-128694927 Revision 1 as well as the requirements stated below.

The *Contractor*'s design, as a minimum, addresses Parts A, B, C and D of the *Project Manager*'s internal Design Template. The standard design format will be used by the *Contractor* i.e., Part A, B, C and D compiled as a single design document.

However, to allow a phased approach for the acceptance of the *Contractor*'s design, the *Contractor*'s design may be submitted in two parts: first a Scheme Design (Part A) and an Installation Design (Parts B, C and D).

3.4.1 Scheme Design Document (*Contractor's* Design – 1st Phase)

The *Contractor's* Scheme Design addresses all requirements stated in Part A of the *Employer's* internal Design Template and includes the following additional items:

- assessment of impact on security,
- assessment of impact on civil structures,
- failure Modes and Effects Analysis,
- environmental Impact Filtering,
- quality Assurance Requirements and

- Project Team Concurrence Sheet (Part D attachment of the design template)

The *Contractor's* Scheme Design is sufficiently detailed to addresses the elements identified in the Detail Design Review Report – 331-433.

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Authorisation of designers		**X**	The designers are authorised in accordance with the *Contractor's* quality system design procedures.	In accordance with the Accepted Programme	The *Project Manager* may request proof of the authorisations which the *Contractor* then supplies.
Compilation of the Scheme Design and independent review		**X**	The *Contractor* compiles the Scheme Design in accordance with his quality process. The *Contractor* submits the independent review report performed in accordance with the *Employer's* Detailed Design Review Report.	In accordance with the Accepted Programme	Any calculations included in the Scheme Design are those essential for the justification of the design. Detailed calculations that will not impact the design concept (i.e. pipe layout drawings and associated support calculations etc. can be provided as part of the Installation Design.)

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Notification of recommended plant identifiers with proposed classifications		**X**	The *Contractor's* request include, as a minimum, the following information in order for the *Employer* to verify the trigrammes and classification numbers: The unit number. (i.e. 0/1/2/6 or 9). (If it is 9, then the unit number where the parent trigramme is located is also provided). A detailed part functional description including the recommended tigramme. The location which specifies building and room number. The recommended classification for each trigramme allocation. The plant identifier's child/parent relationships (as per the hardware breakdown structure – to be developed as part of the Installation Design.)	In accordance with the Accepted Programme	Plant codification (trigramme numbers) and their associated classifications are recommended by the *Contractor* and accepted by the *Employer*. There may be iterations on this request i.e. one request for the Scheme Design and a second request when compiling the Installation Design.
Contractor Scheme Design approval and submittal for 1st *Employer* acceptance review.		**X**	Any design document submitted for acceptance reviews are approved by the *Contractor* in accordance with the *Contractor's* quality system design control procedure.	In accordance with the Accepted Programme	Submitted to the *Service Manager*.

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
1st Acceptance review from *Employer*	**X**		For the Scheme Design, the concurrence and specialist concurrence reviews are performed in parallel with the *Employer's* review. The *Project Manager* may arrange a Scheme Design review meeting with the *Contractor*. The *Contractor* attends this meeting.	Within 2 weeks of submittal.	The review meeting aims to ensure that the *Employer* review comments are well understood by the *Contractor*.
Address *Employer* review comments and submit for 2nd *Employer* acceptance review.		**X**	The *Contractor* addresses all the agreed and accepted review comments of the *Employer*.	In accordance with the Accepted Programme	Submitted to the *Project Manager*.
2nd Acceptance review from *Employer*	**X**		The *Employer* may raise additional review comments not identified during the first review. A Scheme Design review meeting may be requested, at the discretion of the *Project Manager*, depending on the number and nature of comments identified / resolved.	Within 2 weeks of submittal.	
Finalisation of Scheme Design and submittal for *Project Manager* acceptance.		**X**	*Contractor* finalises the Scheme Design and submits to *Project Manager* for acceptance	In accordance with the Accepted Programme	Submitted to the *Project Manager*.
Final acceptance review and acceptance	**X**		Acceptance of the Scheme Design is subject to all previous review comments of the *Employer* being adequately addressed.	Within 1 week of submittal.	
Verification of plant identifiers and SAP linking.	**X**		Verification of plant identifiers and SAP linking are performed in terms of *Employer's* own requirements	Within 2 weeks of notification	

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Conclusion	X	X	This activity group is complete upon the *Project Manager*'s acceptance of the Scheme Design.	In accordance with Accepted Programme	Deliverables: • Scheme Design

3.4.2 Installation Design Document (*Contractor's* Design – 2nd Phase)

The *Contractor*'s Installation Design addresses the remaining requirements relating to Parts B, C and D of the *Project Manager*'s internal Design Template and ensures that all requirements of the Scheme Design are met. The *Contractor*'s Installation Design consists of, but is not necessarily limited to; the following:

- detailed calculations (including seismic qualification calculations),
- detailed layout drawings,
- installation specifications,
- design commissioning requirements,
- configuration management file and
- procurement specifications consisting of classifications and the bills of material including the overall hardware breakdown structure (HBS).

The Configuration Management File consists of the *Project Manager*'s DCIF form including all mark-ups of associated documents referenced there-in. The submission of the configuration information is performed in accordance with the table below:

The functional description of the modification is sufficiently detailed to describe the overall impact of the modification on the plant i.e., it should not be required to consult logic diagrams etc. to interpret and understand the overall change and how the plant will operate following the change.

The *Project Manager*'s logo is added on all design reports. The *Contractor* may add his or his Subcontractor's logo to the documents.

The design demonstrates that all OHSA requirements have been met.

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Compilation of the Installation Design and independent review		**X**	The Installation Design includes any detailed design calculations not covered in the Scheme Design. The Documentation Identification Change Form (DCIF) lists all drawings, documents and procedures (operational, maintenance etc.) including the	In accordance with Accepted Programme	The Installation Design includes (but is not limited to) the following: Qualification of piping, plant (mechanical, electrical and instrumentation) for normal operating,

Activity description	*Project Manager*	*Contractor*	Requirements	Planning	Additional notes
			Safety Analysis Report (SAR) and Operational Technical Specifications (OTS) affected by the modification. The *Contractor's* designer discusses the potential OTS and SAR changes with the applicable *Employer* representative. All document change mark-up requests are to be registered for update (DDR No's, SAR & OTS Change No's) upon submittal of the Installation Design to the *Project Manager*. The *Employer* may, as part of its acceptance reviews, identify additional documents and drawings to be added to the DCIF following which the *Contractor* provides the mark-ups of those additional drawings and documents at the next submission for design acceptance review. The *Contractor* provides a comprehensive overview of the hardware breakdown structure for the overall modification with reference to associated part numbers and parent/child relationships and (where applicable) associated trigrammes. The lowest level of the hardware breakdown structure is that of the individual component that is commercially available as a spare from the recommended supplier. The *Contractor* provides a numbering methodology for numbering the components. The component numbering should be traceable to specific part numbers referenced in the Bills of Materials with all associated information required for the spares management. The hardware breakdown structure is included in the same report as the BOM. The BOM list all components identified in the hardware		accident and installation conditions, System flow drawings, General arrangement drawings, Equipment layout drawings, Piping isometric drawings Cable routes and wiring diagrams, Logic diagrams, Component maintenance manuals, Component assembly drawings, Component seismic calculations and test reports. Component supplier recommended spare parts listing. Component sectional drawings with identification. Comprehensive spare parts listing related to the component sectional drawings. Operations manual for the complete *works* and for individual Equipment, Plant and Material items. Spares lists including part numbers for each component in accordance with the hardware breakdown structure, Plant and Material, manufacturing and installation specifications and drawings. Software (including

Activity description	*Project Manager*	*Contractor*	Requirements	Planning	Additional notes
			breakdown structure and show whether the component is a recommended or critical spare as well as the procurement lead time of each component. In addition to the *Employer*'s template provided, the BOM also contains a "Receipt Inspection Reference Number" column where the *Contractor*'s receipt inspection report as well as the *Employer*'s surveillance report numbers are recorded during the receipt inspection process and which will be completed and submitted to the *Employer* as part of the "AS-BUILT" submission of the design. The relevant design report specifies commissioning, testing and in service periodic testing once the modification has been installed. Plant conditions for the tests and associated acceptance criteria are stated in the relevant design report. New performance/in-service tests and changes to existing *Employer's* performance/in-service test procedures are identified by the *Employer* and listed in the DCIF by the *Contractor.* The *Employer* will be responsible for the mark-ups. The *Contractor* provides any technical inputs as required by the *Employer*. The *Contractor* submits the independent review report performed in accordance with the *Employer's* Detailed Design Review Report.		firmware and configuration) files and applicable revisions.
Contractor Installation Design approval		**X**	Any design reports submitted for acceptance reviews are approved by the *Contractor* in accordance with the *Contractor's* quality system design control procedure.	In accordance with Accepted Programme	

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Installation Design submittal for 1st *Employer* acceptance review		**X**	The *Contractor* clearly states which design report is submitted for review.		Submitted to *Project Manager*.
1st Acceptance review from *Employer*	**X**		The *Project Manager* may arrange a design report review meeting with the *Contractor*. The *Contractor's* attends this meeting.	Within 3 weeks of submittal.	The review meeting aims to ensure that the *Employer* review comments are well understood by the *Contractor*.
Address *Employer* review comments and submit for 2nd *Employer's* acceptance review.		**X**	The *Contractor* addresses all the agreed and accepted review comments of the *Employer*.	In accordance with Accepted Programme	Submitted to *Project Manager*.
2nd Acceptance review from *Employer*	**X**		2nd *Employer* review comments are limited to clarifications and corrections to 1st review comments.	Within 2 weeks of submittal.	
Finalisation of Installation Design and submittal for *Project Manager* acceptance.		**X**	Installation Design is finalised by the *Contractor* and submitted for *Project Manager* acceptance.	In accordance with Accepted Programme	Submitted to *Project Manager*.
Final acceptance review and acceptance	**X**		Acceptance of each design report is subject to all previous review comments of the *Employer* being adequately addressed.	Within 1 week of submittal.	

Activity description	*Project Manager*	*Contractor*	Requirements	Planning	Additional notes
Conclusion	**X**	**X**	This activity group is complete upon the *Project Manager's* acceptance of the relevant design reports that comprises the *Contractor's* design.	In accordance with Accepted Programme	Deliverables: o Installation Design o Design Reports o Configuration Updates o Trigramme and Classification verification request o OTS Update Request (Where applicable) o SAR Change Notification Request (Where applicable) o Procedure Change Request o DDR's

3.4.3 Safety Evaluation

In accordance with design procedure 331-86 and KAA-709 for safety screening / evaluation / justification is required. Where there is a possible interface with / impact on safety related equipment, the *Contractor's* design complies with the applicable design codes as described in the KNPS Safety Analysis Report (ASME, IEEE etc.).

The *Contractor*'s design is such that it does not introduce any additional risk to the safety and/or operation of the plant and/or its people and/or the environment.

Activity description	*Project Manager*	*Contractor*	Requirements	Planning	Additional notes
Authorisation of individuals in accordance with KTA-001.		**X**	All safety screenings, evaluations and justifications are performed by authorised individuals in accordance with KTA-001.	N/A	

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Compilation of an Scheme Design document / Installation Design document and independent reviews		**X**	Process in accordance with KAA-709.	In accordance with Accepted Programme	Although not obligatory, it is encouraged that the compiler of the design may not be the compiler of the Safety Evaluation documentation.
Probabilistic Safety Assessments (PSA) evaluation.	**X**		The *Employer* performs the PSA. The *Contractor* to supply all relevant input information when requested to furnish information		
Incorporate PSA results into safety evaluation and confirm applicability of PSA to detailed design	**X**		The *Contractor* notifies the *Project Manager* of any discrepancies in the PSA study. The *Contractor* corrects any safety concerns highlighted by the Safety Evaluation / PSA in its design.	In accordance with Accepted Programme	
Presentation of safety evaluations, justifications and cases to KORC for approval.	**X**		The *Project Manager* arranges with KORC for an opportunity to present information at KORC. Both the *Project Manager* and the *Contractor* attends the meeting. The *Project Manager* performs the presentation.	In accordance with Accepted Programme	Regular meetings are scheduled every Monday but arrangement of special KORC meetings is possible for urgent issues.
Approval of safety evaluation documents.	**X**		*Project Manager* acceptance is subject to the requirements of the safety evaluation process being met.	In accordance with Accepted Programme	*Employer's* KORC Chairman approves the documents.
Originals in Scheme Design and copies to TD & RM, copy to RRM, copy on LAN.	**X**		The *Project Manager* submits the approved Safety Evaluation documentation to the *Contractor*.	In accordance with Accepted Programme	

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Conclusion	**X**	**X**	This activity group is 90% complete upon *Employer's* acceptance of the safety evaluation and 100% complete upon authorisation of the safety case for implementation by the NNR.	In accordance with Accepted Programme	Deliverables: • Safety screening document (where applicable), • Safety evaluation (where applicable), • Safety justification (where applicable) and • Safety case for implementation (where applicable). • KORC presentation

3.4.4 Design Field Changes

The *Contractor* will compile and submit to the *Employer* for review and acceptance any required Design Field Changes (DFCs) if the *works* cannot be installed as per the design document.

