| To whom it may concern | Date | Monday, 08 April 2024 |
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Dear Sir/Madam

| Request for Enquiry Number | WCKBG2516SB |
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| Description / Project Title | THE SUPPLY AND REPLACEMENT OF THE INVERTERS AND AUXILIARY SYSTEM AT KOEBERG OPERATING UNIT (KOU) |
| Tender Questions Closing Date | 30 April 2024 |

**03 April 2024 (Clarity published date)**

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| **1.** | TRS 09082A rev 1 | 1.3 and 4.2.5 | 10 and 14 | Problems with Design | What are the current problems with the distribution boards associated with LNE, LZC, SSC and SSD, i.e. what items necessitate the replacement of these distribution boards, e.g. circuit breakers, earth fault relays, displays, etc.? | Replace existing distribution boards in accordance with TRS. |
| **2.** | TRS 09082A rev 1 | 1.3 and 4.2.5 | 10 and 14 | Problems with Design | Just to be 100% sure – the requirement is to completely replace the distribution boards for those boards that have distribution boards? | Correct. |
| **3.** | TRS 09082A rev 1 | 2.2 | 11 | Scope | As safety vetting is required to view and work with the documentation, for 6 SSC / 6 SSD / 6 SSE / 6 SSG / 6 SSA / 6 SSB can the Employer please provide sufficient information at the tender stage to | Vetting is required before any security information is provided. |

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| | | | | | allow tenderers the opportunity to accurately cost for the works? | |
| **4.** | TRS 09082A rev 1 | 2.2 | 11 | Scope | Do the documents and drawings for 6 SSC / 6 SSD / 6 SSE / 6 SSG / 6 SSA / 6 SSB reflect the as-built plant status, or must the Contractor allow for the effort to confirm the as-built status of these systems as part of the offer? | It is of the employees understanding that the documents and drawings reflects as built plant status. However, it is recommended that the contractor makes effort to confirm the as-built status. |
| **5.** | TRS 09082A rev 1 | 2.2 | 11 | Scope | According to the feeder lists the 1/2 LNE and 9 LNF/G/H inverter boards house 30 V dc and/or 48 V dc rectifiers for the supply of power to various systems. Can the Employer please supply the specifications of these rectifiers, assuming that the new panels will have to replicate this functionality? | LNE – 48 V 500W<br>LNF – 48 V 500W<br>- 30 V 1000W<br>LNG – 48 V 500W<br>LNH – 48 V 500 W<br>The above must be verified and upgraded if required during the design phase. |
| **6.** | TRS 09082A rev 1 | 2.2 | 11 | Scope | The increase in capacity for the non-1E qualified LNE, LNF, LNG, LNH and LZC could require new power supply feeders (and cables) for the DC and AC supplies. Does the Employer have spare feeders that could be free issued, given that there is a high likelihood that the feeders are obsolete?<br>Perhaps the obsolescence studies for SALTO have the answer? | The new uprated inverters will be limited to the existing inverter rating, therefore there would be no need for the upgrade of cables and feeders. |
| **7.** | TRS 09082A rev 1 | 2.2 | 11 | Scope | The increase in capacity of the various inverters could be a challenge, but as this is part of the TRS, it is assumed that the Employer has considered the | Refer to 6. |

