THE DESIGN, SUPPLY, TRANSPORTATION, DELIVERY, INSTALLATION, TESTING AND COMMISSIONING OF A HARDENED INSTRUMENTATION SYSTEM AT KOEBERG NUCLERAR POWER STATION

WCKBG2430AG

No.	Document	Section	Page	Clarification Questions	Client Response
1.	KGB2430 - Invitation to Tender.pdf	Closing date	1	The tenderer would like to urgently request an extension of the tender closing date, from the *7th of December 2022* to the ***8th of March 2023*** in order to allow for due diligence, allow for engagement with the market / specialists / consultants and suitable subcontractors as required, negotiate contractual agreements and to provide a fully compliant and value for money bid: • Due to the scale and multiple interfaces of this project, additional time is requested to understand the full scope; • The tenderer(s) must follow internal processes before submission (board approval, etc.) and requests additional time to enable this to take place; • Additional time is requested to engage meaningfully with the DTIC if and where required; • There are holidays, contractor closures and office closures taking place in December making the compilation of the package difficult as key team members may not be available; • Additional time is requested to engage with the appropriate subcontractors/suppliers; • This project requires *qualified equipment*, international procurement, a new concept (as it is not a modification of existing systems), research and careful consideration of placement, routing, etc. Additional time is urgently required for our technical team to evaluate and produce a workable solution. The tenderers requests that Eskom responds as soon as possible so that our bid preparation programmes take this extension into account.	To be advised after agreement with all relevant parties.
2.	TRS 240-129490083 Rev 2	GENERAL	-	For interest: Is the concept that the Employer used in developing his TRS based on a system that was derived internally (own concept), or is it based on something derived from one of the overseas utilities?	Internally.

3.	6TRS 240-129490083 Rev 2	§2.2.1	6	The new system will be classified as safety class NSF (and DER) and not 1E. Is there any reason why the Employer wants the software to be generated using a V&V process as per reference [11]? Note that this requirement is not reflected in the body of the specification and not referred to from there either.	There seems to be an implication that IEEE 1012 is only applicable to 1E systems. The Designer should choose a suitable Integrity Level – an initial estimate is Level 2.
4.	TRS 240-129490083 Rev 2	§2.2.1	6	The new system will only be for monitoring of parameters and will have no control functions. Is there any reason why an FMEA (ref [18]) is required?	Refs [18] and [19] are required primarily for the consequence analysis of faults. For example, a power supply fault, or a network switch fault – how and when would these be reported or identified. It is acceptable to perform this analysis by means other than [18] and [19].
5.	TRS 240-129490083 Rev 2	§2.2.2	8, 9	Can the Employer please make the following documentation available: - [60] – 240-91479924 for Cyber Security - [87] – 240-131063677 for the Koeberg port-Fukushima strategy - [90] – 240-121010217 – DER guidance for Seismic - [91] – 240-121013197 – DER guidance for severe temperatures - [92] 240-55410927 for cyber security Standard - [93] 240-79669677 for DMZ designs	These can be made available to individual email addresses once NDAs are signed.
6.	TRS 240-129490083 Rev 2	§5	15	Will the new system components be part of non-safety related Train A (colourless), or part of the safety related Train A (Orange)? Or in other words: what are the requirements for cable installation and train assignments for DER equipment when designed from scratch (as in this case)?	This is determined by the Designer, but the expectation is that they will mostly be Colourless.
7.	TRS 240-129490083 Rev 2	§5.1	15	Are any of the components/parts of existing systems that must be used / interfaced with for the project capable of withstanding the radiation levels specified for these beyond design base events?	
8.	TRS 240-129490083 Rev 2	§5.1	15	Can the Employer confirm that the currently installed cable trays can withstand the Severe Environmental Conditions specified?	On the aseismic island – yes.
9.	TRS 240-129490083 Rev 2	§5.3.1	16	What is the software classification for the new system?	IEC 62138 Category C
10.	TRS 240-129490083 Rev 2	§5.5.2.3	18	According to the Feeder Diagram for Unit 1 - 31.46/1004 - there is no 078 JA, and for Unit 2 - 31.46/1005 - 078 JA is an unequipped spare (with no position in the board).	Revised TRS published on tender bulletins

