

| Questions and Answers: Design, manufacture, supply, installation, and commissioning of Duvha Power Station Cooling Water Treatment Plant Refurbishment |  |  |
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| Enquiry number: E1013GXMPDUV   |  |  |
| Item Number  | Questions / Query  | Responses  |
| 1.   | Please can I request the following information from the EC&I technical team:<br><br>Fibre Route drawing – for the hardwiring of the mimic screen in the control room from the North and South Tower  | <b>See the attachment for fibre routes.</b>  |
| 2.   | With regards to the EC&I section of the scope, please can the following queries be forwarded to the EC&I team?   |  |
| 2.1  | What is the reliability of the 3G or Ethernet connection at Duvha PS?  | <b>We prefer a wired connection.</b>   |
| 2.2  | Is the Siemens S7 1200 or 1500 acceptable (S7-1500 is stated in the Technical Specifications document)   | <b>S7 1500</b>   |
| 2.3  | Does Eskom have supplier specs/preferences for switchgears, drives, motors, etc or should it comply to the standards (e.g LV Switchgear and Control Gear Assemblies and Associated Equipment for Voltage up to and including 1000V AC and 1500V DC Standard) but the supplier is up to the contractor. | <b>Electrical Eng to answer</b><br><br><b>- All components to be utilized must comply to the following Eskom standards. In instances where Eskom standards are not applicable, compliance with applicable SANS is required.</b><br><br><b>- Switchgear/DB - 240-56227516</b><br><b>- LV Motors - 240-57617975</b><br><b>- Cabling - 240-56227443</b> |

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| 2.3.1 | Does Eskom have a preference in the Panels set up and Material of Construction for the two panels on the North and South sides?   | <ul style="list-style-type: none"> <li>• <b>Compliance to Eskom</b></li> <li>• <b>Standard: 240-56355815: Control &amp; Instrumentation Field Enclosures and Cable Termination</b></li> </ul> <b>Standard.</b> |
| 3     | What is the current functional design of the lime dosing system? How often and how stringent should the feedback control be? This links with point 1 on if a wireless connection is possible. | <b>Feedback needs to be reliable to ensure that blockages does not take place.</b>   |

| <b>CONTROL AND INSTRUMENTATION REQUIREMENTS</b> |  |  |  |
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| <b>TASK</b>                                     |  | <b>AP Query</b>  | <b>Responses</b>   |
| 1   | Supply, install and commission PH Sensor As per the tech specification document and all C&I appendices                     | <p>This is not specified in Technical Specification document.</p> <p>Is this as per supplier discretion or must it be Eskom RTD approved?</p>  | Standardise to the latest version of the currently installed PH analyser |
| 2   | Supply, install and commission Instruments As per the tech specification document and all C&I appendices                   | <p>No Query</p> <p>The equipment and instrumentation types, as well as the values will be optimised during the Contractor's detail design.</p> |  |
| 3   | Supply, install and commission Limit of supply and services As per the tech specification document and all C&I appendices  |  |  |
| 4   | Supply, install and commission Input/output interface As per the tech specification document and all C&I appendices        |  |  |
| 5   | Supply, install and commission Input/output new modules As per the tech specification document and all C&I appendices      |  |  |
| 6   | Supply, install and commission Cabling and termination As per the tech specification document and all C&I appendices       |  |  |
| 7   | Supply, install and commission Limits of Supply and Services As per the tech specification document and all C&I appendices | Repeat of 3  |  |

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| 8  | Supply, install and commission input/output Interface As per the tech specification document and all C&I appendices                               | Repeat of 4  |  |
| 9  | Supply, install and commission Input/output new modules As per the tech specification document and all C&I appendices                             | Repeat of 5  |  |
| 10 | Perform Cabling and Termination As per the tech specification document and all C&I appendices   | The termination in the junction boxes to the PLC is part of contractor's scope but – will Eskom refurbish the current junction boxes if required?                | Depending on their design if they need new junction boxes, they must supply them. The statement was regarding the existing junction boxes i.e. if they are damaged. Remember we are no longer interfacing with the ABB system. They cannot design and install new PLCs without new junction boxes. |
| 11 | Replacement of all KP panels As per the tech specification document and all C&I appendices  | Does this refer to the PLC system on the North Tower   | Ignore this, it does not form part of the scope as we will be installing standalone system that will be independent of the ABB DCS.  |
| 12 | Transfer North Soda Ash plant controls from the Siemens S7 300 PLC to the ABB 800xA As per the tech specification document and all C&I appendices | The North Tower PLC system is to be replaced with another stand-alone system that is Siemens.<br><br>Is the ABB 800xA part of the plant DCS?                     | Ignore this, it does not form part of the scope as we will be installing standalone system that will be independent of the ABB DCS.  |
| 13 | Assessment of existing fibre optic cable from the panels to the DCS As per the tech specification document and all C&I appendices                 | Please can the existing fibre optic cable route be sent and can we assess these routes during another site visit to allow us to provide an estimate for point 14 | Ignore this, it does not form part of the scope as we will be installing standalone system that will be independent of the ABB DCS. I will share the existing routes so that you can install new fibre for the new standalone system.  |
| 14 | Supply and Installation of new fibre optic cable from the panels to the DCS and installation of the   | Depends on point 13  | Fibre routes will be shared.   |

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|    | screen at WTP As per the tech specification document and all C&I appendices  |   |   |
| 15 | Update field instrumentation as per the instrument schedule As per the tech specification document and all C&I appendices          | <p>The document labelled 240 -61227631 is actually Standard for Low Pressure Valves</p> <p>Please can a P&amp;ID or instrument schedule be forwarded?</p> | Will attached and forward.  |
| 16 | Update the drivers interface for the plant as per the drive schedule As per the tech specification document and all C&I appendices | Please can a drive schedule be forwarded?   | <p>Electrical Eng and Aux Eng to share</p> <p>240-61379755 (Rev 2) is an C&amp;I drive and actuator schedule template. The question is not clear , however, the two schedules have been attached to the email as per the request.</p> |
| 17 | Install new tapping points for additional instrumentation As per the tech specification document and all C&I appendices            | From Technical specification: Installation of tapping points of G 1/4" thread for pressure transmitters on the pipes that need to be a female connection, | Please comply to the Eskom standards in the document  |
| 18 | Cabling, racking and power distribution As per the tech specification document and all C&I appendices                              |   |   |
| 19 | Training of the C&I personnel on the new C&I equipment by the OEM. As per the tech specification document and all C&I appendices   |   | Training as specified in the tech spec. specific Siemens courses.   |