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Date:	2023/02/10
Ref:	BESS_Eng-Exec_Memo_P1P4_MKHT-2
Subject:	Amendments to Melkhout BESS Project Scope

1. Introduction

This Memo serves to indicate the clarifications to the Scope of Work for the Melkhout BESS project as shared at the online Clarification meeting on 18 January 2023 and site clarification meeting on 24 January 2023.

2. Scope amendments

2.1 Amendments to the issued Draft version of BESS_Dx-SE-C20, Rev 3

The required amendments are indicated in Table 1 below which are reflected in BESS_Dx-SE-C20, Melkhout BESS Project Design, Supply and Install Scope of Work, Rev 4.

Table 1: Amendments to BESS_Dx-SE-C20, Rev 3

Section / Clause	Update
3.3 Site Specific Details	Updated item 6 of Table 1 as follows: Minimum usable AC energy capacity, for duration of life [MWh] = 140
3.4.3 Control Plant	Added item b) related to the physical security system. See section 2.2 Physical Security Systems of this Memo.
3.4.8 Remote Control and Monitoring Systems	The Table in this section has been updated by adding the remote locations for Eskom National Control (Simmerpan) and Standby National Control (STABNAC) as indicated in Table 2 of this document.
3.7 Training	Added the following requirement: "Training shall also be offered for all equipment which are not regarded as standard in Eskom."

Table 2: Remote control and monitoring locations

Plant	Remote Access Location
BESS	Eskom Control Room / Local Network Management Centre at Ducats (East London)
	Eskom National Control (Simmerpan)
	Standby National Control (STABNAC)
	Contractor Monitoring Room (5-year O&M contract) 1)
BESS & Substation Control Plant	Remote Engineering Access system (East London)
Site Physical Security System	Eskom Security Monitoring Centre (East London)
Notes:	
1) The contractor shall facilitate and provide telecommunications access for the remote monitoring of the Rietfontein BESS and PV site from their remote monitoring centre.	

2.2 Physical Security Systems

The following clarifications shall be complied with in addition to the requirements specified in BESS_Dx-SE-C23, R0, Detailed Physical Security Design for Melkhout Substation and BESS_Dx-SE-C52, R3, PHYSICAL SECURITY SYSTEMS SCOPE OF WORKS FOR THE WCOU AND ECOU BESS PROJECTS:

- a) Security perimeter lights shall be installed around the perimeter of the existing substation and BESS area.
- b) Implement an Access Control, Detection system, Alarm system and Public Address system.
- c) Implement a CCTV system in the existing substation and BESS area. The existing substation CCTV system and beams shall be replaced and integrated into the new physical security system.
- d) Repair HV yard lighting in the existing substation and configure the operation of the lights in line with 240-71062174, Generic Substation Design, requirements.
- e) Category 2 High Security mesh single tier fence shall be installed around the substation perimeter. This fence shall enclose the entire substation inclusive of the existing equipment room.
- f) The fence configuration shall be implemented as follows in relation to the respective markers as indicated in Figure 1 and Figure 2:
 - i) A-D-E-F will be the three tier fence for the BESS area.
 - ii) A-D-C-B-J-H-G will be the single tier fence for the substation (with extension B-J-H-G).
 - iii) The existing substation palisade fence shall remain around the HV yard and be upgraded to the High Security fence for sections D-A, A-G and G-H.