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| | | | | | impact and does not have solutions that are not expressed in the TRS. Is this assumption correct?<br>Note that alternative solutions could have a substantial impact on the timelines needed for the Contractor to put together the tender in the very limited tender period (and might require further clarification – with its own impact on the timelines). | |
| **8.** | TRS 09082A rev 1 | 4.3 | 14 | Inverter Requirements | The TRS calls for the inverter systems to be replaced with a type already installed and proven in the nuclear power generating industry and other industrial applications.<br>a. Does the "inverter systems" imply the inverters and distribution boards?<br>b. Is it a definitive requirement that the inverters and their distribution boards offered be installed and proven in nuclear power plants, i.e. it would not be acceptable to offer inverters and distribution boards that are only used in industrial applications? | a. Yes.<br>b. Yes. |
| **9.** | TRS 09082A rev 1 | 4.3.1.8 | 15 | Monitoring | What is meant by "All switches shall be monitored and flagged", i.e. where must it be monitored and flagged, e.g. in the control room (by means of indication, or in KIT, or both)? | All switches should also include an auxiliary contact to indicate its position (on/off) and should be used for alarming and control. |
| **10.** | TRS 09082A rev 1 | 4.3.1.12 | 15 | Interchangeability | In order to have interchangeable equipment and spares, all the applicable equipment installed in the NSF inverters and distribution boards will have to be qualified as 1E (paperwork included). This could have a substantial impact on cost. | This does not refer to the complete inverter system. Specific critical identified interchangeable components should carry the highest qualification. This could be achieved |

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| | | | | | | during the manufacturing (batch) process of said components. |
| **11.** | TRS 09082A rev 1 | 4.3.1.17.4 and 4.3.1.17.13 | 17 | Rating Requirements | To allow for the correct sizing of busbars (and the costing for the replacement) can the Employer please indicate typically what size (maximum) of spare breakers they envisage for the various boards? | These are to be used for busbar calculation purposes.<br>LNA/B/C/D – x4 at 5A **= 20A** each inverter<br>LNE – x15 at 5A **= 75A**<br>LNF – x5 at 5A **= 25A**<br>LNG – x10 at 5A **= 50A**<br>LNH – x5 at 5A **= 25A**<br>Further clarification to be obtained during design phase. |
| **12.** | TRS 09082A rev 1 | 5.2.3 | 26 | Dimensions | With the requirement to increase sizing and provide the new upgrades, like bypass stabilizers, specified in section 2.2 of the TRS, it will most likely not be possible to maintain similar dimensions for the new equipment. Can the Employer agree (such as not to have this as a deviation in our offers)? | Except for LNE and SSC/D, the bypass stabilizers are already part of the current design. With more modern technology, compared to when the existing inverters were manufactured, it could be possible to use the existing footprint for the new inverters, with their upgrades. |
| **13.** | TRS 09082A rev 1 | 5.2.5 | 26 | Fire Detection | For the JDT interface:<br>a. Which of the inverters or inverter switchboards are fitted with Fire Detection, i.e. is it only LNA/B/C/D?<br>b. What type of fire detection is fitted – detectors or SDA?<br>c. What are the requirements for interfacing with JDT in terms of design and installation? | a. LNA/B/C/D and LNE<br>b. Aspirating smoke detectors – VESDA units<br>c. Same as existing design |

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| **14.** | TRS 09082A rev 1 | 6 | 27 | Quality | Must the Contractor make provision for audits (with the Employer and NNR) of the inverter supplier at his overseas premises? | Yes - as discussed in the clarification meeting.<br>The tenderer must make provision for audits by Eskom and the NNR during execution of the project. |
| **15.** | TRS 09082A rev 1 | 7.4 | 31 | Safety Vetting | What are the requirements for safety vetting of personnel (to what level) and measures for safeguarding sensitive information (and what is meant by “sensitive information” in the context of design for SSC and SSD)? | Sensitive information is information exempted from disclosure, which can be classified as confidential, Secret and Top-Secret. In terms of SSC and SSD the classification of the feeder diagrams is Confidential. If this is what is currently required, at this stage of the project, a DECLARATION OF SECRECY must be completed and submitted to the employer before confidential information is provided. If higher classified information is required, then the individual must be vetted accordingly.<br>Security Vetting – Individuals requiring access to sensitive information higher than confidential must be vetted for that level of the classified information being requested.<br>Once a contract is in place, then necessary arrangements will be made with Eskom IT to provide excess to a folder, to cleared individuals, to access and perform design work on sensitive information/equipment. |

