

	Briefing Note	Document Identifier	240-120475928	Rev	1
		Effective Date	09 November 2016		
		Review Date	July 2026		

Classification	Clarification to Tender Documents	Date	19 August 2024
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For Attention	All Tenderers	Clarification No.	14
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From	Procurement & Supply Chain Management	Contact Number	073 8512254 makhubtc@eskom.co.za
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Subject	Upgrade of the Heating, Ventilation, and Air Conditioning (HVAC) System at Matimba Power Station
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No	Reference to SoW	Discipline	Query	Eskom Response
1.		Civil	Goods lift dimensions?	D: 3100mm, H:2400mm, W:2100mm.
2.		Electrical	When working in certain rooms (equipment) is special tools required. Mentioned of scaffolding and ladders with the arc flashing?	For battery rooms (Hazardous Location areas), spark free equipment and tools are needed.
3.		LPS	Is if fire rated dampers and return ducting on all areas?	Yes
4.		LPS	Fresh air supply for economy mode on the AHU for aux bays? I only saw fresh air supply to some of the AHU's.	Fresh air supply is required for all Air Handling Units
5.		LPS	Is there outage related work?	Most of the work will be executed whilst the units are on load.
6.		LPS	How was the rigging for the chiller at unit 1 achieved?	"There is a service shaft at all units.

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				Unit 1 chiller has been replaced recently and was rigged using the existing service lift. The frame, motor and compressor was lifted separately and assembled on the floor in the plant."
7.		Employer's Rep?	Will it be possible to drop the chillers through the roof if they can crane it up?	The space for a crane to reach is a distance, and removing the roof is not an option. The shaft will have to be used.
8.		LPS	Humidifiers Electrode or Ultrasonic?	Existing design is based on electrode humidifiers.
9.		C&I	Cable routes to the BMS? Where will the BMS be situated and how will communication work from all substations and Simulator to the BMS.	Eskom's response will follow in due course.
10.		C&I	On the fibre connections for HVAC CBMS, are there existing network switches that the Contractor can use?	Eskom's response will follow in due course.
11.		Electrical	Is there a requirement to include H2 sensors in battery rooms, has the Battery spec or any other spec requesting for this been included in the enquiry pack?	Yes, related specification have been included.
12.		LPS	Is there a fire rationale for Matimba that can be consulted by the Contractors	No.
13.		Electrical	Lighting and Protection requirements, is this part of the	Yes. Earthing and Lightning Protection Standard (240-56356396).
14.		Electrical	What are the transformer sizes feeding the Unit HVAC board, Single line drawings will help.	1.6MVA Unit Air Cond Trf, 11/0.4kV (Non-Essential Board), Essential Aircon Board is directly supplied from the 380V Unit Diesel Generator Board.

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15.		Electrical	Are there cable schedules for the HVAC Boards, please provide that which is available to assist with cable length	Seeing as the scope is to replace everything (equipment and LV Aux bay switchgear boards), cable schedules will not be relevant.
16.		Electrical	The Contractors have requested for substation layouts indicating the room sizes and equipments located within	Appendix 11 of Works Information.
17.	Page 9, Introduction	LPS	In the MV and LV switchgear rooms heat is already generated so is additional heating required for winter?	Heating is not required for these room.
18.	Page 17, Existing Unit 1 to 6 EFP Transformer Room HVAC System Description	LPS	The equipment capacities given are already calculated and approved by eskom, that its safe to assume that we do not need to verify the heat loads and equipment capacities?	The heat loads do not have to be verified during tendering stage.
19.	Page 18, Existing EFP Transformer Ventilation System	LPS	Will these fans remain in place or be replaced?	The extraction system ventilation fans and associated ductwork in this case will not be replaced with new.
20.	Page 18, Existing EFP Transformer Ventilation System	LPS	Existing EFP Transformer Air Conditioning System	The complete air conditioning will be replaced and serviced by new fan coil units.
21.	Page 18, Existing Station Services Building (SSB)	LPS	Will this pipe network be separate from Will this pipe network be separate from auxiliary unit 1-6 chilled water systems? unit 1-6 chilled water systems?	Yes the piping network will be separate from the unit 1-6 chilled water systems.