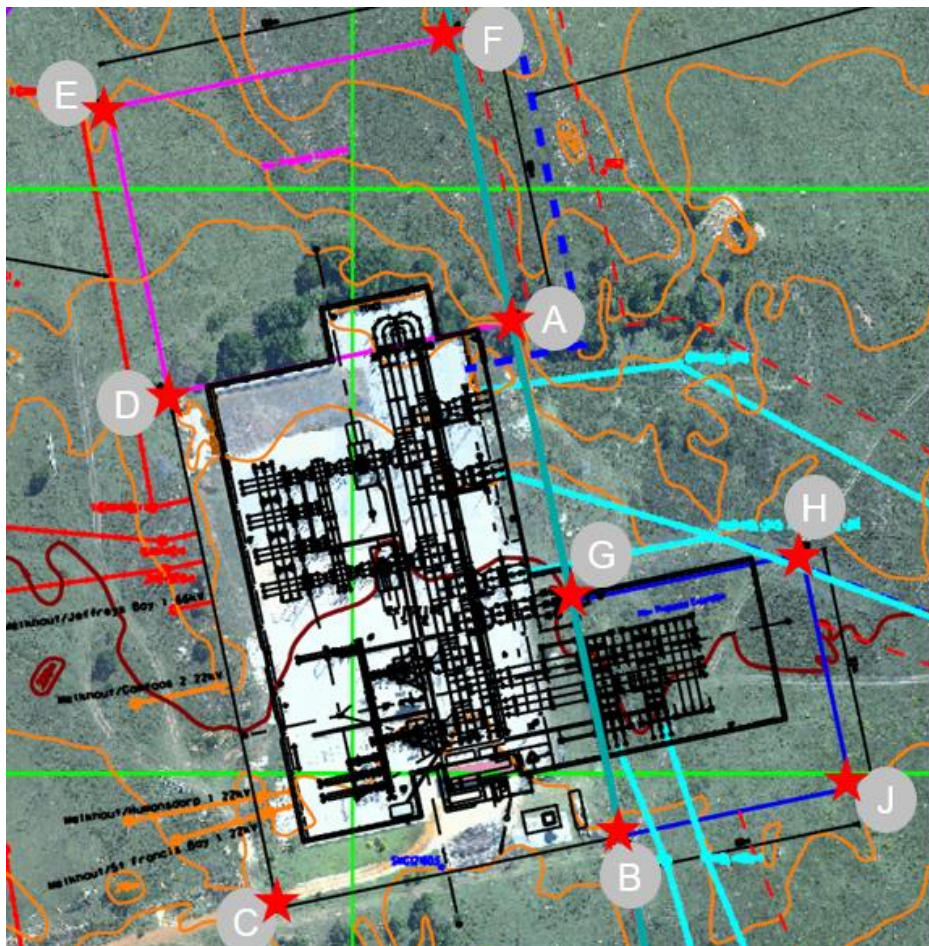


Figure 1: Environmental footprint coordinate markers

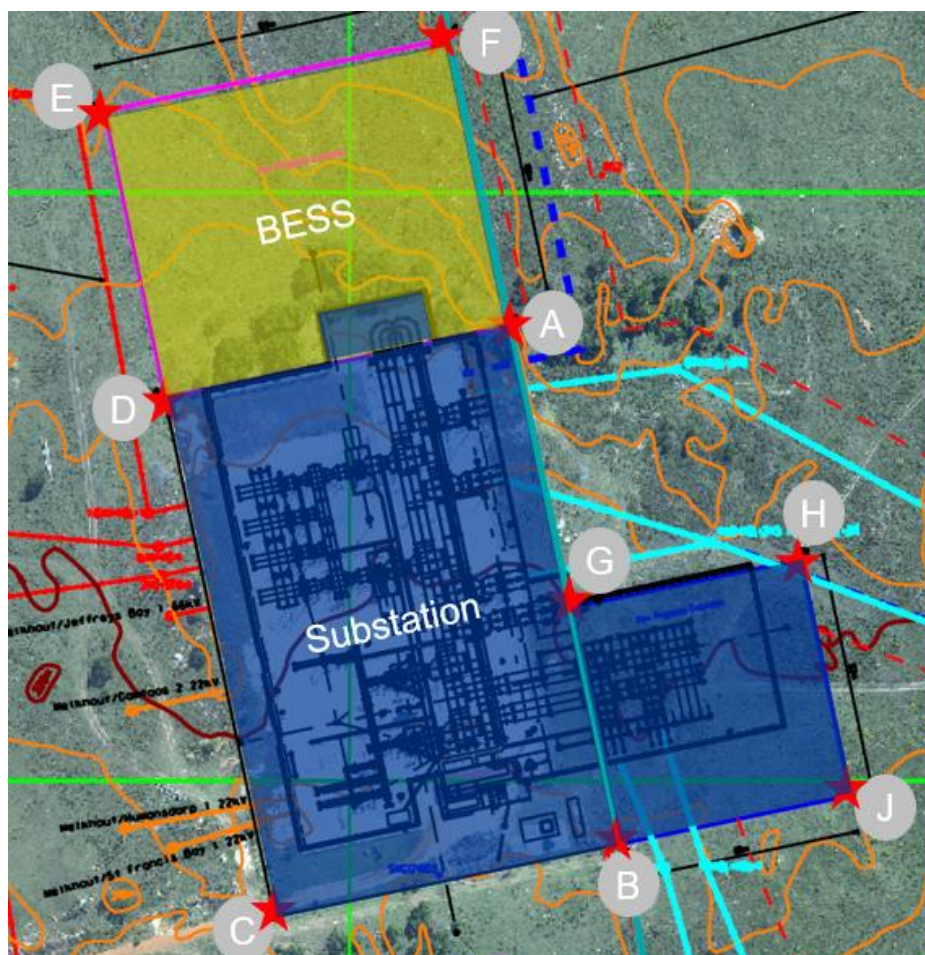


Figure 2: Melkhout BESS area and substation demarcation

2.3 Tender returnables and additional information

The following tender returnables and additional information are issued as part of this amendment:

#	File description and Filename	Returnable / For Information
1	Melkhout Folder Structure with Filename, "Folder Structure_Melkhout.zip" which shall be populated with the supporting documents for the BESS Technical Schedules A&B	Returnable
2	BESS Technical Schedules A&B with Filename, "240-139687256_1_Rev 7_Melkhout_EC.xlsx"	Returnable
3	AC Equipment Declaration of Compliance sign off sheet with Filename, "AC EQUIPMENT DECLARATION OF COMPLIANCE_MELKHOUT.docx"	Returnable
4	Guide to prepare Single Line Diagram (SLD) and General Arrangement (GA) with Filename, "BESS Concept General Substation Layout Evaluation Criteria_Rev.1.pdf"	For Information

2.4 Reference documents

Bidders shall take note of and ensure compliance to the following important substation and power plant reference documents as shared in the online clarification meeting:

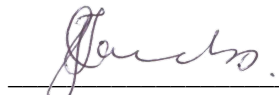
- a) General design and layout requirements:
 - i) 240-71062174, Generic Substation Design
 - ii) D-DT-52## series drawings, Civil and Steel including fencing drawings

- iii) D-DT-43## series drawings, Standard bay layouts
- iv) D-DT-44## series drawings, Standard bay layouts
- v) D-DT-46## series drawings, Equipment installation details
- vi) D-DT-47## series drawings, Equipment installation details
- b) Lightning protection requirements:
 - i) HV and MV yards: 240-109589380, Direct Lightning Stroke Protection of Substations
 - ii) Buildings, BESS and other areas: SANS 62305, Protection Against Lightning, Parts 1 - 4