3.5 Other requirements of the *Contractor*'s design

3.5.1 *Employer* licensing support with National Nuclear Regulator (NNR)

The *Contractor* provides support and does all rework necessary on or in connection with the design change packages until the *Employer* has obtained approval from the National Nuclear Regulator (NNR) for the design change. The *Contractor* must write the Installation Safety Case in accordance with the latest approved KAA-501.

For clarification, NNR responses are categorised into four categories, namely:

- Subjective: These do not affect or impact on the safety case or the technical intent of the modification. Rework resulting from these requests is not included in the scope of work.
- Objective: These are changes due to a Defect in the safety case or the technical intent of the modification. Rework resulting from these requests is included in the scope of work.
- Configuration Control: Changes requested to any documents or procedures identified by the NNR for update. Rework resulting from these requests is included in the scope of work.
- Conceptual: These comments are applicable to the conceptual intent of the modification which is described in the Technical Requirement Specification (TRS). The *Employer* is responsible for the TRS and any rework required as a result of changes in the conceptual intent is not included in the *Contractor's* scope of work.

3.5.2 Supportability

The *Contractor* confirms that technical support of the installed system is available for the remaining life of the plant from the Completion of the *works*. The *Employer* is immediately informed, in writing, of obsolete components and their equivalent replacements.

3.6 Use of *Contractor*'s Design

The *Employer* may submit, without restriction, all documentation to:

- The South African National Nuclear Regulator, or its nominated third party, for information and licensing purposes. The *Contractor* shall be informed in writing if the NNR makes use of a third party for review; and
- Others employed or contracted by the *Employer* who have duly signed a confidentiality and non-disclosure agreement with the *Employer.*

3.7 Design of Equipment

The *Contractor* determines the design required for the Equipment to be utilised in order to Provide the Works. This design is submitted to the *Project Manager*, for his acceptance.

3.8 Equipment required to be included in the *works*

The *Contractor* complies with all the requirements of the TRSs and determines the Equipment required to Provide the Works.

3.9 As-Built Drawings, Operating Manuals and Maintenance Schedules

As-built drawings compiled by the *Contractor* are done in terms of the KNPS procedure listed in the designs which forms part of this contract.

3.9.1 Documentation to be supplied by the *Contractor*

Operating manuals and maintenance schedules are provided as part of the Configuration Management File of the Installation Design. The information is customised to the KNPS. The *Contractor* provides any additional support information required by the *Employer's* Maintenance Basis and In Service Inspection and Testing groups, to assess related interventions during the life of the Plant.

As-built drawings are provided as part of the *Contractor's* as-built design submission as defined below:

Activity description	***Project Manager***	***Contractor***	• **Requirements**	**Planning**	• **Additional notes**

Compilation and submission of End of Implementation Report (Per Unit)		**X**	• In accordance with *Contractor*'s quality management system.
			• The End of Implementation Report provides all the completed installation records and certification per KNPS unit as required by the Work Plan and testing procedures and consists of (as a minimum, but necessary limited to) of:
			  • all completed and signed off Work Plan documentation and test procedures,
			  • all associated NDE reports and (where required) staff qualification records,
			  • signed certificates (COCs, CSCs, SCCs),
			  • non-conformance reports
			  • referenced receipt inspection as well as *Employer* surveillance report numbers with associated material and component quality assurance data packages),
			  • signed off DRs as well as signed off Design Field Changes (including all associated configuration control update requests)
			  • Any other implementation records required by the specified Quality Assurance requirements i.e.: Updated system software and configuration files etc.)
			• The *Contractor* provides objective evidence that an internal quality assurance review was performed on the completed package prior to submission to the *Employer*.
				Within 2 weeks from PTW clearance.	Equipment and Component QADP typically includes the following documentation:
					• Manufacture Quality Plan
					• Material Certificates.
					• Non-Destructive Examination Records (if applicable).
					• Test Records.
					• Weld Specifications (if applicable).
					• Non-Conformances.
					• Authorised component drawings and specifications.
					• Seismic report (if applicable).
					• Conformance Certificates.
					• Certificates of Compliance
					• Disconnection / Re-connection sheets.
					• Construction Status Certificates.
					• Clearance Certificates.

Activity description	***Project Manager***	***Contractor***	• **Requirements**	**Planning**	• **Additional notes**
Resolution of outstanding items		**X**	• It is required that all outstanding items are resolved as to not prevent the *Employer's* use of the *works*	As required	
Plant take-over		**X**	• The plant will be taken over per unit only when the *Contractor* has completed all his obligations in terms of the contract. • Take-over is co-ordinated by the *Contractor.*	In accordance with Accepted Programme	
Signing of the Hand Over Certificates and Finalisation of overall modification QADPs	**X**			As required	
Conclusion	~~**X**~~	~~**X**~~	• Completion is upon authorisation of the project hand-over certificate - KFU-PE-008 in accordance with KAA-501.	Within 2 weeks from PTW clearance.	Deliverable: • Modification QADPs • Hand-over certificate - KFU-PE-008 duly signed by the *Employer*.

It is the responsibility of the *Contractor* to plan his supply of documentation according to requirements and to indicate dates on the Accepted Programme.

3.10 Document Review Process

To maintain the Plan / Programme, the following document comment and review cycle shall be established:

- The *Project Manager* shall have 20 working days to review the first issuance of a document submitted by the *Contractor*, utilising suitably qualified and experienced individuals, and issue all comments on a consolidated Document Comment and Resolution Form (DCRF) to the *Contractor*.
- The *Contractor* shall analyse and address the comments in the *Project Manager's* DCRF until acceptance of the *Contractor's* response for each comment is achieved. The *Contractor* shall then revise the document incorporating the accepted comments. This period should not exceed 28 days.
- The *Project Manager* shall have 20 working days to review and accept the revised document in accordance with the accepted comments.
- The revised and accepted document will be submitted to the NNR by the *Project Manager* for review or for information.
- The *Contractor* shall analyse and address the NNR comments in the *Project Manager's* DCRF until acceptance of the *Contractor's* response for each comment is achieved. The *Contractor* shall then revise the document incorporating the accepted comments. This period should not exceed 14 working days.

- The *Project Manager* shall accept the revised document once acceptance is obtained from the NNR. Should the NNR have further comment that impacts his document, the comments shall be communicated to the *Contractor* for corrective action.
- The *Employer* and NNR review periods do not run concurrently.

3.10.1 Maintenance Manuals

Maintenance manuals must form part of the Configuration Management File submitted as part of the Installation Design. As-built changes affecting the maintenance manuals are submitted as part of the as-built design submission.

3.10.2 Number of Manuals

Full and comprehensive maintenance manuals are supplied by the *Contractor*. Two (2) complete printed copies of all documentation are supplied. One copy is marked ‘Master Copy’ and one ‘Reference Copy’. The aforementioned is also handed over in a searchable electronic format.

3.10.3 Modifications (during Defects Period)

The *Contractor* provides any additional and amended pages, sufficient for all copies of manuals, to ensure that they are complete with details of final settings and modifications made up to the Defects Date. Such information is forwarded, by the *Contractor*, to the *Project Manager* progressively and promptly following receipt of agreement to Equipment or system design modifications. The materials used for updated pages are the same as that used for the original documentation.

3.10.4 “AS BUILT Marked Up” Plant Hand Over Documentation

Submission of the "As Built" documentation, which is subject to acceptance by the *Project Manager*, is a pre-requisite for Completion.

Activity description	*Project Manager*	*Contractor*	Requirements	Planning	Additional notes
Compilation and submission of As-Built design documentation and drawings.		**X**	• The process for maintaining the design status will be as follows: • After 1st Unit implementation, the *Contractor*'s design is updated to take into account the first unit design changes – approved by means of DRs and DFCs – reference is made in the design with regards to which DRs and DFCs are incorporated into the design revision. Where required, the Work Plan and test procedures associated with the 2nd unit implementation are updated as well. • After 2nd Unit implementation, the *Contractor* provides a final design revision update following implementation and testing.	Within 2 weeks from PTW clearance.	Acceptance process for updated design, Work Plan and test procedures may be simplified for these submissions as it is assumed that all changes were already approved by means of the DR and DFC processes.

3.10.5 Final documentation

Submission of the "End of Implementation Report" documentation, which is subject to acceptance by the *Project Manager*, is a pre-requisite for Completion.

3.10.6 Document control

The *Contractor* implements a comprehensive document management system for control of all documents including but not limited to drawings, procedures, and manuals. The document management system provides information on the document revision status and of document status in relation to the 'as built' and 'as designed' status on each plant group or sub-group. The system is part of the Quality Assurance programme identified in the Quality Assurance Manual, supplied by the *Contractor.*

3.10.7 Configuration control

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Provision of Completed Spares Assessment Input Sheet and supporting data		**X**	• In compliance with KAA 614. • The *Contractor* provides the required input data for every new component that is installed on the plant. • Should the *Contractor* need support to clarify whether Equipment is standard or not, he clarifies with the *Project Manager*.	In accordance with Accepted Programme	All input data to be provided by official communication. The *Employer* will complete the required spares registration process.
Provision of Maintenance Basis programme requirements and supporting data.		**X**	• In accordance with KAA 614 and KSU-006.	In accordance with Accepted Programme	All input data to be provided by official communication. The *Contractor* provides a detailed description of the required *Employer* tasks including their frequency, detailed description and objective of each task required to maintain the installed Plant and Material. This information is provided after the *Contractor's* design has been accepted and prior to installation. The *Employer* will complete the required maintenance bases updates.
Identification, compilation and review of document change requests and submission to the *Employer*.		**X**	• DDR, SAR and OTS Change notifications and proposed procedure (operations and maintenance) changes.	In accordance with Accepted Programme	Submitted to the *Project Manager*.
Processing of document changes as per relevant process procedure.	**X**		• As referenced in KAA-501.	As required	

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Process custodian interface and support	**X**		• The *Contractor* provides all required information and supports the *Supervisor* with the interface.	As required	
Presentation of SAR and OTS changes to relevant committees.	**X**		• *Contractor* to support.	As required	
Document release for UPDATING (DDT)		**X**	• For discrepancies: "As-built" changes are only submitted for update upon *Employer* acceptance of each Discrepancy Report.	To - 3 months	This is the formal action given to the *Employer* to commence with updating of the Master documents.
Updating of Masters	**X**			3 months – pre-outage submittals 1 month - for as-builts	
Verification of Master Updates (Confirmed correct)		**X**	• Verification is limited to the scope of the change as a result of the modification. • Where discrepancies impact on DDR's and the DDR is to be changed, red-line mark-up will be provided. • The updated DCIF forms part of the Design update (following 1st unit implementation) or Design Field Change (2nd unit implementation).	As required	

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Approval for RELEASE of documents		**X**	• Operational documentation is released prior to PTW suspension for testing (i.e. prior to the plant being made live). • Non-operational documentation, is released prior to Permit to Work clearance.	As required	This is the formal request to release the updated documents to the various documentation centres and operations control room.
Distribution of documents to documentation centres	**X**			As required	For immediate availability, *Contractor* to co-ordinate and arrange. For within three days - *Employer* can provide the function.
Conclusion			• This activity group is complete upon release of all affected documents to the Station (including "As-Builts".	As per Accepted Programme	Deliverables: • DDRs • SAR Change Notification • OTS Update Request • Procedure Change Requests • "As Built" drawings • Updated DCIF form

4 Procurement

4.1 People

4.1.1 Minimum requirements

4.1.1.1 Supplier Development and Localisation (SD&L)

The *Contractor* complies with and fulfils the *Contractor's* obligations in respect of the Supplier Development & Localisation in accordance with and as provided for in the *Contractor's* SD&L Compliance Matrix. (Refer to appendix 5)

4.2 Subcontracting

All Sub*contractors* are contracted on a back-to-back basis under appropriate NEC conditions of contract and are subject to acceptance by the *Project Manager*. Where NEC conditions of contract are not utilised, the proposed conditions of contract are submitted to the *Project Manager* for acceptance.

In terms of the Construction Regulations, the *Contractor* only appoints a Subcontractor when the *Contractor* is satisfied that such a Subcontractor has the necessary competencies and resources to perform the work falling within the scope of the subcontract safely.

The *Contractor* is required to:

- Stop any Subcontractor from executing construction work which is not in accordance with the *Contractor's* or Subcontractor's health and safety plan for the Site or which poses a threat to the health and safety of persons.
- Ensure that every Subcontractor:
    - is registered and in good standing with the compensation fund or with a licensed compensation insurer prior to work commencing on the Site; and
    - have made provision for the cost of health and safety measures during the construction process.

4.2.1 Nuclear Safety

The *Contractor* establishes and maintains vigorous oversight over its Subcontractor's to assure adherence to this Works Information and its requirements and thereby achieve nuclear safety.