				(Interestingly, the feeder lists for both units show LNE 059 JA as spare, whereas the Board Outage Sheets and KBA 1215 G10 014 show them assigned to KKO). The Board Outage Sheers 31.46/1051 and 31.46/1053, for units 1 and 2, respectively, do not show feeders 435 as being present. Feeder List KBA 1215 G10 014 also does not show 078 JA as being present.	
11.	TRS 240-129490083 Rev 2	§5.5.2.3	18	Are there spare circuit breakers for LNE in the Eskom stores that Contractors can draw from, seeing that the Elfa-G2 circuit breakers are obsolete and can no longer be procured?	TBA
12.	TRS 240-129490083 Rev 2	§5.5.2.4	18	What “portable” equipment must be charged from the battery, or are these only the 15 portable laptops? This is a very NB input, as the batteries need to be sized to provide this capability for a period of 36 hours.	“The battery” is the only source of power for the system being supplied. It will not be used to supply any other equipment.
13.	TRS 240-129490083 Rev 2	§5.5.3.1.2	19	The existing cold junction boxes RIC 001 BC and RIC 002 BC are classified as NSF/NC/Q3. Taking the signals from here therefore does not fit the new requirements for the system (especially seismic requirements). It might be necessary to take these signals from the penetration terminals instead.	The existing cold junction boxes are RIC 001 BS and RIC 002 BS and are classified as 1E/1A.
14.	TRS 240-129490083 Rev 2	§5.5.3.2.3, §5.5.3.2.4, §5.5.3.2.5	20	Given that three referenced transmitters on RCP 001 to 003 GV are not qualified for the specified Severe Environmental Conditions, can the Employer please explain what is meant by “identical to” in this context?	Identical in engineering range only – wide range level.
15.	TRS 240-129490083 Rev 2	§5.5.3.2.6, §5.5.3.2.7, §5.5.3.2.8	20	Are the existing impulse lines associated with ARE 061 MN to ARE 063 MN and ARE 055 MN to ARE 057 MN qualified for Severe Environmental Conditions?	Yes.
16.	TRS 240-129490083 Rev 2	§5.5.3.2.10 and §5.5.3.4.3	20	Are the existing Kapton-insulated feedthroughs qualified for Severe Environmental Conditions, or should those feedthroughs not be replaced with PEEK insulated feedthroughs (provided the PEEK insulated feedthroughs are qualified)?	The Kapton-insulated feedthroughs are currently qualified.
17.	TRS 240-129490083 Rev 2	§5.5.3.3.1, §5.5.3.3.2, §5.5.3.3.3	21	Are these impulse lines qualified for Severe Environmental Conditions?	Documents disagree – looks likely for seismic qualification.
18.	TRS 240-129490083 Rev 2	§5.5.3.5.1 and §5.5.4.8	21	What type of technology does the Employer have in mind for this installation that is designed for Severe Environmental Conditions?	A good conductor suitable for insertion into the SFP. Maybe stainless steel bar? - Designer to select.

19.	TRS 240-129490083 Rev 2	§5.5.4.19 and §5.5.4.21	23	Given that the time clock and network switch is integral to the BDB, is it correct to state that they also have to be seismically qualified as part of the BDB?	Yes, it is correct. “qualified” is probably an overstatement. Almost all small electronics can survive a severe seismic event if mounted properly. For example any smartphone.
20.	TRS 240-129490083 Rev 2	§5.5.8	25	Is it the intent of the Employer that the new BDB cabinets (and batteries + chargers) be equipped with fire detectors that will tie into the existing JDT Fire Detection system in the Electrical Building (assuming also that the system complies with the requirements of NFPA-72 – reference [3])?	Yes.
21.	TRS 240-129490083 Rev 2	§5.5.8	25	If the answer above is Yes, what are the requirements from the Employer for the integration into the JDT system?	Include into existing loops in the same rooms.
22.	TRS 240-129490083 Rev 2	§5.5.8.2	25	Has the Employer done any studies as regards seismically induced fire (especially on the 7 m level where the BDB and its associated equipment will be stored) that could be shared with the Contractor?	Yes, EERT-11-018 can be shared after an NDA is signed.
23.	TRS 240-129490083 Rev 2	§6.1.1	27	The statement that the monitoring system will use off the shelf components could be misleading, and could even be wrong, given the seismic requirements for the BDB. For off the shelf equipment it will be very specifically selected equipment that have been qualified as part of the BDB seismic design and qualification. Does the Employer agree?	No. See response to Q19. Not ALL off-the-shelf equipment would be suitable, but many options would be sufficiently robust.
24.	TRS 240-129490083 Rev 2	§8.1.8	30	As this is an entirely new system is it correct to assume that it will have a unique set of new trigrammes for the hardware and will require a full suite of new documentation, e.g. new DSE, MM, and all associated diagrams.	Trigramme, yes. New DSE, MM as appropriate, yes.
25.	NEC ECC3 – Part C1.1	3	8	Considering that almost 4 months have been allowed for the Scheme Design and that the Scheme Design will most likely not yet be signed off by the time the Detailed Design has to be issued (given the review cycles), it is not feasible to deliver the Detailed Design in 1 month from the Scheme Design. Can the Employer please reconsider this important key date?	TBA
26.	NEC ECC3 Attachment	-	-	Note that there is a version, with the cover page at revision 2a of TRS 240-129490083 attached to the NEC contract that is unsigned. Is this document applicable to the contract?	The incorrect Revision was published. The TRS is at Revision 2a. Rev 2a will be published on the Tender Bulletin.