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	HVAC System Description			
22.	Page 18, Existing Condensate Polishing Plant (CPP) HVAC System Description	LPS	Please clarify what 100% rated means	The existing system is 100% on duty (no standby). Note that the new installation must have a duty and standby units as per section "4.3.7 Condensate Polishing Plant (CPP) HVAC System Design"
23.	Page 18, Existing Simulator Building HVAC System Description	LPS	Do we replace, upgrade, repair, service, ignore?	Refer to section "4.3.8.1 Simulator Building DX System Cooling and Heating Plant": The existing Simulator Building split type units are to be replaced with 2-off new heat-pump type units rated, each at 80 kW cooling capacity. The Simulator Building are to be equipped with duty and standby ducted type cooling only package units or similar type units.
24.	Page 19, Existing Outside Substations HVAC System Description	LPS	Do we replace, upgrade, repair, service, ignore	"Refer to section "4.3.9.1 Outside Substations DX System Cooling Plant" The existing pressurization units are to be replaced with new DX units rated at cooling capacity detailed by required cooling capacity tables under section 10 below. The outside substations are to be equipped with duty and standby ducted type cooling only package units or similar type units with economy cycle to allow full ventilation and free cooling when outdoor air temperature is suitable. Read the entire "4.3.9 Outside Substations HVAC System Design" for more information about the required new installation"

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25.	Page 19, Parts of the Works which the Contractor is to Design	LPS	What ambient temperatures do we use, as there are shown on pg 20. We also need to know the ambient Rh in summer and winter to use.	The cooling/heating loads are already provided in the tender document for tendering purpose. However, the following data can be used where required: Use weather data as indicated by section 1.6 of C4 ECC3 Site Information. The mean maximum temperature (DB) for summer and mean minimum temperature for winter is taken as a design condition. The month with the highest relative humidity is April (53.60 %), the month with the lowest relative humidity is September (32.70 %). Source: climate-data.org as per January 2022
26.	Page 19, Parts of the Works which the Contractor is to Design	LPS	Is the detailed design required at tender stage	The detailed design is not required at this stage. The detailed design will be the responsibility of the successful bidder at the later stage
27.	Page 20, Parts of the Works which the Contractor is to Design	LPS	Will the repairs and maintenance be done by the installer or Eskom staff	Repairs and maintenance will be undertaken by Eskom once the new plant has been handed over and accepted by Eskom. The contractor needs to provide Eskom with a least of critical spares as part of this contractor.
28.	Page 20, Indoor Design Conditions	LPS	Controlling each space or zone individually can only be done accurately if each zone has a humidifier which is extremely costly, alternatively a single humidifier measuring return air RH can be used, but each zone may not have the same RH	A single humidifier measuring return air RH is to be used. Humidifier is to be installed at AHU unit supply air ducting section at the plant room level.
29.	Page 21, Auxiliary Bay Water-Cooled Chilled Water System	LPS	Is piping topology to remain the same or can we recommend VPF or Primary/Secondary loop.	Piping configuration is to remain as is, primary loop only.

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30.	Page 21, Auxiliary Bay Water-Cooled Chilled Water System	LPS	What is the required piping and insulation specification	Piping and insulation specification requirements are stipulated by Eskom Document: 240-102547991 (General Technical Specification for HVAC Systems Standard).
31.	Page 26, Auxiliary Bay Water-Cooled Chilled Water System	LPS	Pg 26 mentions "Design: Air cooled chiller configuration is designed as running + standby system. The system however has a single point of failure in terms of chilled water pipework." Which means we cant be held liable for temperature deviations if there is a catastrophic failure in the pipe network.	Yes, Eskom can't hold the Contractor liable for temperature deviations if there is a catastrophic failure in the pipe network. Eskom is aware of the risks associated with piping configuration as single point of failure.
32.	Page 22, Auxiliary Bay HVAC System Fresh Air and Supply Air Distribution Network	LPS	Are these individually managed or via BMS?	This functionality needs to be achieved through the local control panel and via BMS as well.
33.	Page 22, Auxiliary Bay HVAC System Fresh Air and Supply Air Distribution Network	LPS	Please clarify. Economy cycle can either be face and bypass damper system with return fan or a damper on return air to allow ambient air to be drawn in	Through the damper on return air to allow ambient air to be drawn in
34.	Page 23, Auxiliary Bay HVAC System Fresh Air and Supply Air	LPS	Are belt driven fans required or could we use EC plug?	Belt driven fans are preferred in this case.