4.2.2 Preferred Subcontractors

Preference is given to South African companies as possible Subcontractors. Where possible, local resources are utilised. A predetermined and mutually agreed value of this contract, at the Contract Date, is attributable to Eskom Holdings SOC Ltd classified Black Economic Enterprises (BEE) / Small Medium & Micro Enterprises (SMME) or Black Woman Owned (BWO) Enterprises. The value attributed to such enterprises is monitored by the *Contractor* and submitted to the *Project Manager* by means of a 3-monthly statement of expenditure.

4.2.3 Subcontract documentation, and assessment of subcontract tenders

The *Contractor* provides evidence of the selection process and criteria for each Subcontractor appointed to assist the *Project Manager* in his contractual acceptance (Core Clause 26.2) of the Subcontractor. The evidence includes skills assessment (including qualifications) for Subcontractor's staff. In the *Contractor's*

submission to the *Project Manager* in terms of Core Clause 26.2, he also includes a "control and supervision of Subc*ontractor*" plan for acceptance, by the *Project Manager.*

4.2.4 Limitations on Subcontracting

Subcontractors reporting relationships are such that quality outputs and independence is assured e.g., a radiography Subcontractor cannot report to the welding Subcontractor. These relationships are such that the *Contractor* has full control of all Subcontractor outputs. Subcontractors contracting to Subcontractors are to be avoided as far as possible. Exceptions are only allowed with the explicit acceptance of the *Project Manager.*

4.3 Plant and Materials

4.3.1 Quality

Quality requirements relating to Plant and Materials will be developed and identified, by the *Contractor*, and accepted, by the *Project Manager*, as part of the Procurement Specification of the Installation Design – which will include the Bill of Material.

- Maintenance manual with detail drawings and maintenance instruments shall be supplied by the *Contractor*.
- The *Contractor* shall supply to Eskom upon take-over of the *Works* a complete hardware breakdown structure and spares list for future maintenance purposes.
- The *Contractor*, or his appointed inspection authority, shall employ a quality assurance system which shall cover the inspection of all components for dimensional accuracy, inter-changeability, compliance with material specification, faults, and workmanship.
- The *Contractor* shall provide documented proof that all electrical Equipment requirements are met. The *Contractor* shall provide Eskom with suppliers' certificates of conformance for catalogued and off-the-shelf items.
- The *Contractor* shall supply a detailed Quality Assurance Data Package (QADP) that includes, but is not limited to the following:
    - manufacturing and test records
    - supplier's certificates of conformance
    - supplier's inspection and test certificates
    - Equipment qualification test reports
    - inspection release reports
    - completed Quality Control Plans and supporting documentation used
    - in the execution of the contract
    - factory acceptance test reports
    - site acceptance commissioning test reports
- The *Contractor* shall supply testing procedures (i.e., FAT, SAT, etc.) for review and acceptance by Eskom.
- Eskom reserves the right to reject any component or part that does not meet the requirements of this specification.

- *Contractor* engineering personnel required to sign as compiler and/or approver of documents and drawings required by this specification shall be registered as professional engineers or equivalent as approved by Eskom in accordance with ECSA guidelines.
- All persons performing testing and inspections shall be appropriately qualified and certified in accordance with requirements of the applicable standard.
- Only high quality, defect free components shall be installed on Koeberg cranes. Component selection shall be based on good engineering practice and shall also incorporate lessons learnt from operating experience.
- The upgrade shall ensure that cranes handle loads in a safe and reliable manner.

4.3.2 Counterfeiting

The *Contractor* warrants that all items provided to Provide the Works is genuine, new, and unused. The *Contractor* further warrants that all items used to Provide the Works, include all genuine, original or are otherwise suitable for the intended purpose.

Types of material, parts, and components, known to the *Employer*, to have been misrepresented internationally include (but are not limited to):

- fasteners.
- hoisting, rigging, and lifting Equipment;
- cranes;
- hoists;
- valves;
- pipe and fittings;
- electrical Equipment and devices;
- plate, bar, shapes, channel members, and other heat treated materials and structural items;
- welding rod and electrodes; and
- computer memory modules.

The *Contractor's* warranty extends to labels and/or trademarks or logos affixed, or designed to be affixed, to items supplied or delivered to Provide the Works.

Falsification of information or documentation may constitute criminal conduct, the *Employer* may reject and retain such information or items, identify, and segregate such information or activities, at no additional cost to the *Employer*.

The *Employer* will also report such information or activities to relevant South African governmental officials.

4.3.3 Plant & Materials provided "free issue" by the *Employer*

There is no Plant and Materials provided as "free-issue" by the *Employer*.

The *Employer* will provide the utility services, equipment and labour as specified in the TRS 240-152358699 Revision 1.

4.3.4 *Contractor*'s Procurement of Plant and Materials

The *Employer* requires warranties from suppliers to be in favour of the *Employer* and not just to the *Contractor*. Where provided warrantees from suppliers exceed the Defects Date, those warrantees are

passed on to the *Employer*. All *Contractor's* supplier data which the *Employer* may need after Completion of the whole of the services is supplied to the *Employer* at delivery.

4.3.5 Procurement: equipment, Plant and Materials and consumables

Activity description	*Project Manager*	*Contractor*	Requirements	Planning	Additional notes
Compilation and submittal of manufacturing quality plans to the *Project Manager* for indication of hold and witness points and approval.		**X**	• Manufacturing quality plans are in accordance with the *Employer* Quality Requirements.	In accordance with Accepted Programme	Not applicable to third party "off the shelf" Equipment, Plant and Materials.
Manufacturing Quality plans to be submitted to the *Employer's* PQE and QA/QC sections for indication of *Employer's* hold and witness points.	**X**		• Indication of *Employer's* requisite "hold" and "witness" points and acceptance.	Within 4 weeks of receipt of notification.	
Manufacturing and procurement of Equipment, Plant and Materials.		**X**	• In accordance with the requirements of the applicable codes, standards and quality requirements of the accepted design. • For long lead items, which require to be purchased prior to acceptance of the Installation Design, the *Contractor* obtains *Employer's* acceptance prior to placement of such orders and include such items in the Programme.	In accordance with Accepted Programme	
Notification of *Employer's* hold and witness points.		**X**	• Notification to *Project Manager*	Local – 1 week Foreign – 2 weeks	

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**

Equipment, Plant and Materials packaging.		**X**	• In accordance with the requirements of the applicable codes, standards, and quality requirements of the accepted design.
			• An itemised detailed packing list must be compiled for each shipment and sent to the *Employer* electronically in advance. The packing list must be made up using the following columns:
			  • Tracking devices & numbers for GPS
			  • Box number
			  • Item number
			  • Quantity
			  • Equipment Description
			  • SAP 45 Order No
			  • Storage Level
				In accordance with Accepted Programme	

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**

Preparation of Equipment, Plant and Materials for shipment (Packaging/Crating).		**X**	• Any items brought onto Site must be packaged in such a manner as to prevent damage during transportation and degradation due to environmental effects.
			• Each crate must be identified with a label stating:
			  • Project Title
			  • Koeberg Operating Unit
			  • Attention: The *Supervisor* [specify name and tel. number]
			  • *Employer*s' modification number
			  • SAP 45 Order No
			  • Storage requirements
			• Inside the crate each box must be identified in accordance with the packing list. Items in the box to have all relevant documentation and certificates.
				In accordance with Accepted Programme	

Notification of shipment to be performed.		**X**	• The *Contractor* formally sends the following information to the *Project Manager:*
			  • Shipping Agent Name
			  • Description of items to be shipped
			  • Value of shipment
			  • Weight of shipment
			  • Port of shipment
			  • The vessel/flight name
			  • The departure dates
			  • The arrival date
				In accordance with Accepted Programme	

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Transportation to storage facility at KOU and subsequent transportation to the point of implementation (including all related rigging and lifting Equipment and activities).		**X**	• Incoterms: Delivered Duties Paid (where applicable).	In accordance with Accepted Programme	Allow 2 weeks for customs clearance in South Africa (where applicable).

Provision of Equipment, Plant and Materials QADP's for customs clearance and receipt inspections.		**X**	• The *Contractor* provides with each shipment a summary sheet which contains:
			  • the bill of material for the shipment,
			  • a description of the Equipment and
			  • the total price for each item on the bill.
			• The summary sheet also reflects the contract reference number and the name of the *Project Manager*.
				In accordance with Accepted Programme	Individual items are marked in accordance with the Contract and Works Information.

Unpacking on Site		**X**	• The *Contractor* coordinates this activity. • Crate opening to be witnessed by the *Supervisor*	In accordance with Accepted Programme	

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**

Verification of Equipment, Plant and Materials to specification and preparation for marking by the *Supervisor*.		**X**	• Upon delivery, the *Contractor* prepares such Plant, Materials and Equipment that are identified for payment in the *activity schedule,* for the *Supervisor* to mark.
			• As part of preparation for marking (where applicable and as directed by the *Project Manager*) the *Contractor* shows title of such Plant, Materials and Equipment to the *Supervisor*. Demonstration by the *Contractor* of such title is a prerequisite to marking and payment.
			• Preparation for marking includes:
			  • Marking for the attention of the *Supervisor*
			  • Item Number – corresponding to that on the packing list
			  • Bill of Material number
			  • The contract number and title
			  • SAP 45 Order number
			  • Level of storage requirements
			  • Shelf life
				Notification 4 weeks prior to delivery to Site	

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Receipt inspection / acceptance of Equipment, Plant and Materials.	**X**		• Surveillance report supplied by *Employer* PQA (Project Quality Assurance). • The *Contractor* provides the *Employer's* PQE staff with the bill of material reference number(s) of the Equipment, Plant and Materials inspected – these are to be included on the surveillance report. • The *Contractor* ensures that the applicable surveillance report number is referenced in the "As-Built" BOM for traceability reasons. • The surveillance report numbers are used as index for all QADPs submitted with Equipment, Plant and Materials and are transmitted to the *Project Manager* as part of the End of Implementation Reports.	1 day duration	The *Supervisor* marks the Equipment, Plant and Materials after preparation for marking by the *Contractor*.
Procurement of all consumables <u>excluding</u> welding rods, filler wire and welding gas.		**X**	• All consumables such as grinding discs, marking pens, dye penetrant, developer etc. used directly for the *works* are CRACK compliant in accordance with DSG-317-094	In accordance with Accepted Programme	

Activity description	*Project Manager*	*Contractor*	Requirements	Planning	Additional notes
Conclusion	**X**	**X**	• This activity group is complete upon issuing of the "Surveillance Report" by the *Employer*.	In accordance with Accepted Programme	Deliverables: • Manufacturing Quality Plans • Packing Lists • All Equipment, Plant and Materials and consumables with applicable quality assurance data packages and associated surveillance reports.

4.3.6 Procurement: Storage of equipment, Plant and Materials

Activity description	*Project Manager*	*Contractor*	Requirements	Planning	Additional notes
Provision of plans for laydown areas and conservation requirements for storage.		**X**		Notification 6 months prior to delivery to Site	
Arrange storage space and notify *Contractor* of storage available.	**X**		• *Supervisor* arranges.	Within 6 weeks of receipt of notification	
Notify *Project Manager* if storage space not suitable.		**X**		Within 2 weeks from *Employer's* response	To allow sufficient time for the *Employer* to arrange alternative facility.
Provision of suitable Storage Area		**X**		In accordance with Accepted Programme	
Moving of equipment, Plant and Materials and related support services (i.e., rigging) to and from receipt inspection area, storage facility, laydown areas and Site.		**X**		In accordance with Accepted Programme	
Tracking and control of equipment, Plant and Materials.		**X**		In accordance with Accepted Programme	

Activity description	*Project Manager*	*Contractor*	Requirements	Planning	Additional notes
Conclusion	**X**	**X**	• This activity group is complete upon agreement of a suitable storage area.	In accordance with Accepted Programme	Deliverables: • Laydown plans • Allocated storage areas

4.3.7 Spares and consumables

4.3.7.1 Spares

- The *Contractor* supplies any spares which may be required for and during commissioning of the *works*
- The *Contractor* provides a recommended list of spares with each unit priced and the relevant support information as required by KAA-614 - Appendix 2], for at least fifteen years operation
- For the recommended list of spares, the *Contractor* provides the basis for spares inventory with specific reference to critical spares
- When applicable, the *Contractor* delivers spares to the Site stores and in liaison with the *Project Manager* and supplies the data necessary for booking spares into stores.

4.3.7.2 Consumables

The *Contractor* supplies all consumables required for first fill and commissioning. All consumables must comply with KAA-751.

Activity description	*Project Manager*	*Contractor*	Requirements	Planning	Additional notes
Welding Consumables Verification and Reservation		**X**	• The *Contractor* specify the requirements in terms of welding consumables, limited to welding rods, filler wire and gas, and provide reservation request to the *Project Manager.*	To-12 wks	To: implementation starting date
Welding consumables	X		• Welding consumables are provided by the *Employer*.	In accordance with Accepted Programme	
Consumables handling and control		**X**	• Hazardous substances and materials are handled in accordance with the *Employer's* relevant process procedure and are ensured by the *Contractor's* Responsible Person.	As required	

4.4 Tests and inspections before delivery

Specific hold and witness points will be assigned by the *Employer* as part of its acceptance review of the manufacturing and testing quality control plans prior to start of any tests and inspections.