- c) Substation fire protection requirements:
 - i) 240-66917056, Standard for Passive Fire Protection in Distribution Substation Yards
- d) Vehicle access requirements:
 - i) 240-170000918, Design for maintenance Vehicle Access in and Around Substations
- e) Fencing requirements:
 - i) D-DT-5237 shall be considered first.
 - ii) If the specific application requires something that is not covered in D-DT-5237 then the 0.54 Tx series options can be considered.
- f) Earthing requirements:
 - i) 240-134369472, Substation Earth Grid Design Standard
 - ii) 240-96393507, Soil Resistivity Testing for Substation Applications
 - iii) 240-101940513, Substation Earth Electrode Resistance Measurement
 - iv) 240-84854974, Continuity Measurement of Substation Earth Grid Systems
 - v) 240-170000153, Copper Conductors Used for Earthing in Substations
 - vi) 240-170000349, Copper Cladded Steel Conductors used for Earthing
 - vii) 240-170000535, Exothermic Weld Connections for Substation Earthing
 - viii) 240-108982466, Standard for HV Yard Stones in Eskom Substations
 - ix) D-DT-5240 all sheets, Dx earthing standard drawings
- g) Power plant drawing requirements:
 - i) 240-83563472, Drawing Standard for Substations: Power Plant
- h) Substation labelling requirements:
 - i) 240-120804300, Standard for the Labelling of Electrical Equipment within Eskom Wires Networks
- i) Non-major equipment:
 - i) 240-122922610, Specification for Substation Tubular Conductors
 - ii) 240-53113923, Specification for Substation Clamps for Tube Aluminium Conductors
 - iii) 240-53113927, Specification for Substation Clamps for Stranded Aluminium Conductors
 - iv) 240-113163905, LED Floodlights for Distribution Substation Applications
 - v) 240-105644353, Substation Insulation Covers to Prevent Wildlife Contact

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