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	Distribution Network			
35.	Page 23, Auxiliary Bay HVAC System Fresh Air and Supply Air Distribution Network	LPS	Should the drain pipe be PVC or galvanized or copper?	Both PVC and Galvanised drain piping can be used. Copper piping is not used for condensate in this case.
36.	Page 24, Auxiliary Bay HVAC System Fresh Air and Supply Air Distribution Network	LPS	Should these units be BMS compatible? Can R32 refrigerant be used?	BMS compatible. R32 refrigerant or similar environmentally friendly refrigerants.
37.	Page 24, Auxiliary Bay HVAC Extraction System	LPS	Should this be controlled by BMS or standalone?	This functionality needs to be achieved through the local control panel and via BMS as well.
38.	Page 24, Auxiliary Bay HVAC Extraction System	LPS	Is there no mechanical cooling only free cooling by means of ambient air being lower than room temp?	Battery rooms are to be provided with cooling system as detailed by section 10 (HVAC Equipment Capacities) and free cooling is to be implemented when ambient air is lower than room temperatures.
39.	Page 24, Auxiliary Bay HVAC Extraction System	LPS	What if ambient air is higher than room temp? If free cooling is used is RH control still required?	Relative Humidity is not controlled on the batter rooms.
40.	Page 25, Auxiliary Bay HVAC System Controls	LPS	Is this for all HVAC equipment, and is this to bypass BMS control	This functionality needs to be achieved through the local control panel.

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41.	Page 25, Auxiliary Bay HVAC System Controls	LPS	<p>The HVAC system is to automatically return to normal operation once the fire alarm signal to the air conditioning switchboard is cleared.</p> <p>Recommend having a manual system for this, if a fire signal is sent and that part of the system is damaged by the fire the HVAC system may operate again when it should not</p>	Function of detailed design. It will be concluded then.
42.	Page 25, Unit 1 to 6 EFP Transformer Room HVAC System Design	LPS	If water is used in these rooms do we need to allow for leak detectors	Yes, allow for water detectors and Custom build drain pans/drip trays are to be provided underneath each air conditioning unit.
43.	Page 25, Unit 1 to 6 EFP Transformer Room HVAC System Design	C&I	If we use Bacnet/IP could we use existing IT/ICT infrastructure Eskom has in place	Eskom's response will follow in due course.
44.	Page 27, Table 5: Main HVAC Equipment Details for each EFP Transformer Room	LPS	Should we confirm this heat load or just offer equipment in this list?	No need to confirm heat loads at this stage as heat load analysis has been performed by Eskom.
45.	Page 27, EFP Transformer Room Air-Cooled	LPS	Could we use existing enclosures and just replace heat exchangers, fans, filters and controllers?	Existing AHU enclosures are to be used where feasible during detailed design and construction. However, Contractor's to price for new AHU enclosures at the tendering phase.

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	Chilled Water System			
46.	Page 28, EFP Transformer Room HVAC Extraction System	LPS	This mention clean rooms, should we work on a specific clean room specification for air cleanliness	No need for clean room specification, the filtration design is to be based on the filtration requirements provided by the Work Information.
47.	Page 28, EFP Transformer Room HVAC System Controls	LPS	Please clarify, it states all 4 units are running but then asks for a standby unit in the case of unit failure or excess heat, re the separate standby units over and above the 4 x required?	Yes, all 4 units will be running to provide adequate air for transformer ventilation under normal conditions. However, 3 units are adequate to handle the heat load under normal conditions. Running all 4 units in this case is just a preferred operating control philosophy to handle transformer air requirements.
48.	Page 28, SSB HVAC System Fresh Air and Supply Air Distribution Network	LPS	Can we offer a different method of heating as an alternative	The given method to be used for tendering, other options can be recommended by the appointed contractor at the later stage during the detailed design stage of the project.
49.	Page 31, SBB HVAC System Controls	LPS	Is the fire system part of the scope in terms of detection, panels, signals?	Not part of the scope; the contractor scope is limited to interfacing HVAC with fire.
50.	Page 31, SBB HVAC System Controls	LPS	Is the BMS part of the scope? If yes will it only control the HVAC and fire? If we do fire is it single or double knock	HVAC BMS is part of the scope.