4.5 Marking Plant and Materials outside the Working Areas

- The *Contractor* gives four weeks' notice prior to delivery of Plant, Materials and Equipment
- Upon delivery, the *Contractor* prepares such Plant, Materials and Equipment that are identified for payment in the activity schedule, for the *Supervisor* to mark.
- As part of preparation for marking (where applicable and as directed by the *Project Manager*) the *Contractor* shows title of such Plant, Materials and Equipment to the *Supervisor*. Demonstration by the *Contractor* of such title is a prerequisite to marking and payment.
- Preparation for marking includes:
    - Marking for the attention of the *Supervisor*
    - Item Number - corresponding to that on the packing list
    - The *Contract* number and title
    - Level of storage requirements
    - Shelf life

All excess Plant and Material, paid for by the *Employer* and of which he holds the title, after *completion* of whole of the *Works,* remains the property of the *Employer.*

4.6 *Contractor's* Equipment (including temporary *works*).

As prescribed in the technical specification TRS 240-152358699 Revision 1.

4.7 Cataloguing Requirements

- In order to facilitate and promote efficient cataloguing, storage, retrieval and ordering of stock/nonstock items by the *Employer*, the *Contractor* complies with the following requirements:
    - The *Contractor* labels the goods strictly in accordance with the *Employer'*s prescribed requirements, including the label format and content, and ensures that all information thereon is complete, accurate and correct.
    - The *Contractor* provides sufficient information as required by the *Project Manager* to facilitate the efficient and accurate cataloguing in naming, classification, and numbering of stock/non-stock items, including the manufacturer's/vendor's part number (MPN) and all mandatory attributes and variables required by the *Employer* to suitably describe and categorise the relevant commodity.
    - The *Contractor* ensures that all delivery documentation correctly references the *Employer*'s relevant material number and goods description and that the information shown on the label matches the information on the delivery note and complies with the scope of work.
    - The *Contractor* establishes and maintains a data base of the goods, purchased by the *Employer* in terms of this contract, which matches the *Employer*'s purchased goods records and meets the *Employer*'s future ordering requirements.
    - The *Contractor* generally supplies all required information electronically and, on a template, provided by the *Employer* (including a complete and accurate electronic data input file, in the format required by the *Employer*, for all the materials falling within a common commodity, with a separate file being required per commodity supplied) to facilitate the efficient storage, retrieval and future ordering of spare and replacement parts.

- The *Contractor* complies with the provisions of section 4.2.2 in accordance with the Accepted Programme (or if not included in the Accepted Programme or if there is no Accepted Programme, within the time periods notified by the *Project Manager* and in any event prior to delivery of the goods).
- Templates and other data required by the *Employer* to comply with the provisions of section 4.2.2. The *Project Manager* and the *Contractor* will agree on a delivery program within seven days after signing the contract. It may be necessary to create a multiple delivery program based on the volume of items to catalogue. The *Project Manager* and the *Contractor* will also agree on the duration within which the *Contractor* is to catalogue the items and return the information to the *Project Manager* so that it can be used on all documentation and labels that are used in communicating with the *Employer* for the purposes of delivering the goods/ or any other queries.
- Failure to comply with the provisions of section 4.7 (including failure to label goods strictly in accordance with the provisions of section 4.7, failure to complete data input files per commodity completely and accurately in all respects and strictly in accordance with the *Employer*'s required template} is a defect and the *Project Manager* may reject the goods in question. Unless otherwise expressly stated in writing by the *Project Manager*, acceptance of goods does not constitute delivery or acceptance of the defect and the *Contractor* remains responsible for correcting the defect. Without limitation, the *Contractor*'s failure to comply with the provisions of section 4.7 in any respect constitutes a failure by the *Contractor* to provide services or goods which he is to provide. The cost incurred by the *Employer* in having others remedy this failure is the liability of the *Contractor* and is assessed by the *Project Manager*.
- The provisions of 4.7 apply in addition to all other requirements provided for elsewhere in this contract (whether in the scope of work or otherwise) and do not relieve the *Contractor* of any of the *Contractor*'s other obligations or responsibilities under the contract.

5 Construction

5.1 Temporary *works*, Site services & construction constraints

Employer's Site entry and security control, permits, and Site regulations

5.1.1 Minimum requirements of people employed on the Site

- The *Contractor* employs in and about the Provision of the Works only such persons that are careful, competent and efficient in their several trades and callings arid the *Employer* reserves the right to object to and require the *Contractor* to remove from the *works,* forthwith, any person employed by the *Contractor* in or about the Provision of the Works who, in the opinion of the *Project Manager,* misconduct's himself or is incompetent or negligent in the proper performance of his duties and such person is not again employed for the *works* without the written permission of the *Project Manager.*
- The *Contractor,* in and about the Provision of the Works, provide evidence of skills assessment (including qualifications) for all his staff. *Contractor Project Manager*, QC and *Supervisors* are required to present SAQA, or equivalent, approved certificates (or equivalent), for the position that they fulfil. Any *Contractor's* personnel that do not meet the *Employer's* panel requirements will have their access to site revoked. For mechanical contracts, the *Contractor* demonstrates ASME construction and maintenance/testing skills, knowledge, and oversight.
- All engineering work is performed by suitably qualified and experienced individuals. The *Contractor* demonstrates to the *Project Manager,* for his acceptance, that the assigned persons fulfil these requirements and submits a brief CV of each engineer in and about the Provision of the Works. If design work is carried out in jurisdictions where engineering work is governed by a formal professional body, the engineers taking responsibility for the work must be registered as professional engineers with that body.
- The *Contractor* ensures that the *Contractor's* employees are reasonably fluent in the language of the contract.
- The *Contractor* always maintains a harmonious relationship with and co- operates with the *Employer* and all its suppliers and sub-suppliers or their employees who may be involved.

5.1.2 Key personnel

- The *Contractor* ensures that all key personnel assigned to the *works* meet the requirements of the *Employer's* security and medical qualifications as well as training and experience generally required by similar utilities elsewhere in respect of similar work. Where required, these staff members also meet such requirements as the National Nuclear Regulator may stipulate from time to time.
- *Contractor* supervisors are deemed to be key people and are dedicated to each project.
- The *Contractor* provides orientation, and technical training for all key personnel in accordance with the requirements of the *Employer's* Radiological Safety Regulations, the *Employer's* Industrial Safety Programme, and, in general, the whole framework of plant rules and regulations which may be in force at the *Employer's* Site from time to time, which is available on request.
- All Radiation workers comply with such radiation protection standards as is required by the *Employer.*

- The *Contractor* regularly reports person hours worked to the *Project Manager* monthly.
- The *Contractor* at his own expense complies with the Nuclear Energy Act 92 of 1982, the National Key Points Act 102 of 1980, and the Protection of Information Act 84 of 1982 and in general with all laws, regulations, byelaws, and requirements of local and other authorities which may be applicable to the *works* and as amended or replaced.
- The *Contractor* complies with the *Employer's* Radiological Safety Regulations Programme, and in general, the whole framework of plant rules and regulations which may be in force at the *Employer's* facilities from time to time.
- At the Site the *Contractor* is at all relevant times under the authority of the *Employer's* Power Station Manager for the purpose of giving effect to the provisions of the above two clauses hereof. Notwithstanding the afore said, this does not in any way relieve the *Contractor* of his obligation to comply with the relevant legislation, should the *Employer's* Power Station Manager fail to act in any specific manner which makes him or the *Employer* liable in any way whatsoever.
- The *Contractor* at its own expense complies with the Basic Conditions of Employment Act No. 75 of 1997. The *Contractor* indemnifies the *Employer* against any claims, proceedings, compensation, and cost arising from the *Contractor* transgression of the Act.
- The *Contractor* complies with all relevant labour legislation and applies to the Ministerial Determination for working hours and obtains approval prior to the commencement of any work on Site. The *Contractor* submits the approval to the *Project Manager* for acceptance.

5.1.3 Qualification of key personnel

- The *Contractor* ensures that all key personnel assigned to the Works meet the requirements of the *Employer's* security and medical qualifications as well as training and experience generally required by similar utilities elsewhere in respect of similar work. Where required, these staff members also meet such requirements as the National Nuclear Regulator may stipulate from time to time.
- The *Contractor* provides orientation and technical training for all key personnel in accordance with the requirements of the *Employer's* Radiological Safety Regulations, the *Employer's* Industrial Safety Programme, and, in general, the whole framework of plant rules and regulations which may be in force at the *Employer's* Site from time to time, which is available on request.
- All Radiation workers comply with such radiation protection standards as is required by the *Employer.*

5.1.4 Installation

- The *Contractor* provides a scaffolding plan that demonstrates integration of usage among the various activities for review and acceptance by the *Employer.*
- The *Contractor* provides all scaffolding required for the *works*.

5.1.5 Access requirements

- Access to site: The *Contractor* has access to the plant from the Contract Date of signature to determine strategy for the roof and stud replacements. On site activities are subject to the release by the *Employer's* required authorisations or "Permits to Work"
- All personnel are in possession of a valid identification document or passport.

- All personnel are security cleared to work at the Site by the South African authorities, prior to being cleared as a temporary worker.
- The *Contractor* allows 14 days for such clearance. Until clearance is obtained the personnel is allowed on Site as a visitor, meaning that the visitor is in constant eye contact with one of the security cleared *Contractor* personnel.
- Security clearance or refusal thereof does not constitute a compensation event.
- On a daily routine all personnel will access and leave the Site via the security-controlled access point, where all are subjected to security screening procedures.
- The *Contractor* attends a mandatory once off, Plant Access Training (PAT) training course for approximately one day. The training course is scheduled on Mondays and the *Project Manager,* on receipt of a five-day prior notification from the *Contractor,* arranges attendance by the *Contractor.*
- Application for a temporary worker permit requires the following documentation:
  - Security Permit Application.
  - List of Training completed.
  - Screening form.
  - Copy of relevant SAP-generated Purchase Order
- Should any of the *Contractor's* employees have completed any of the necessary training previously, these records are obtained from the *Employer* who maintains a database that makes available all the training records of individuals who have previously worked at the Site. Access to this database is provided to the *Contractor* on the Contract Date.
- Work in the radiological controlled zone (as applicable)
- Where applicable, work in the radiological controlled zone, requires the *Contractor's* personnel to attend a three-day Radiation Worker Training course. The course consists of two- and half--day theoretical lectures with an examination, medical examination, blood sample and a whole-body count. The *Contractor's* personnel can only enter the radiological controlled areas after successfully passing the above tests.
- All work in the controlled zone is governed by a Radiation Protection Certificate (RPC). All *Contractor* personnel comply with these instructions.
- The Parties are separately responsible for all dealings with government and local authorities relating to its' role in terms of the contract and obtains and maintains at its' own expense such permits, licenses and authorisations as may be required in this regard.
- It is expressly agreed that the *Employer* is responsible for dealing with the National Nuclear Regulator.

5.1.6 Permit to work (PTW) (as applicable)

- All work performed on the Site is governed by the *Employer*'s PTW system and no work is allowed without this authorisation.

5.1.7 Emergency mustering and accountability and evacuation

- Due to the nature of the Site the *Employer* is required to always have full accountability of all personnel.
- The *Contractor* maintains a current status accountability list of all his personnel on Site.
- The accountability list is handed to the *Employer* each time a change occurs.

- The *Contractor* ensures that his personnel take full responsibility of this
- requirement and that his personnel are fully au fait with the mustering requirements as detailed in procedure KAA 611.

5.1.8 Notification of construction work

The Construction Regulations require that the *Contractor*, as the main *Contractor*, inform the provincial director of the Department of Labour before carrying out any work on the Site where the work:

- Involves the demolition of a structure exceeding a height of three meters, the use of explosives or the dismantling of fixed plant at a height greater than three meters.
- Exceeds 30 days or will involve more than 300 person days of construction work and includes excavation work deeper than one meter: or working at a height greater than three meters above ground or a landing.

5.1.9 Work plan and test procedures

All construction activities will be governed by means of an accepted Work Plan in accordance with the requirements stated below.

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Verification of all drawings and plant layout		**X**	• Applicable to accessible plant items, components, and systems only. • The *Contractor* performs walkdowns of all areas to identify all the risks. Photos are to be taken of the work areas and areas where the *Contractor* will be tying into existing plant. • The inclusion of these photos into the Work Plan and/or SHE Risk Assessment is strongly recommended.	In accordance with Accepted Programme	For instance, the *Employer* requires a photo when drilling a hole on both sides of the wall to ensure that nothing on the other side is damaged.