**Controlled Disclosure**

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| **08 April 2024 (Clarity published date)** | | | | | | |
| **16.** | | | | | For Item 42,2 Defects date, it states One full life cycle after each sectional completion date. The tenderer would like to know ***How Long is One Full Life Cycle*?** | One fuel cycle is approximately 18 months. |
| **17.** | TRS 09082A rev 1 | 4.1 | 14 | Generation Requirements | Can the Employer please provide references 4.1.19 and 4.1.20 and confirm that they are applicable to Koeberg? | These references are currently unavailable on the documentation platform. Eskom to revert ASAP. |
| **18.** | TRS 09082A rev 1 | - | - | LZC Detail | Can the Employer please supply details of the 0 LZC inverter and its distribution board (make, model numbers, feeder types, tripping curves), as this information does not seem to be readily available, or alternatively please supply references to where the information can be obtained for the 0 LZC inverter and its switchboard? | Details attached. |
| **19.** | TRS 09082A rev 1 | 4.3.1.17.4 | 17 | Spare Feeders and Sizing | To ensure that the upgrade makes provision for the correct spares to allow for 1) the correct sizing of switchboards, 2) the correct sizing of the busbars, and to 3) determine the impact on the inverter loads, it is imperative that the Employer provides an idea of what sizes the spares must be that the Contractor needs to make provision for, e.g.:<br>• 1/2 LNE - 15 extra feeders each - 3 x 6A, 3 x 10A, 3 x 16A, 3 x 20A, 2 x 25A, 1 x 32A (a total of 238 A)<br>• 9 LNF - 10 extra feeders - 3 x 6A, 3 x 10A, 3 x 16A, 1 x 25A (a total of 121 A)<br>• 9 LNG/H - 5 extra feeders each - 2 x 6A, 2 x 16A, | See 11. Main busbars should be sized to the size of the inverter/UPS |

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| | | | | | 1 x 20A (a total of 64 A)<br>• 0 LZC - 5 extra feeders - 2 x 6A, 2 x 16A, 1 x 20A (a total of 121 A)<br>• 6 SSC/D - 5 extra feeders each - 2 x 6A, 2 x 16A, 1 x 20A (a total of 121 A) | |
| **20.** | TRS 09082A rev 1 | - | - | SSC and SSD Detail | Can the Employer please supply details of the 6 SSC and 6 SSD inverters and their distribution boards (type of inverters, type of distribution boards and feeder types and sizes) to allow the Contractor the opportunity to find suitable replacements? | See 15. Eskom to provide NDA and SOD to individuals requesting confidential information. |
| **21.** | TRS 09082A rev 1 | 4.6.2 | 24 | FMEA | Can the Employer please confirm that an FMEA is required for the inverters and distribution boards (as this is seldom done at this level), and for which of the systems is this required? | An FMEA is required for the 1E type systems. |
| **22.** | ITT | - | - | Closing date | Given the lack of information for 0 LZC, 6 SSC and 6 SSD, and the need to have this information to quote on for the project, an extension for the closing date of 30 April will be needed. The extension period will depend on how quickly the Employer can provide the responses to the clarification questions. The Contractor will need at least 3 weeks to process the information, to send the information to the Suppliers, to receive the feedback and to build a proper technical and commercial offer. Can the Employer please consider an extension, based on when a response can be provided? | Extension to tender closing has been granted until 30 April 2024. This has been published on the tender bulletins, refer attached as reference. |

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| **23.** | ITT | | | Quality Requirements | If a supplier is currently not approved for Q1/L1 scope of work, can the supplier still tender for the WCKBG2516SB scope of work? | It should be noted that the current approval is based on the last audit and does not prohibit a supplier to submit a tender if the Quality Management System has been improved/re-evaluated since the last audit. Please see Page 10 of the Invitation To Tender for the following: Supplier Qualification Process - Suppliers who meet the functionality threshold but are not on the Koeberg Operating Unit (KOU) approved supplier listing (ASL) for the scope of work detailed in the draft NEC3 (ECC) for WCKBG2516SB will be further subjected to a supplier qualification process, which will form part of the functional stage of the evaluation |