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51.	Page 32, CPP HVAC System Fresh Air and Supply Air Distribution Network	LPS	Standard rooftop packaged units aren't capable of handling 2 stage filtration, so these would need to be custom built units. Could we get acceptable cabinet specs, IP ratings, efficiency etc	<p>Eskom is not requesting for standard rooftop packaged units but custom-built units as follows:</p> <ol style="list-style-type: none"> 1. Location: Outdoor. 2. Housing (Internal / External): Chromadek / Chromadek. 3. Insulation: Polyurethane. 4. Framing: Sealed tongue-and-groove. 5. Panel Thickness: 50mm Thk. Panels + 75-50mm slopingmm Thk. Roof. 6. Base Profile and Finish: Steel Channel + Black Enamel Finish. 7. IP Rating: IP65.
52.	Page 33, Simulator Building DX System Cooling and Heating Plant	LPS	If the condensers are to be filtered is this required for all air cooled equipment like the 440kW chillers	Only applicable to DX package units or similar DX units.
53.	Page 33, Simulator Building HVAC System Fresh Air and Supply Air Distribution Network	LPS	Is the use of variable volume diffusers required/allowed? Do any diffusers have or require re heat?	All constant volume. Heating will be provided by the heat-pump air conditioning system.
54.	Page 38, Cabling Requirements	Electrical	Are these documents required at tender stage?	Yes
55.	Page 38, Cabling Requirements	Electrical	Are these circuits already in working condition serving the HVAC equipment to be installed/replaced?	All the LV aux bay boards (Essential and Non-Essential boards) will be replaced. For common plant, there are spare

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				buckets that need to be equipped to power the HVAC that will be installed/replaced.
56.	Page 38, Cabling Requirements	Electrical	Should we have hydrogen sensors installed, or replace/test existing?	Yes.
57.	Page 38, Cabling Requirements	Electrical	Paragraph D denotes Section C board as feeding non redundant equipment, but paragraph E denotes that Section C requires a dual feed system. Is this correct?	Yes it is correct.
58.	Page 40, 380V AC HVAC Cooling Tower Electrical Power Supply Requirements	Electrical	The fire signal will de enegeize all fans including exhaust, should this not only de energize fresh air and keep exhaust running to extract smoke?	Correct exhaust fans will continue to run to extract smoke.
59.	Page 40, LV Switchgear General Requirements	Electrical	Could we ask for the protocol this system uses. Should it integrate to the BMS.	BMS does not interface to SAS.
60.	Page 40, LV Switchgear Functional Requirements	Electrical	If we have to re position or even slightly move existing MCC panels we run the risk of cable faults, electrocution, fire etc. Can this be done without de energizing these? If not when will lockouts be accepted?	During outage..
61.	Page 42, Circuit Breaker Trolleys and Access Ladders	Electrical	If multiple of the same type of breaker is supplied in different switchgear rooms can we use the same trolley? Will the trolley become Eskom property and remain on site?	One trolley per substation per breaker type. These trolleys will become the property of Eskom.

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62.	Page 42, Operating and Maintenance tools	Electrical	The 2nd paragraph mentions handling equipment is provided for anything heavier than 25kg. To clarify are we providing the equipment or is the employer (Eskom) providing	The Contractor is providing the equipment.
63.	Page 43, LV Switchgear Design Acceptance and Type Testing Requirements	Electrical	How often are these tests required, and are the costs for the employer or contractor?	These tests will be conducted as per 240-56227516 and SANS 61439-1.
64.	Page 44, HVAC Plant LV Switchgear Locations	Electrical	If excessive heat buildup is determined should existing HVAC be upgraded or replaced if its not part of the scope? If it is and the equipment required is larger than the scope indicates should this form part of the tender price or will it be viewed as a VO?	The equipment cooling capacities caters for 10% safety margin. No need to worry about additional required cooling capacities at this stage it will form part of detailed design if need be.
65.	Page 44, HVAC Plant LV Switchgear Locations	Electrical	Are these reports required for each and every CT,VT supplied or would a certificate for a batch number be acceptable?	The calibration certificates are for each VT and CT.
66.	Page 44, Other Requirements of the Contractor's Electrical Design	Electrical	Does this mean we need to make sure that spares shall be manufactured for that period of time or do we need to supply these spares based on them having sufficient quantity for a service life of 30 years?	The Contractor must provide spares list and we require the OEM support for the life expectancy of the equipment.
67.	Page 57, HVAC BMS Related Equipment	C&I	Is this a existing report or a report we need to provide?	Eskom's response will follow in due course.