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Raise SAP Requests for Notifications, Orders and Operations to be included in *Employer*'s SAP planning system.		**X**	• SAP request notifications, orders and operations are raised in compliance with KGA-020. • The SAP request forms are completed by a person with detailed knowledge of exactly what work is to be completed for the specific request – reference to QCPs will not suffice as the *Employer's* work controllers must understand the scope and nature of work to be performed. • Where limited conditions of operation (LCOs) are entered, these must be clearly stated on the SAP request.	To-8 months	In order to integrate the *Contractor's* activities with the *Employer's* plans, it is required that SAP notifications, orders and operations be raised on the *Employer's* SAP system.
Raise SAP Notifications, Orders and Operations	**X**		• In accordance with *Contractor*'s SAP Requests. • The *Contractor* provides the required updates, and the *Employer* maintains and updates the SAP orders, notifications, and operations.	To-7 months	The SAP orders needs to be raised early enough in order to include the numbers in the Work Plan.

Compilation, independent review, and approval of the Work Plan together with *Contractor's* and Subcontractor's approved quality control plans (QCPs).		**X**	• The Work Plan addresses all requirements stated in the *Employer's* Work Plan template – KFA-002. The Work Plan is sufficiently detailed and clearly shows all the work required to Provide the Works. Due to the nature of this specific project, the *Contractor* includes in its Work Plan a unit-specific:
			  • Rigging Plan;
			  • Scaffolding Plan
			• The *Contractor* completes the *Employer's* Work Plan template (KFA-002) and provides reference to the *Contractor's* and Subc*ontractor*'s QCPs and installation plans.
				In accordance with Accepted Programme	

Activity description	*Project Manager*	*Contractor*	Requirements	Planning	Additional notes

			• All static testing - testing that does not require energisation of the system or components i.e. liquid penetrant, radiography, and wire-to-wire testing – is incorporated in the Work Plan.
			• The Work Plan is supplied with a detailed schedule to indicate main activities (in accordance with the Accepted Programme) with sufficient detail for integration into the *Employer's* outage plan. The detail required for integration within the *Employer's* outage plan are:
			  • Plant state requirements and (any) system dependencies
			  • Predecessors and successors
			  • Physical duration of the main activity
			  • Working times (calendar) and associated resources.
			• Risk and (where applicable) ALARA assessments, as required by the Work Plan is performed by authorised *Contractor* personnel only.
			• When working in relaying, switchboards, KRG, KIT the *Contractor* analyse the risk of tripping the whole board, as well as the cell above, below and on the sides of the areas where work is performed.
			• All SAP orders raised on the *Employer's* database for installation of the modification are included in the Work Plan.
			• All equipment, Plant and Materials listed for installation has a space for documenting the *Employer's*		

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
			surveillance report numbers and/or the *Contractor's* receipt inspection number. This will allow traceability of all Plant and Materials installed with its associated QADPs. • Intrusive work is classified and controlled in compliance with the *Employer's* Foreign Material Exclusion Procedure KAA-069. • The *Contractor* provides a record of the independent review performed. It is an *Employer*'s requirement that the Work Plan be reviewed by the *Contractor's* engineering representative (the designer or one of the design reviewers), involved in the compilation, review and/or approval of the Installation Design; to confirm compliance with the accepted Installation Design.		
Compilation, independent review, and approval of test procedure(s) with *Contractor* and sub*Contractor*'s accepted procedures.		**X**	• The test procedure(s) addresses all requirements stated in the *Employer's* test procedure template – KFA-006 (. • The *Contractor* completes the *Employer's* template (KFA-006) and provides reference to the *Contractor's* and Subcontractor's testing and commissioning procedures. • Testing and commissioning will verify component functional testing (e.g., motor directional tests, logic function tests, etc.) as well as overall system integrated commissioning test that will verify that: • the installation meets the functional and performance requirements and environmental	In accordance with Accepted Programme	It is permitted that accepted *Contractor's* and Subcontractor's procedures are attached/referenced in the test procedure(s).

Activity description	*Project Manager*	*Contractor*	Requirements	Planning	Additional notes
			specification of the accepted design; • the installation functions correctly with all interfacing plant systems. • The test procedure(s) is/are sufficiently detailed and clearly shows all the work required to Provide the Works. • Each test procedure is supplied with a detailed schedule to indicate main activities (in accordance with the Accepted Programme) with sufficient detail for integration into the *Employer's* outage plan. The detail required for integration within the *Employer's* outage plan are: • Plant state requirements and (any) system dependencies • Predecessors and successors • Physical duration of the main activity • Working times (calendar) and associated resources. • All SAP orders raised for testing of the modification are referenced in the test procedure. • The *Contractor* provides a record of the independent review performed. It is an *Employer*'s requirement that the test procedures be reviewed by a *Contractor's* engineering representative (the designer or one of the design reviewers), involved in the compilation, review and/or approval of the Installation Design; to confirm compliance with the accepted Installation Design.		

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Submit the Work Plan and test procedures for *Employer* 1st acceptance review.		**X**	• All QCPs, installation plans and test procedures are to be submitted – including sub*Contractor* documents. • The *Project Manager* will not accept the Work Plan and test procedures for *Employer's* review without all the supporting documentation being approved and available and submitted together.	In accordance with Accepted Programme	Submitted to *Project Manager*.
1st Acceptance review from *Employer*	**X**		• The *Contractor* attends a review meeting (where applicable) to discuss *Employer* review comments.	Within 3 weeks of submittal.	This is to ensure that the *Employer* review comments are well understood by the *Contractor*.
Initiate KAM-038 impact assessment review.	**X**		• Internal activity	Internal activity	
Address *Employer's* review comments		**X**	• The *Contractor* addresses all the agreed and accepted review comments of the *Employer*.	In accordance with Accepted Programme	
2nd Acceptance review submittal for review		**X**		In accordance with Accepted Programme	Submitted to *Project Manager*.
2nd Acceptance review from *Employer*	**X**		• The *Employer* may raise additional review comments not identified during the first review. • A review meeting may be requested, at the discretion of the *Project Manager*, depending on the number and nature of comments identified / resolved.	Within 2 weeks of submittal.	
Address *Employer's* comments and submit for final acceptance.		**X**		In accordance with Accepted Programme	Submitted to *Project Manager*.

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Employer acceptance of Work Plan and test procedures.	**X**		• Acceptance is subject to all the *Employer's* comments being adequately addressed.	Within 1 week of submittal.	Cover sheet needs modification to allow for signatures.
Conclusion	**X**	**X**	• This activity group is complete upon the *Employer's* acceptance of the installation plan and test procedure(s).	In accordance with Accepted Programme	Deliverables: • Work Plan (reviewed and approved with signatures) • ALARA assessment (where applicable) • Risk Assessment • Unit specific Rigging Plans • Unit specific Scaffolding Plans • Isolation Plan • SAP notifications, orders • Implementation and Testing Schedules (including pre-outage work – where applicable) • Test procedure(s).

5.1.10 Implementation approval

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Verification and completion of "Design Change Package Implementation Approval" form	X		• In accordance with KFA-035.	In accordance with Accepted Programme	

Preparation of KORC/KOSC presentation for implementation approval.		**X**	• The KORC presentation covers the Safety Case and implementation approval. • The *Contractor* compiles a KOSC presentation that details the Work Plan and includes all risks identified for the *works* and associated preventive/contingent actions are included for information as part of this presentation. The use of pictures to demonstrate that plant walk-downs were performed is compulsory. This will also aid the *Employer's* KOSC members to fully understand the *works* to be performed.		
Presentation to *Employer's* approval authorities (KORC/KOSC)	**X**		• The *Project Manager* arranges with KORC/KOSC secretaries the opportunity to present information. • The *Employer* performs the presentation • The *Contractor* supports the *Employer* in the presentation.	In accordance with Accepted Programme	Regular meetings are scheduled every Monday but arrangement of special KORC meetings is possible for urgent issues.
Liaison with NNR	**X**		• The *Contractor* responds to one round of questions raised by the National Nuclear Regulator (NNR). • The *Contractor* supports the *Employer* in responding to questions. • Clarifications regarding the 1st response are not considered as additional questions, but part of the 1st round of questions. • The *Contractor* does not communicate directly to the NNR unless agreed, or in liaison, with the *Project Manager.*	In accordance with Accepted Programme	The *Employer* interfaces with the NNR. *Contractor* addresses questions.
NNR approval	**X**		• *Contractor* provides support.	16 weeks duration	

Conclusion			• This activity is complete upon approval for installation from the NNR.	In accordance with Accepted Programme	Deliverables: • A duly signed "Design Change Package Implementation Approval" form - KFA-035 • KORC/KOSC presentation • NNR letter of approval for installation.

5.2 Temporary *works*, Site services & construction constraints

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

Prior to access to Site, the *Contractor* passes through various security check points, viz. entrance at the R27 access gate, entrance at the Duynefontein entrance, Access Control Point 1 (ACP-1) as well as Access Control Point 2 (ACP-2) where security checks are performed.

All temporary worker/visitors' permits are issued at ACP-1.

5.2.2 Restrictions to access on Site, roads, walkways, and barricades

All equipment and tools are subject to a security screening before they are allowed on the Site. All equipment and tools must be listed and specified before they are brought on Site. This list will serve as evidence for removal permits upon Completion of the *works*. Vehicles are only allowed on Site if justification is provided to the *Project Manager* that such a vehicle is essential to Provide the Works.

5.2.3 Health and safety facilities on Site

The *Employer* maintains a first aid and clinic facility which is available for treating minor medical problems. Contractors are permitted to make use of this facility at their own expense provided that they appear during prescribed consulting hours and are duly authorised by the *Contractor's* supervisor. Emergency treatment is provided as needed. Casualty facilities are available at hospitals within a 25km radius.

5.2.4 Site records

The *Contractor* maintains and submits current records of activities, including the work of Sub-*Contractor*s.

These *Contractor's* records include:

- Identification of *Contractor* / Sub-*Contractor* work and the area of the Site (Work performed to date giving the location, description and by whom, and reference to the Accepted Programme);
- Equipment with hours worked, idle or down for repair;
- Test results and references to specification requirements. List deficiencies identified, together with the corrective action;
- Plant and Material received with statement as to its acceptability and storage;
- Job safety evaluations;
- Progress photographs;

- A list of instructions given and received and any conflicts in plans and/or specifications;
- Weather conditions encountered;
- The number of persons working on-site by trade, activity and location (Visitors are highlighted separately);
- Information required from and by the *Employer* / *Project Manager* / *Supervisor*;
- Any delays encountered, identifying possible root cause.

5.2.5 Heat stress & confined space entries (where applicable)

Activity description	*Project Manager*	*Contractor*	Requirements	Planning	Additional notes
Supply of required protective clothing (coveralls, overshoes, etc.)		**X**	• Based in international experience feedback, it is strongly recommended that burnable clothing is not worn in a heat stress zone. • The *Contractor* is to propose the specific PPE to be used for workers for work		
Respiratory protection	**X**		• Respirators, air-supply suits, SCBA, etc. • The *Contractor* issues a reservation request for said equipment.	12 weeks prior to use	
Supply of calibrated and checked oxygen monitors		**X**		As required	
Supply of portable ventilation units		**X**		As required	

5.2.6 Title to materials from demolition and excavation

The *Contractor* has no title to materials from excavation and demolition.

5.2.7 Removal and disposal of redundant / replaced Plant and Materials (as applicable)

The *Contractor* removes and disposes, from Site, all redundant Plant and Materials on a regular basis and ensures the Site is clean and tidy.

5.2.8 Cooperating with and obtaining acceptance of Others

The *Project Manager,* in conjunction with the *Supervisor,* co-ordinates the work of Others on Site. The *Contractor* co-operates with and does not delay, impede, or otherwise impair the work of Others.

All formal communication between the *Contractor* and the *Employer* is handled through the *Project Manager*, as applicable to the ECC.

The *Contractor*:

- co-operates with and does not delay, impede or otherwise impair the work of Others.
- co-operates at any time with others (e.g., an independent person) appointed by the *Employer* to review work done by the *Contractor* in Providing the *works.*

- shares the Site with Others and maintains a harmonious relationship at all times with and co-operates with the *Employer* and Others and their employees who may be working in the same area or on the same system.
- takes the lead to interface the *works* with the activities of the *Employer* and Others. The *Contractor* is expected to chair any interface meetings, as may be required.
- makes available the assignees and key people timeously for providing the *works*.
- makes it his business to gain sufficient understanding relevant to these *Works* and of the *Employer's* mission and objectives.
- seeks out everything necessary to identify those matters that fall fully or partially within the scope of the *works*, whether such matters are addressed in the description of the *works* or in the Works Information or in other requirements for the *works* stated from time to time.
- brings to the attention of the *Employer* any additional *works* that the *Contractor* believes should be performed by him in keeping with sound professional practice.
- notifies the *Employer* of any matter that the *Contractor* disagrees with or cannot resolve to his satisfaction.
- co-operates at any time with others (e.g., an independent person) appointed by the *Employer* to review work done by the *Contractor* in Providing the *works*.