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68.	Page 58, Network Equipment and Security	C&I	Do we use existing network infrastructure Eskom uses, or should this be a standalone network separate from the power generation control system and office network? Which security software is acceptable?	Eskom's response will follow in due course.
69.	Page 62, C&I Cabling and Glands	C&I	According to what ambient temperatures should cables be selected for voltage drop and resistance calculations?	Eskom's response will follow in due course.
70.	Page 68, Structural Steel	Civil and Structural	Is a site weld workshop allowed in the demarcated hoarding area for the contractor?	Eskom's response will follow in due course.
71.	Page 68, HVAC Project Execution Methodology	LPS	Is anything from item A-t required at tender stage?	Appendix 9: Vendor Document Submittal Schedule (VDSS) stipulates the documents required at tender stage
72.	Page 69-70, Basic Engineering	Contract Management	Would the contractor be entitled to submit a variation to the tendered sum for item discovered in on or before the design freeze that significantly impact the works scope or methods used?	Eskom's response will follow in due course.
73.	Page 70-71, Factory Acceptance Testing (FAT)	LPS	If FAT is required for equipment such a chillers produced in a country other than South Africa could we get a list of FAT required to allow for flights and accommodation for employer staff. We would need the equipment tests to be witnessed, and quantity of people to be present from the employer	FAT will only be undertaken within the borders of South Africa and the employer representatives will make their own travel arrangements as when required.
74.	Page 73, Commissioning	LPS	Is this and SIT testing allowable as an in house practice or is a external company required to do this and share their findings	This activity needs to be executed by Contractor's commissioning representative and verified by employer. In-

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			with the installer and Eskom? For example a NEBB certified commissioning agent	house or external will be acceptable provided they have the required experience
75.	Page 73, Other Requirements of the Contractor's Design	LPS	Any recovered refrigerant can either be sent to the manufacturer for testing and "cleaning" and bought back to re use, or can be sent for recycling/destruction. In either case Eskom would receive a certificate for the amount in kg of refrigerant sent in for ISO environmental use. Eskom would need to notify the contractor before the time of tender which option is chosen as costs are involved in either option	Any recovered refrigerant is to be recycled or disposed and Eskom is to be provided with the certification thereof.
76.	Questions from site clarification briefing	Electrical	For the HVAC equipment we need to supply new supply power cables if required, so we need to supply the switchgearfeeding that cabler as well, or is our responsibility only from the cable to the load and the supply is taken care of by Eskom.	<p>"The electrical requirements are detailed under section 4.3.11 of C3.1 ECC3 Employer's Works Information.</p> <ol style="list-style-type: none"> 1. New 380 V HVAC Electrical Distribution Panels, cabling inclusive of cable racks, earthing, circuit components etc. is to be provided by the contractor. 2. These new 380 V HVAC Electrical Distribution Panels will be powered from existing 380 V switchgear. 3. Power cabling includes incoming power cable from 380 V boards supplying the 380 V HVAC Electrical Distribution Panels; and further includes power cables from HVAC Electrical Distribution Panels feeding respective HVAC plant equipment in different areas. The incoming power Cable from the existing 380 V switchgear to the HVAC LV switchgear will be the responsibility of the Contractor."
77.	Questions from site clarification briefing	Electrical	Do we need to allow for surge protectors, over/under voltage protection, RFI chokes etc on our electrical equipment and panels	All LV switchgear to be done in accordance with 240-56227516; motors in accordance with 240-57617975.