5.2.9 Publicity and progress photographs

Written acceptance from the *Project Manager* is required prior to:

- The issue of photographs, even if included in a report or submission, to a third party,
- Any publication on notice boards, advertising, media relations, and photography and progress photographs.

5.2.10 Tools, test equipment & consumables

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Supply of standard tools as well as all specialised tools		**X**	• Specialised tools are supplied by the *Contractor*. • In the case where specialised tools are to be manufactured specifically for KOU, the *Employer* will take ownership of the tools after Completion of the *works* on the last unit. • After implementation on the first unit, the *Contractor* makes available the specialised tools for any maintenance that might be required by the *Employer*.	As required	Any additional special tools furnished by the *Contractor,* which cannot be recovered (whether decontaminated or not), will be for the *Contractor's* account.
Supply of standard test equipment as well as all specialised test equipment (including specialised calibration tools and equipment).		**X**	• Specialised test equipment is supplied by the *Contractor*. • In the case where specialised test equipment has to be manufactured specifically for KOU, the *Employer* will take ownership of the tools after Completion of the *works* on the last unit. • After implementation on the first unit, the *Contractor* makes available the specialised test equipment for any testing that might be required by the *Employer*.	As required	Any additional special equipment furnished by the *Contractor,* which cannot be recovered (whether decontaminated or not), will be for the *Contractor's* account.
Conclusion	**X**	**X**	• This activity group is complete upon take over.	In accordance with Accepted Programme	Deliverables: • Tools and test equipment that may not be recoverable.

5.2.11 Special equipment for irradiated areas (as applicable)

The *Contractor* has to ensure that all arrangements for decontamination or disposal be taken care of in the event any Equipment cannot be decontaminated, as per regulations.

5.2.12 Control of radioactive Equipment, Plant or Material (as applicable)

Prior to Equipment, Plant or Materials that is to be used in the *Employer's* Site radiological control zones, being brought onto the *Employer's* Site, the *Contractor*.

- obtains the *Project Manager's* acceptance of a Radiological Surveillance Report, provided by the *Contractor*, which details the radiological conditions/cleanliness of the Equipment, Plant or Materials in terms of dose rate and contamination level (fixed/loose); and
- makes available such Equipment, Plant or Materials for scrutiny by the *Employer*'s RP Group, when first unpacked/unfolded/uncontained from its original shipment packing.

5.2.13 *Contractor*'s Equipment

All equipment and tools must be listed and specified before they are brought on Site. This list serves as evidence for removal permits upon Completion of the *works*.

5.2.14 Equipment provided by the *Employer*

The *Employer* does not provide any Equipment for the *works*.

5.2.15 Site services and facilities

5.2.16 Electric power supplies

Electric power for construction is supplied free of charge, but connection fees are for the *Contractor's* account. All installations comply with the details set out under Construction Power Supplies, OH&SA (Act 85 of 1993).

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**

Electrical supply point	**X**		• Power supply points will be made available to which the *Contractor* interfaces for his power requirements. Three levels of power supplies are available:
			  • 220V AC rated at 15 A at various positions on Site,
			  • 380V AC three phase rated at 32 A without neutral at various positions on the Site,
				As required	The *Employer* does not guarantee continuity of supply and no compensation events for standing time as a result of power failures will be considered.

Activity description	*Project Manager*	*Contractor*	Requirements	Planning	Additional notes
Electrical leads and adapters / connectors and (where required) distribution system.		**X**	• All leads, plugs, connections, and adapters shall be in good working order and comply with the requirements of the OH&S Act. • All portable electrical equipment used by the *Contractor* is clearly marked; regularly inspected for safety and a register kept of these inspections as required by the OH&S Act. Defective Equipment is removed from Site until restored to a good working order by the *Contractor*. • The *Contractor* provides and maintains an electrical distribution system (including temporary wiring, cabling, distribution boards, protection, metering etc.) to lead power from the *Employer's* supply point, to where it is required. On Completion the *Contractor* removes all such temporary distribution systems (included as part of the Work Plan).	As required	The *Project Manager* reserves the right to stop the *Contractor's* use of any electrical equipment or appliance that in the *Project Manager's* opinion does not conform to the foregoing.

5.2.16.1 Lighting

Activity description	*Project Manager*	*Contractor*	Requirements	Planning	Additional notes
Temporary local lighting		**X**	• Where applicable, the *Contractor* provides temporary local lighting in accordance with the safety requirements of the Occupational Health and Safety Act.	As required	The *Employer* provides no additional lighting other than the local lighting installed and does not guarantee the serviceability or the availability of these installations.

5.2.16.2 Water

Activity description	*Project Manager*	*Contractor*	Requirements	Planning	Additional notes
Water supply point	X		• Potable water is supplied at standard tapping points.	As required	The *Employer* takes no responsibility for disruptions in the supply of water.
Water supply hoses, connectors, piping and temporary plumbing ad pumps.		**X**	• All devices shall be in good working order and comply with the requirements of the OH&S Act. • The *Contractor* provides and maintains all pipework and temporary plumbing and pumps necessary to lead the water from the *Employer's* points of supply to the various points where it is required. On Completion the *Contractor* removes such pipework, temporary plumbing and pumps (included in the Work Plan).	As required	

5.2.16.3 Sanitary facilities

Activity description	*Project Manager*	*Contractor*	Requirements	Planning	Additional notes
Sanitary facilities	**X**		• The *Contractor* is allowed access to and use of the *Employer's* existing sanitary facilities. • The *Contractor's* personnel maintain a clean condition of these facilities. • Should temporary sanitary facilities be required, the *Contractor* provides these.	Not applicable	

5.2.16.4 Office and personal Equipment

Activity/ description	***Service Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Supply of phones, fax machine and computers including the microwave or radio link for connection to the external internet networks.	**X**	**X**	Where applicable, the *Employer* will provide telephone equipment to the *Contractor* as needed for the *service*.	In accordance with *Accepted Plan*	• No cellular, mobile phones or tablets are allowed on the Site. • Telephone, fax, and LAN line account payments is for the *Contractor's* account • The *Contractor* supplies the consumables required to provide the *service*. • The *Contractor* shall provide and his use own tools, special equipment, IT hardware and software, PPE including COVID-19 face masks, stationery and acquire all necessary licences, permits and authorisations required to perform the *works*. • The *Employer* will supply a LAN connection, cable and LAN usernames access for the *Contractor'*s access to the *Employer* documents. • The *Contractor* will provide his own internet access.

5.2.16.5 Canteen and snack bar

Activity/ description	***Service Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Canteen, snack bar and vending supplies	**X**		• The *Employer's* canteen and snack bar may only be used on a cash basis. • The *Contractor* supplies vending machines if required.	Not applicable	

5.2.16.6 Office accommodation and/or yard

The *Contractor* is held liable for any damage to the *Contractor*'s facility during the period of occupation. It is imperative that the *Contractor*'s facilities checklist be verified prior to occupation and upon departure, as this

remains proof of any damage to the facility, which needs to be repaired by the *Contractor*. All expenses incurred by the *Employer* in the event of having to perform repairs are at a fee that is in line with the current building tariffs and be charged for the *Contractor*'s account.

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Indication of site office requirements for various stages of the project including the office services required.		**X**	• Request to be for services in accordance with the requirements of this contract.	12 weeks' notice	
Review of request and indication of offices available and container lay-down areas available.	**X**			2-week duration	The *Contractor* will be allocated an area on a concrete slab within the security area for establishment of his site office facility.
Supply of connection points for phone, fax, network, and electrical supply.	**X**		• Co-ordination and scheduling by *Contractor*.	As required	
Supply of containers / Office space		**X**	• *Contractor* to co-ordinate.	2 months' notice	This is for temporary container laydown area which the *Project Manager* will designate.

5.2.16.7 Garbage collection

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Garbage collection	**X**		• A central garbage collection point is provided on the Site and is pointed out by the *Project Manager* on request from the *Contractor*. • No facilities are provided for the removal of construction debris. • The *Contractor* is responsible for the removal of all construction debris/scrap from Site to the central garbage collection point.	Not applicable	

5.2.16.8 Compressed air supply

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Compressed air supply point	**X**		• Compressed air is supplied at 6 to 8 bar(g) at standard air supply points on the plant. • All air points at the Site are equipped with staubli quick connecting valves. • The *Contractor* provides and maintains all connections and fittings (male staubli connector to be fitted to *Contractor's* equipment by the *Contractor*).	N/A	The *Employer* takes no responsibility for disruptions in the supply of compressed air.
Air supply hoses and connectors		**X**	• All air hoses and connections shall be in good working order and comply with the requirements of the OH&S Act.	As required	

5.2.16.9 House keeping

The *Contractor* is responsible for any damage to buildings, floors and plant incurred during the Provision of the Works. The worksites are to be kept clean, neat and free of waste at all times. The *working areas* and material storage areas are barricaded off and sign-posted to prevent access to anyone not involved with the job. The plant is left in the same or better condition, after Completion, than it was found.

5.2.16.10 Personal computers

Activity description	*Project Manager*	*Contractor*	Requirements	Planning	Additional notes
Supply of phones, deck phones, faxes and computers including the microwave or radio link for connection to the external internet networks.		**X**	N/A	In accordance with Accepted Programme	No cellular or mobile phones are allowed on Site.

5.2.16.11 Canteen and snack bar

Activity description	*Project Manager*	*Contractor*	Requirements	Planning	Additional notes
Canteen, snack bar and vending supplies	**X**		• The *Employer's* canteen and snack bar may only be used on a cash basis. • The *Contractor* supplies vending machines if required.	Not applicable	

5.2.16.12 Telephones

Activity description	*Project Manager*	*Contractor*	Requirements	Planning	Additional notes
Telephone and Fax account payments and LAN account payments		**X**	• *Contractor* to provide his own communication tools and equipment	As required	

5.2.16.13 Facilities provided by the *Contractor*

The *Contractor* provides all remaining facilities to Provide the Works. Facilities provided by the *Contractor* are removed prior to Completion.

5.2.16.14 Existing premises, inspection of adjoining properties and checking work of Others

The *Contractor* is required to take the following special precautions whilst executing the *works*:

- Barricades between the work area and the remainder of the plant (if used) are kept in place and are respected at all times by the *Contractor's* staff.
- All existing services in the area of the *works* will be operational during the period of the contract and at no time will the *Contractor* be permitted to move or disturb these services. It is a requirement of the contract that the *Contractor* perform the *works* within the constraints of these services.
- The *Contractor* ensures that all plant and associated systems are protected from sustaining damage, of any form whatsoever, during the *works*.
- The *Contractor* ensures that all existing services such as cables; instrumentation; cable trays; fire barriers and pipe work that may be damaged during installation have been identified and where possible relocated away from possible harm. However, due to the limited space available such relocation of services may be impractical and could still result in restricted working space available to the *Contractor.*

5.2.16.15 Survey control and setting out of the *works*

The *Contractor* participates in the mandatory Site visit to view the Site and associated constraints. The *Contractor* provides its requirements for any related survey control and setting out of the *works* in the *Contractor's* Works Information – submitted as part of the tender.

Further details are developed, by the *Contractor*, as part of the Work Plan as stated in this Works Information.

5.2.16.16 Underground services, other existing services, cable, and pipe trenches and covers

After accessing the Site, the *Contractor* conducts verification of services using the appropriate equipment before any excavation commences.

5.2.16.17 Control of noise, dust, water, and waste

It is the *Contractor's* responsibility to ensure site specific requirement are met at the construction area where the tanks are to be manufactured and in the bund wall area where activities related to removal of the old tanks and installation of the new tanks will take place. The requirements specified by the *Employer's* Safety Risk Management and the Radiation Protection Department shall be complied with

5.2.16.18 Sequences of construction or installation

Sequencing of construction activities are established as part of the Work Plan development and submitted with the Work Plan for approval.

5.2.16.19 Giving notice of work to be covered up

The *Contractor* gives 24-hour notice, prior to work being covered up, of any inspections the *Supervisor* needs to perform on Site. Should the *Contractor* require inspections off Site, the *Contractor* allows for enough time to enable the *Supervisor* to make travel arrangements, following the *Contractor's* notification.

5.2.16.20 Hook ups to existing *works*

Where hook-ups to existing *works* are required, the impact and effect of such hook-ups are detailed in the Installation Design and specific requirements identified in the Work Plan.

5.2.16.21 Change Management during Implementation

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Compilation of Discrepancy Report.		**X**	• Any deviation from any of the accepted designs, changes to Work Plans and/or test procedure(s) identified during implementation and /or testing are documented, analysed, and approved and the impact on configuration updated. • As per 331-86, a Discrepancy Report (DR) may be used by the *Contractor* to notify the changes.	As required	The DR is a notification, tracking and control tool for discrepancies encountered during the installation and testing and commissioning stages of the project, however, the design (as-built) change must be formalised by means of a design revision update at completion of the *works*. The following is to be noted regarding the processing of a Design Field Change: • All DRs to be formalised by means of a DFC or design revision update. • All DFCs to be issued to the NNR for information (new requirement) • Any DR or DFC changing the design intent will require a design revision update and subsequent NNR approval.