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78.	Questions from site clarification briefing	Electrical	What is the minimum IP rating allowable for electrical panels	The indoor ASSEMBLY's metal enclosure shall have a minimum external degree of protection of IP3X in accordance with SANS 60529
79.	Questions from site clarification briefing	Electrical	Is there a requirement to monitor electrical energy use on any of the equipment supplier	The indoor ASSEMBLY's metal enclosure shall have a minimum external degree of protection of IP3X in accordance with SANS 60529
80.	Questions from site clarification briefing	Electrical	Could we assume that for loop circuit feeds the phases would be free of harmonic distortions and would be synchronized if coming from different sources	In accordance with 474-11542, Generation Plant General Electrical Specification attached.
81.	Questions from site clarification briefing	QS	Are we permitted to add in line items in the BOQ?	Eskom's response will follow in due course.
82.	Questions from site clarification briefing	LPS	Which areas would not need humidity control?	Page 20, Indoor Design Conditions, stipulates which areas require humidity controls. Section 10 further describes which AHUs feeds which area.
83.	Questions from site clarification briefing	Configuration Management	For KKS labelling system if we label a long run of ducting, piping, cabling how far apart should labels be spaced	All detailed by Kraftwerk-Kennzeichensystem (KKS) codification standard
84.	Questions from site clarification briefing	LPS	How far apart are cableway supports, chilled water piping supports accepted	stipulated by Eskom Document: 240-102547991 (General Technical Specification for HVAC Systems Standard)
85.	Questions from site clarification briefing	Electrical	For PPE what is the minimum Cal rating the arc flash suits must comply with? Could we get a list of required PPE	Refer to Eskom standard 240-56179027(Generation Safety Measures against the Thermal Hazard of an Electrical Arc for Metal-Enclosed Switchgear (up to 15kV) Standard)

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86.	Questions from site clarification briefing	Health and Safety	Does Matimba use the “buddy system” where no person is allowed to be left alone in the plant at any time	Eskom’s response will follow in due course.
87.	Questions from site clarification briefing	Electrical	Do we need to allow for lightning protection and earthing? If yes is there a standard to work for, and has a study been carried out?	Yes. Earthing and Lightning Protection Standard (240-56356396)
88.	Questions from site clarification briefing	LPS	is there a specification for IAQ (Indoor air quality) in terms of maximum allowed particle sizes and amounts in the air, upper limits of concentration for CO, CO2. N, NO, SO, SO2. And any other VOC or hazardous chemicals, aerosols	No Eskom does not have specification for IAQ (Indoor air quality). Provide filtration as per the WI requirements.
89.	Questions from site clarification briefing	LPS	Do we stick to provided equipment water temperatures	Yes
90.	Questions from site clarification briefing	LPS	The scope is for section handovers, so for example we complete unit 1 chiller 1 and only start with chiller 2 once chiller 1 is completed. Would Eskom be willing to procure all the equipment that is identical and store them at the site or would procurement happen on as needed basis?	As when required for warrantee purposes.
91.	Questions from site clarification briefing	LPS	In the SSB plantroom what is the maximum clearance between the top of the existing plant and the bottom of the gantry crane?	To be confirmed during the next site clarification plant walkdown
92.	Questions from site clarification briefing	LPS	Could we get the weightlifting capacity of the goods lift and the auxiliary nit lifting beams	To be confirmed during the next site clarification plant walkdown

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93.	Questions from site clarification briefing	LPS	Could we get an indication of the provided water quality such as a TDS report?	To be requested from Chemical Services
94.	Questions from site clarification briefing	Planner	The program on item 11.2(9) states unit 1-6 access would be 3 months after access, but just below it mentions unit 1 access date is Dec 2025, unit 2 is April 2026. Are these dates the longed allowable time, can they be shortened if needed?	Eskom's response will follow in due course.
95.	DGN drawings	Configuration Management	Can we please get the DGN drawings in PDF format?	Eskom's response will follow in due course.
96.	SSB Water-Cooled Chilled Water System	LPS	According to tender specification, SSB chillers will be served with Dry cooler with the design temperature of 29°C entering and 35°C leaving from the chiller. The summer outdoor design condition is indicated as 36°C DB and 20°C WB so it would be impossible to use dry cooler to supply 29°C water to the chiller. Can we offer adiabatic coolers, or can we use higher condenser water temperature inline with the ambient condition?	Two Cooling Tower Suppliers were consulted during the development of the technical specication and they offered the following options meet the temperature requirements: 1. Eco Air Dry Coolers c/w Adiabatic operation. 2. Dry cooler(s) with adiabatic pre-cooling (Induced draft / Axial).Contractor's offer should be based on any of the above options.
97.	Page 28-29 SSB Water-Cooled Chilled Water System	LPS	For SSB chillers, will there be 1 dry cooler per chiller?	2-off Air Dry Coolers with Adiabatic operation. 1 on duty andother as standby.
98.	Page 28-29 SSB Water-Cooled Chilled Water System	LPS	On page No. 29, paragraph "a" under SSB, the chillers are indicated as 12-off 720 kW, our understanding is the intention is to indicate 2-off 720kW chillers, can you please clarify it?	2-off 720kW chillers. 1 on duty andother as standby.