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Notification of the *Project Manager* of any discrepancies to any of the accepted designs, changes to Work Plan and/or Test Procedure(s).		**X**	• The *Project Manager* is notified of the discrepancy prior to any corrective work being performed.	As required	
Assessment of *Employer* input required and/or acceptance of the DR.	**X**		• Only an authorised *Employer's* engineering representative (Project Engineer) may accept the DR. • The *Contractor* only proceeds with the change implementation once the *Employer* has accepted the DR.	1 working day.	
Review of impact on Design and Implementation Files (Work Plans, Test Procedures etc) and implement the change (upon *Employer*'s acceptance).		**X**	• The *Contractor* performs a review of the change impact on Design and Implementation Files • The *Contractor* maintains a log and tracks the status of each DR.	As required	

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Compilation of Design Field Change(s)		**X**	• Where discrepancies have been found and notified during the installation process, the *Contractor* consolidates all DRs into at least one Design Field Change 331-313 prior to PTW suspension for testing (i.e., at installation completion). The DFC references all the DRs that it addresses as well as all configuration updates processed as part of the DRs. • Where discrepancies have been found and notified during the testing/commissioning process, the *Contractor* consolidates all DRs into a design revision update which incorporates any previously approved DFCs.	As required	Design revision updates issues following the completion of testing on the units will be considered the unit-specific As-Built submission.
Obtaining *Employer* Line Group signatures on Design Field Change	**X**		• *Supervisors* with support from the *Project Engineer*. • The *Contractor* supports with any queries/clarifications.	As a minimum the *Contractor* must allow 2 days.	For critical path work, this duration may be reduced.

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Employer acceptance of the *Contractors* Design Revision Change / Design Field Change.	**X**		• Acceptance is subject to the change being correctly documented. • Where reference to the Discrepancy Report is made, the report is included as part of the change documentation. • Where configuration updates are impacted, the *Contractor* submits the new update change requests, with associated tracking (DDR) numbers with the change proposal.	Submission to *Project Manager* at modification final commissioning test + 1 week	
Identification, mark-up, and processing of configuration control changes due to DDR		**X**	• The *Contractor* provides all "mark ups" drawings as part of the applicable discrepancy report / design field change.	As required	For critical reviews, a shorter period can be negotiated with the *Employer*.
Revision of Safety Evaluations (if required).		**X**	• In accordance with KAA-709.	As required	For critical reviews, a shorter period can be negotiated with the *Employer*.
Engineering support during installation and testing.		**X**	• The *Contractor* ensures that adequate technical and administrative support is available on Site to support the construction team during installation and testing stages with the change management process.	As required	
Engineering support for problem resolution.		**X**	• The *Contractor* ensures that adequate technical support is available to support the construction team with problem resolutions during installation and testing stages.	As required	

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Conclusion			• This activity group is complete at *Employer* acceptance of the design change and/or design field change.	In accordance with Accepted Programme	Deliverables: • Discrepancy Reports (as required) • Design Change Revision (as required) • Design Field Change (as required)

5.2.16.22 General

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Control Room Package make-up and submittal to Control Room.		**X**	• Refer to *Employer's* Administrative Instruction AI-025	To - 4weeks	In liaison with the *Project Manager*
Plant status for *works* - verification.		**X**	• According to Work Plan	As required	
Co-ordination for project Safety Risk Management authorisations.		**X**	• Ensured by Responsible Person - provided by *Contractor*.	As required	Safe Entry, Heat Stress Zones etc
Safety Risk Management authorisation	**X**			As required	
Plant Isolation (Pipes draining, Locking of valves etc.)	**X**			As required	
Issue PTW	**X**			As required	Boundaries specified by *Contractor* in Isolation Plan
Verification of plant isolations		**X**	• Performed by Responsible Person - provided by *Contractor* - in accordance with the *Employer's* Plant Safety Regulations.	As required	

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Take out PTW		**X**	• By *Contractor's* Responsible Person.	As required	
Issue Hot Work Permit	**X**			As required	
Take out Hot Work Permit		**X**	• By *Contractor's* Responsible Person.	As required	
Conduct daily pre-job briefings		**X**	• By *Contractor's* supervisor. *Employer's Supervisor* to observe.	As required	
Perform pre-job surveys	**X**			As required	
Wall / floor opening (cables)		**X**	• For walls acting as fire barriers: Holes through walls need to be filled with fireproof bags during periods when no personnel are in the area. Alternatively, a fire watch will be required which is supplied by the *Contractor*.	As required	Authorisation by the *Employer*.
Fire detection / Fire Watch		**X**	• A fire watch will be required for when a fire barrier is temporarily removed during the installation of a modification – the Fire Watch is provided by the *Contractor*. • *Contractor's* Responsible Person to ensure that all aspects of the Hot Work Permit are respected.	As required	
Core drilling in walls.		**X**	• Requirements and civil structure verifications to be included in the design document. • Core drilling to be performed in accordance with the approved Work Plan.	As required	The *Employer* may advise in terms of location of re-enforcement, number, and location of holes.
Floor grating removal, barricading and replacement.		**X**	• Scaffolding barrier to be installed around the hole because "tape barrier" is not acceptable.	As required	

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Supply of Scaffolding Material		**X**	• *Contractor* to supply (as work is not performed in controlled zone.)	In accordance with Accepted Programme	
Scaffold transport to site, erection, certifications and inspection, maintenance, modifications, dismantling and transport to workshop.		**X**	• *Contractor* may sub-contract to approved *Employer* scaffolding *Contractor* – note requirements stated in KSM-031.	As required	Approved *Employer* scaffolding *Contractor*.
Rigging Material		**X**	• *Contractor* to supply (as work is not performed in controlled zone.).	In accordance with Accepted Programme	
Rigging material transport to site, verification, rigging labour and transport of material back to workshop.		**X**	• *Contractor* may sub-contract to approved *Employer* rigging *Contractor* – note requirements stated for rigging KSA-132.	As required	
Operation of plant cranes		**X**	• The *Contractor* provides personnel for the operation of plant cranes. Plant cranes are those considered to be part of the existing Plant.	In accordance with Accepted Programme	

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Installation in accordance with Work Plan		**X**	• During installation, it is the responsibility of the *Contractor* to: • Comply with the requirements as stated in the Work Plan and associated referenced documentation. • Comply with the requirements prescribed in the "Permit to Work" issued in accordance with the Plant Safety Regulations. • (Where applicable) Comply with the requirements prescribed in the Radiation Protection Certificate (RPC). • Ensure that all hold and/or witness points are respected. • Adhere to the OH&S Act, the Safety Guidelines for *Contractor*s and *Employer*; and • Continuously assess the working area and conditions in conjunction with the scope of the risk assessments performed. Where any changes occur, the risk assessment and associated sign posting is updated and required actions taken.	As required	
Labelling of plant items		**X**	• Requirements in accordance with TRS.	As required	
Welding		**X**	• The *Contractor* ensures compliance to KNM-001.	As required	

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Radiographic Testing		**X**	• All radiography performed on-site shall be performed in accordance with 238-40: Radiation Protection and Safety Requirements for Industrial Radiography • Radioactive sources are controlled in accordance with KAA-633. • The *Employer*'s Radiation Protection Manager will supply, on request, all various procedures and guides applicable to radiography to the *Contractor*.	As required	
Notification of *Supervisor* for a required Design Field Changes.		**X**	• As stated in 331-86, a Discrepancy Report may be used to notify the required change by the *Contractor*. However, the change is documented, reviewed, and approved in accordance with the *Employer*'s Design Field Change 331-313.	As required	*Contractor* Discrepancy Report Process may be followed for changes during implementation.
Touch-up paintwork.		**X**	• In compliance with KSA-106.	As required	
Certificate of Conformance (COC)		**X**	• In accordance with KAA 501. • *Contractors* arrange, *Supervisor* participate.	As required	This document is issued by an accredited electrical qualified person in accordance with the requirements of the OH&S Act and is applicable to all electrical installations of 50V and higher.

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**

Construction Status Certificate (CSC)		**X**	• The *Employer's* requirements for performing CSCs are in accordance with KAA 664.
			• Prior to notifying the *Employer* of the CSC, the *Contractor* performs an internal CSC inspection with the applicable Sub*Contractor*(s) and *Contractor*'s quality assurance and control staff. This is to ensure that:
			  • the *works* are to the *Contractor*'s satisfaction when notifying the CSC to the *Employer*; and
			  • limit the number of people at the time of the CSC with the *Employer*.
			• At notification to the *Employer*, the *Contractor* submits proof of his internal CSC. and ensures that a person with sufficient knowledge of the modification attends the CSC with the *Employer*.
			• The *Supervisor* arranges the *Employer* CSC, in liaison with the *Contractor* who participates.
			• The *Contractor*'s *Project Manager* and lead design staff are present at the CSC with the *Employer*.
				In accordance with Accepted Programme	This document certifies that the installation meets the requirements of the accepted design and that all mandatory static testing has successfully been completed.
					"Installation work" will be considered complete once all newly installed / modified Plant and Materials have been safety cleared (where applicable) and CSCs signed with all safety reservations cleared.

Safety Clearance Certificate (SCC)		**X**	• In accordance with KAA 501 (where required). • *Contractors* arrange, *Supervisor* participate.	In accordance with Accepted Programme	This certification is required by the operations personnel in order to extend the boundaries of the system from the original (unmodified) system to the newly modified system.

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Issue Sanction For Test (SFT)	**X**		• The *Employer* will issue the Sanction for Test / TA upon completion of the installation *works*.	In accordance with Accepted Programme	
Take out SFT and suspension of PTW		**X**	• By *Contractor*'s Responsible Person.	As required	
Testing in accordance with test procedure(s).		**X**	• During Testing and Commissioning it is the responsibility of the *Contractor* to: • Comply with the approved test procedure(s) and the requirements on the "Sanction for Test" issued in accordance with the requirements of the Plant Safety Regulations. • Ensure that all hold and witness points are respected.	As per Accepted Programme	
Control Room operations required during testing.	**X**			As required	*Employer*'s operator's responsibility.
End of *works* evaluation		**X**	• The *Contractor* ensures that all work is completed, and tests are acceptable prior to PTW/SFT clearance. • The *Contractor* obtains the required test acceptance signatures as stated in KFA-006 prior to clearance of PTWs and SFTs.	As required	
Clearance of PTW's and SFT		**X**		As required	
Transfer of waste to scrap yard		**X**	• Waste is transferred to the *Employer*'s designated scrap yard.	As required	
Disposal of waste	**X**		• The *Employer* will dispose of waste dropped in its scrap yard.		

Activity description	***Project Manager***	***Contractor***	**Requirements**	**Planning**	**Additional notes**
Writing History to SAP	**X**		• In accordance with KSM-015. • The *Contractor* ensures that the *Employer* has sufficient updated information to write history to its SAP systems.	As required	
Conclusion	**X**	**X**	• This activity group is complete upon clearance of PTW / SFT.	In accordance with Accepted Programme	Deliverables: • Control Room Package • Work plan and QCPs – Signed off • Discrepancy Reports – Signed off • Design Field Changes – Signed off • All certification required in accordance with the PSR and in accordance with KAA-501 complete and accepted by the *Employer*. • Non-destructive examination records submitted and accepted by the *Employer*. • Test records submitted and accepted by the *Employer*. • Non-conformances cleared and accepted by the *Employer* (unless otherwise agreed by the *Supervisor*/*Project Manager*). • Return to Service certificates submitted and accepted by the *Employer*.

5.3 Completion, testing, commissioning, and correction of Defects

On or before the Completion Date the *Contractor* does everything required to Provide the Works. The *Project Manager* cannot certify Completion until all the work has been done 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.

5.3.1 Tests and inspections

The *Contractor* prepares and submits a test and inspection plan for submission to and acceptance by the *Project Manager*. Test and inspections including SAT, to form part of the quality control plans and the accepted plan.

The *Contractor* does not deliver those Plant and Materials which the Works Information states are to be tested or inspected before delivery until the *Project Manager* has notified the *Contractor* that they have passed the test or inspection.

5.3.2 Commissioning

Commissioning will take place after installation and before handover. Commissioning tests to be performed are detailed in the TRS 240-152358699 Revision 1 section 8.1. All testing and commissioning requirements are to be stated in the Installation Design and procedures are to be developed and submitted to *Project Manager* for acceptance.

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

Not applicable

5.3.4 Take over procedures

The *Employer* will use the *works* during start-up of each Unit up to and including the point where any related testing and commissioning that requires the plant to be in operation have been successfully completed.

The *Employer* is not willing to take over the *works* until all related testing and commissioning have been completed, all as built documentation updated by the *Contractor*, all implementation records completed by the *Contractor*, accepted by the *Project Manager* and all related configuration updates completed by the *Contractor*.

5.3.5 Access given by the *Employer* for correction of Defects

Upon the *Supervisor's* notification of Defect following unit start-up, the *Supervisor* shall identify the period wherein access will be given to the *Contractor* for access to correct Defects. Ordinarily, access will only be given during a planned shutdown of the applicable Koeberg Operating Unit.