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99.	Page 14 and 30 SSB HVAC System Fresh Air and Supply Air Distribution Network	LPS	Under the scope of work for SSB building page 14, the spec asks for DX AHUs with direct expansion air-cooled condenser are to be provided as backup, Is this equipment referring to the 44kW down blow units in paragraph “b” on page 30, 4-off 66 kW stand-by ducted AHU under paragraph “C” on page 31? Or should we allow additional DX coil in the SSB AHUs with remote condensers?	<p>Yes it is referring to:</p> <ol style="list-style-type: none"> 6-off additional 44 kW down-blow standby AHUs with direct expansion air cooled condensers. 4-off 66 kW standby ducted AHUs with direct expansion air cooled condensers. 2-off 15 kW comfort cooling (heat-pump) cassette units.
100.	Page 25 - 26	LPS	EFP transformer room equipment, table 5 states the extract and fresh air quantity of 8 m³/s with 1 duty + 1 standby fans, what will be the airflow over each FCU cooling coils? Will it be 2000 L/s or 4000 L/s per FCU and how many FCUs will be duty & stand-by type?	<p>All 4 units will be running to provide adequate air for transformer ventilation under normal conditions. However, 3 units are adequate to handle the heat load under normal conditions. Running all 4 units in this case is just a preferred operating control philosophy to handle transformer air requirements.</p> <p>Preliminary FCU sizing of 110 kW each, has an airflow of 3400-l/s</p>
101.	Fire Detection Interface	LPS	<p>Can we please get clarification on the fire protection scope which includes the following?</p> <ol style="list-style-type: none"> Smoke ventilation airflow. Will the smoke extract air flows be the same as the return air flow? If not, who will be responsible for the smoke control design? Smoke zone to start and stop smoke ventilation fans Firewalls position to price fire dampers Fire plan indicating fire partition Fire services layout i.e. sprinklers, fire protection equipment (fire hose reels, hydrants, and extinguishers), etc. Will existing fire ventilation grilles in the areas with ceilings be re-used or should we allow for new ones, will we need fire 	<p>Clarification is as follows:</p> <ol style="list-style-type: none"> Yes, Smoke extract air flows will be the same as the return air flow. This is based on the current smoke extraction design. Yes, Smoke zone to start and stop smoke ventilation fans. Firewalls position. Existing airflow schematics indicates position of fire dampers. Fire plan indicating fire partition Fire services layout i.e. sprinklers, fire protection equipment (fire hose reels, hydrants, and extinguishers), etc

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			ventilation air quantity to design these smoke grilles? vii. Signal to start fire ventilation system, switching off AHUs, and closing of fire dampers, who will provide fire signals to this equipment? viii. Will there be any scope for the smoke detection part of this tender? ix. Who will be responsible to re-program existing fire detection system if there are additional fire signals are added based on the additional HVAC equipment and dampers	6. Allow for replacement of fire ventilation grilles. Fire ventilation air quantity to be based on return air flow 7. Fire signals are existing at Unit 1 - 6 Auxliary Bays as well as the SSB. Table 6: Current HVAC and FDS Termination Drawings. Allow for new fire signals on all other outside plant areas to interface with existing fire panels. (drawings uploaded on Eskom tender bulletin under Clarification No 14) 8. There is no scope of smoke detection. 9. Reprogramming of existing fire signals is the responsibility of the employer.
102.	Page 16, Employer's Functional Specification Requirements	LPS	Can we please get existing plantroom positions and layout including piping routes, unit positions, unit dimensions, etc as indicated on page no. 17 of the tender document?	Existing drawings have been provided.
103.	Page 16, Employer's Functional Specification Requirements	LPS	Can we please get the details of existing HVAC electrical control panels etc as indicated on page no. 17 of the tender document?	Existing drawings have been provided.
104.	Page 16, Employer's Functional Specification Requirements	LPS	Can we please get potable water, drain point, and electrical point locations, etc. as indicated on page no. 17 of the tender document?	Existing drawings have been provided.