5.3.6 Operational maintenance after Completion

Operational maintenance will be performed by the *Employer* in accordance with the maintenance requirements specified by the *Contractor*.

5.3.7 Shipment requirements

Specific technical requirement relating to shipping will be developed and specified in the *Contractor's* design.

Refer to "*Contractor's* procurement of Plant and Materials" in this Works Information.

The *Contractor* arranges all shipments of Plant and Materials and equipment to the Site and consigns all such shipments to himself as consignee at the project shipping address, freight fully prepaid. The *Contractor* makes demurrage agreements and settlements with carriers for his shipments.

6 Plant and Materials standards and workmanship

Poor quality of workmanship will not be tolerated by the *Employer*. *Contractor* staff, including sub-*Contractor* staff performing construction work on Site will be subject to skills assessment tests in accordance with the requirements stated in KSA-119.

6.1 Investigation, survey, and Site clearance

The *Contractor* is allowed access, by the *Employer*, to the Site to further inspect the Working Area on Site. Any *works* that may be required to survey the plant area will be subjected to standard planning and scheduling requirements of plant work i.e., work plan with associated risk assessment and planning and scheduling in accordance with KAA-721 Rev 8.

6.2 Building *works*

As per TRS 240-152358699 Revision 1.

6.3 Civil engineering and structural *works*

As per TRS 240-152358699 Revision 1.

6.4 Electrical & mechanical engineering *works*

- The electrical equipment shall meet the SANS requirements as detailed in the design
- The *Contractor* shall perform detailed load calculations to determine whether the existing cabling, supply circuit breakers and protection are adequate. The electrical load calculations shall include steady state and surge current conditions.
- The crane shall be capable of jogging with no detrimental effects to any circuits or components.
- The cross-sectional area of the conductors should be determined considering the electrical load to be carried as well as the mechanical strength required.
- External cables and wiring shall be stranded, flexible, non-propagating fire-resistant cables as per SANS 1411 or SANS 1507.
- All fixed cables shall withstand the installed environmental conditions. Cables shall be protected from mechanical damage.
- Auxiliary circuits shall be provided with protective devices, such as HRC fuses.
- Conductor bars, cable reels and flexible cables shall meet the requirements in SANS 60204-32, SANS 1411 and 1507.
- The continuity of any protective bonding connection with sliding contacts shall be ensured by duplication of the current collector. Additionally, when sliding contacts are used to power electronic drives, double collectors shall be used.

6.5 Process control and IT *works*

Not applicable.

6.6 Other

6.6.1 Safety and Emergency Devices

- All safety and emergency devices shall be fit in accordance with the requirements of the Eskom approved design standard listed in Section 3.7.1(b).
- The following safety and emergency systems and devices must also be considered by the *Contractor*:
  - Gross overload protection
  - Overload alarms
  - Anti-two-block device(s)
  - Over-hoist protection
  - Over-lower protection

6.6.2 Marking and Identification

- All new components (relays, terminal blocks, SCU. etc.) shall be given a unique trigramme number. The format shall be: - DM* where the first character indicates the unit number (1/2), the three characters a sequence number (001 - 999) and the last two characters a component abbreviation. The newly allocated trigrammes shall be approved by Eskom to confirm no duplication.
- Equipment identification marking shall comply with the requirements of Reference 2.3 and marked as indicated in the drawings. The labels shall be at least 1.5 mm thick, white traffolyte with black lettering. The labels shall have chamfered edges and shall be in suitable holders or attached to the cabinets and equipment. Adhesive heat & moisture resistant marking may be used inside the cabinets for component markings.
- All equipment shall be permanently labelled prior to testing.
- All cranes shall bear the manufacturer's name, serial number, and year of manufacturer. Also clearly marked on a black background (painted) with white lettering that can be read from the floor level, the crane number and safe working load shall be indicated. All moving equipment shall be painted yellow.

At the Origin	At the Destination
1 PMC C001 1 PMC 001 AR	1 PMC C001 1 PMC 001 PJ

  - Cables must be marked at both ends of the cable with a tag indicating the cable number and its destination. As an example:
  - Cable numbering shall be approved by Eskom to ensure no duplication of numbering.

7 List of drawings

7.1 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 can be found in TRS 240-152358699 Revision 1. The *Contractor* may apply to the *Project Manager* for additional drawings that the *Contractor* may require to execute the design and installation of the *works*.

Note: Some drawings may contain both Works Information and Site Information. The *Contractor* complies with all the requirements in accordance with TRS 240-152358699 Revision 1.

8 References

The *Contractor* complies with all the codes and standards below and includes the ones listed in the TRS 240-128694927 Revision 1:

- KAA-501 Rev 11 (or latest approved) – Project Management Process for Koeberg Nuclear Power Station Modifications
- GGG-1299 Rev 0 – Guide for Technical Writing
- ISO-8601 – Data elements and interchange formats — Information interchange — Representation of dates [Commercial Document – not supplied]
- KBA 0000G001000 Rev Z2 – KNPS Standard Graphic Symbols
- 32-136 Rev 0 – Construction Safety, Health and Environment Procedure
- 32-95 Rev 4 – Environmental, Occupational Health and Safety Incident Management Procedure
- 32-421 Rev 0 – Eskom cardinal rules
- Nuclear Energy Act 92 of 1982 [Public Document – not supplied]
- National Key Points Act 102 of 1980 [Public Document – not supplied]
- Protection of Information Act 84 of 1982 [Public Document – not supplied]
- Occupational Health and Safety Act no 85 of 1995 [Public Document – not supplied]
- Basic Conditions of Employment Act No. 75 of 1997 [Public Document – not supplied]
- KSA-109 Rev 4 – Requirements for Access Authorisation at KOU
- KAA-777 Rev 4 – Process for Access to Koeberg Nuclear Station
- Immigration Act, Act 13 of 2002 [Public Document – not supplied]
- KSA-062 Rev 3 – Reactor Building Access Requirements
- KSA-119 Rev 2 – Management and Control of Supplemental Workers Koeberg Nuclear Power Station
- KAA-611 Rev 5 – Emergency Mustering, Accountability and Evacuation
- Value Added Tax Act, no 89 of 1991 [Public Document – not supplied]
- Revenue Laws Amendment Act 45 of 2003 [Public Document – not supplied]
- Project and Construction Management Act, 48 of 2000 [Public Document – not supplied]
- Occupational Health and Safety Act No. 85 of 1993
- OHSAS 18001:2007 - Occupational health and safety management standard

- 331-86 Rev 2 – Design to Plant, Plant Structures or Operating Parameters
- 240-143890978 Rev. 1 *Employer*'s internal Design Template
- KFU-026 Rev 6 – Detailed Design Review Report
- KAA-614 Rev 7 – Control of Spares Assessments and New Stock Applications
- KGA-067 - Safety, Health and Environmental Risk Assessment Guide
- KSA-132 Rev 0 – Lifting and Rigging Requirements
- KNM-001 Rev 4 – KNPS Welding Programme
- 32-631 Rev 1 – Eskom approval of personnel performing quality related special processes on Eskom plant.
- National Environmental Management Act 107 of 1998 [Public Document - not supplied]
- KAA-709 Rev 6 – Process for Performing Safety Screenings, Safety Evaluations, Safety Justifications and Safety Cases
- KGA-020 Rev 9 – Initiating a Maintenance Work Request
- KFA-002 Rev 9 – Work Plan Template
- KSA-069 Rev 4 – Foreign Material Exclusion
- KFA-006 Rev 4 – Testing Procedure Template
- KFA-035 Rev 10 – Design Change Package Implementation Approval
- KAA-667 Rev 6 – Processing a Permit to Work
- AI-025 Rev 1 – Control Room Packages
- 331-313 Rev 0 – Design Field Change Form
- KSM-015 Rev 5 – Maintenance History Records
- KSU-006 Rev 0 – Maintenance Basis Determination, Documentation and Change Control
- KFU-PE-008 Rev 1 – Plant Hand-over Certificate
- RD-0034 - Quality and Safety Management Requirements for Nuclear Installations
- KAA-721 Rev 8 – Online work Management Process
- KSM-031 Rev 2 – Scaffolding Program
- 331-170 Rev 0 – Requirements for Protective Coatings for use at Koeberg Nuclear Power Station
- KTA-001 Rev 8 – Training and Qualification requirements for Nuclear Safety Review Committees
- KAA – 688 Rev 17 - The Corrective Action Process

- DSG-317-094 Rev 4 – Specifications for Chemical Products & Materials Used at KNPS
- KLA-023 Rev 6 – Outage Preparation Milestone Checklist
- KAA-633 Rev 10 – Control of Radioactive Sources and X-Ray Equipment
- KAA-664 Rev 4 – Issuing a Construction Status Certificate / Safety Clearance Certificate
- KAA-614 Rev 8 – Control of Spares Assessments and New Stock Applications
- KSA-913 Rev 0 – Integrated Equipment Reliability Standard: Preventive Maintenance Basis
- KAA-780 Rev 7 – Systematic Approach to Training – Analysis
- 32-95 Rev 6 - Procedure Manual for Perform Occupational Health and Safety Management and Environmental Management: Conduct EH&S Incident Management
- KWM-MW-WEL-005 - Storage, Handling, Control and Preservation of Stainless Steel
- KAA-768 Rev 6 - Safety, Health and Environment and Programme
- KFV-SR-004 Rev 7
- KAE-012 Rev 8 – Hazardous and non-Hazardous waste and scrap disposal
- KSM-032 Rev 2a – Thermal Insulation
- 240-62989893 Rev 2 - DRIVER'S VEHICLE ACCIDENT REPORTING FORM
- 240-77046688 Rev 2 - Occupational Health and Safety Investigation Report Template
- KAA-751 Rev 3 – The Control of Chemical Products at Koeberg Nuclear Power Station
- DSG-318-087 Rev 0 - Quality Requirements for the procurement of assets, goods, and services
- 331-93 Rev 0 - Guide for Classification of Plant Components, Structures and Parts
- 335-68 Rev 2 – Fitness for Duty Process for Contractors who are required to Perform Work inside the Owner Controlled Area of Koeberg Nuclear Power Station.
- 331-94 (KLA-001) Importance Category Classification Listing
- KSA-021 Standard for In-service Inspection at KNPS
- KBA-0028 NES MA ISI 02 ISI Programme Requirements
- ASME Section XI Rules for in-service Inspection of Nuclear Power Plant Components, 2001 edition including addenda up to 2003
- KSA-105 The Requirements for Station Cleanliness Control of Systems, Equipment and Components
- C20 Civil Maintenance Repair Manual - Repair of Concrete Plinths
- KBA 0022 E01 020: Floor Response Spectrum for the Design of
- Equipment and Piping Systems
- KBA 1222 F00 001: Equipment Marking Specification

9 Appendices

- Appendix 1 - TRS 240-152358699 Rev 1
- Appendix 2 – DSG-310-087 Rev 2A- Generic Service Specification
- Appendix 3 – 238-103 Rev 2 – Supplier Quality General Requirement
- Appendix 4 – 238-210 Rev 2 - Supplier, Quality Management, Product and Works Information
- Appendix 5 – SD&L Compliance Matrix

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.

PART 4: SITE INFORMATION

Document reference	Title	No of pages
	This cover page	1
C4	Site Information	
	Total number of pages	

PART 4: SITE INFORMATION

1. Topographical

1.1. Location of the Site

The Site is located within ACP2 at Koeberg Operating Unit (KOEBERG) north of Melkbosstrand in the Southwestern Cape and is reached via the main road from Cape Town to Saldanha (R27). The turn off to KOEBERG is indicated on the R27. KOEBERG is approximately 30 km north of Cape Town and the approximate co- ordinates are 33°40. 7'S and 18° 26.1'E.

After the turn off, the access route follows the main road to KOEBERG. The Construction Site is denoted on Appendix 9.1.

1.2. Security check points

Prior to access to Site, there are two PEB security check points, viz, at the entrance from the R27 and at the entrance from Duynefontein. Security access is through Access Control Points (ACP) 1 and 2.

Personnel entering the Site are to be in possession of their Identity Document (ID) for verification. New personnel are to report to the ACP1 Office for administration and record update.

No cameras, firearm, cell phone and sharp objects shall be allowed to enter Site.

1.3. Subsoil information

A soil investigation has been carried out on Site by the *Employer*'s engineer. The report indicates that the ground varies between silty sand, reworked soil of mixed origin and residual shale. Trial holes indicate that the nature of the ground is silty clay to a depth of approximately 500mm with fine to medium sandy material below. The nature of the ground is assumed to be silty clay with lose river boulders varying in size up to approximately 450mm diameter but possibly interspersed with "hard rock". No subterranean water is expected. Conditions regarding subsoil information have been considered in the *Employe*r's structural and civil design. It is strongly advised that the *Contractor* appoints the nominated Civil engineer to ensure ease of the *works*.

1.4. Hidden services

Refer to drawing number SC101 – revision E; titled overall Site layout and details for identified hidden services.