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105.	Page 19, Parts of the Works which the Contractor is to Design	LPS	Tender specification asks for 20% additional capacity on top of the existing AHUs. Should we allow for increasing the plenum sizes to allow for the bigger coils and filter banks? If not, will higher velocity over the coil be acceptable compared to 2.5m/s velocity limitation indicated in the tender?	20% future growth has been built into the heat loads as detailed by section 10 of the works information. Contractor's equipment selection is to be based on section 10.
106.		Electrical	Power supply to new equipment, will the Client provide power next to the new equipment or must we allow for extra cable from the existing position of the MCC to the new equipment?	"The electrical requirements are detailed under section 4.3.11 of C3.1 ECC3 Employer's Works Information. 1. New 380 V HVAC Electrical Distribution Panels, cabling inclusive of cable racks, earthing, circuit components etc. is to be provided by the contractor. 2. These new 380 V HVAC Electrical Distribution Panels will be powered from existing 380 V switchgear. 3. Power cabling includes incoming power cable from 380 V boards supplying the 380 V HVAC Electrical Distribution Panels; and further includes power cables from HVAC Electrical Distribution Panels feeding respective HVAC plant equipment in different areas. The incoming power Cable from the existing 380 V switchgear to the HVAC LV switchgear will be the responsibility of the Contractor."
107.		Electrical	Who will be responsible for electrical earthing, earth bonding, and lighting protection for the replacement and new equipment?	The Requirements, on the works information contractor is responsible. Stated under 4.3.11.1 Cabling.
108.		Electrical	Will the Client provide a power supply to the VAV (Variable air volume) diffusers with heater banks in the offices?	This is the contractor's responsibility.
109.		LPS	The tender spec asks for black steel for 2-hour fire-rated ducting. Will the certifications be required for this fire-rated ducting?	Yes certification will be required.

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110.		C&I	For the BMS control, is there an existing network on site which can be used to connect various plantrooms to one common BMS point to monitor and control?	Eskom's response will follow in due course.
111.	Page 32 & 33, Simulation building	LPS	Simulation building equipment is specified as both heat pump type and cooling on pages 32 & 33. Will these units be cooling only or heat pump type?	Heat pump type.
112.		LPS	Will there be Pr. Eng certificate required per service i.e. Civil, Electrical, C&I, Structure, and Mechanical?	Mechanical, Electrical, C&I and Civil and Structural Professional Engineering Certificates for each building or area as detailed by Appendix 9 (Vendor Document Submittal Schedule (VDSS) stipulates the documents required at tender stage).
113.		LPS	Will all fire-related sign-offs for the building be done by the client's Fire engineer, or should we appoint the Fire engineer for any sign-off?	Fire related sign-off will be done by employer.
114.		LPS	Will all AHUs be designed and sized according to table 10 to 18, or does the capacity as stated on page 23 of 150kW apply?	AHUs to be designed and sized according to table 10 to 18.
115.		Electrical	MCC panels, will they be fixed frame panels or withdrawable type?	Fixed type panels.
116.		FOREX	Will the Client take a forward cover to mitigate the foreign components' price fluctuation, or the Contractors must include it in their prices?	For the Eskom Payment Methods 1A,1B and 2 – Eskom will take out forward cover. For Payment Method 3, the tenderer has the option of taking out the forward and quoting Eskom a fixed ZAR price. If a tenderer selects this option, their bid must still reflect the foreign currency pricing and the local pricing. The exchange

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				rate to be used is as per the enquiry document requirements (exchange rate ruling on date of tender advertisement and the source must be the SA Reserve Bank website. Should the tenderer be successful, both parties will then engage in a simultaneous exercise to mutually agree on an exchange rate to be used to convert the foreign portion into ZAR.

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