

**ANNEXURE-10-ELECTRICAL, CONTROL AND INSTRUMENTATION SCOPE MATRIX FOR 2X800 MW DVC KODERMA AHP-EPC PACKAGE-I- Dry Bottom Ash System**

**Rev: 00**  
**Dated: 22-10-2025**

SL. NO.	SCOPE DETAILS	INPUT DETAILS	ENGINEERING / DESIGN	SUPPLY	RECEIPT, UNLOADING, STORAGE, ERECTION, TESTING, COMMISSIONING	REMARKS
1	<p>Complete Electrical and C&amp;I System for EPC PACKAGE-I- Dry Bottom Ash System</p> <p>Note:</p> <p>Following uncabled power supply feeders shall be provided by Main Ash Handling Package Vendor (Package-II) to DBA Vendor (Package-I). Further distribution shall be in DBA Vendor (Package-I) scope.</p> <p>a) 2 No of 415 V uncabled ACB Feeder for Unitised DBA application at below location for Unit#3: Location of 415 V Source: At AHP ER-2 building Maximum KVA Available :650KVA</p> <p>b) 2 No of 415 V uncabled ACB Feeder for Unitised DBA application at below location for Unit#4: Location of 415 V Source: At AHP ER-3 building Maximum KVA Available : 650KVA</p> <p>c) 2 Nos. of uncabled Feeder for below system: c.1) 220 V DC Source: At AHP ER-2 &amp; 3 MCC building c.2) 24V DC Source: At AHP ER-2 &amp; 3 MCC building c.3) UPS Source: At AHP ER-2 &amp; 3 MCC building</p>	DBA Vendor (Package-I)	DBA Vendor (Package-I)	DBA Vendor (Package-I)	DBA Vendor (Package-I)	<p>DBA Vendor (Package-I) shall submit total load (kVA) within 3 months from LOI for LT transformer sizing. LT Transformer is in the scope of Main Ash Handling Package Vendor (Package-II)</p> <p>Interface with upstream breaker at 415 V System is in DBA Vendor (Package-I) scope. DBA Vendor (Package-I) to coordinate with Main Ash Handling Package Vendor (Package-II) for relay coordination.</p> <p>Earthing between nearest riser/mat and DBA Vendor (Package-I) supplied equipment is in the scope of DBA Vendor (Package-I). Below ground earthing and Electronic earthing of DCS panels will be in the scope of Main Ash Handling Package Vendor (Package-II).</p> <p>Cable trays &amp; Supports inside the AHP ER-2 &amp; AHP ER-3 MCC building is in the scope of Main Ash Handling Package Vendor (Package-II). DBA Vendor (Package-I) to provide the cable tray requirement within the MCC building to Main Ash Handling Package Vendor (Package-II).</p> <p>Wherever integration of DBA Vendor (Package-I) supplied items with BHEL &amp; Main Ash Handling Package Vendor (Package-II) supplied system is involved, necessary integration shall be done by the DBA Vendor (Package-I).</p> <p>DBA Vendor (Package-I) to co-ordinate with Main Ash Handling Package Vendor (Package-II) for the Civil inputs required in MCC buildings for DBA system equipment's.</p> <p>Obtaining Statutory clearance for DBA Vendor (Package-I) scope of items is in DBA Vendor (Package-I) scope.</p> <p>Security of all equipment's erected by DBA Vendor (Package-I) till handing over to end customer is in scope of DBA Vendor (Package-I).</p> <p>Suppliers Finalization: DBA Vendor (Package-I) to follow Customer referred sub vendor list of Elec/ C&amp;I items which is part of NIT. In case of requirement of any new make, DBA Vendor (Package-I) shall submit Vendor list with credential. Approval of vendors is subject to Customer/BHEL approval.</p> <p>DBA Vendor (Package-I) is fully responsible in preparation and getting certification for the Erection, Testing &amp; Commissioning protocols from the end customer. The protocols shall be made for every equipment / system where E&amp;C is in DBA Vendor (Package-I) scope.</p>
2.1	AHP ER-2 & AHP ER-3 MCC buildings	DBA Vendor (Package-I)/ Main Ash Handling Package Vendor (Package-II)	Main Ash Handling Package Vendor (Package-II)	Main Ash Handling Package Vendor (Package-II)	Main Ash Handling Package Vendor (Package-II)	<p>DBA Vendor (Package-I) to refer Plot plan (refer Annexure - 1) for MCC building locations which are tentative and may vary during detailed engineering. DBA Vendor (Package-I) shall provide not to exceed list of equipment with dimensions , mentioning whether to be located in AC area or ventilated area etc <b>along with the offer and</b> within 3 months from LOI in the event of order. AC and Ventilation of AHP ER-2 &amp; AHP ER-3 building is excluded from DBA Vendor (Package-I) scope. However heat load for DBA Vendor (Package-I) supplied equipment's in AHP ER-2 and AHP ER-3 shall be shared to Main Ash Handling Package Vendor (Package-II).</p> <p>DBA Vendor (Package-I) to note that only space provision for DBA Vendor (Package-I) equipment's shall be provided in MCC building. Base frame , channels, angles, conduits/pipes ,inserts, any supporting arrangement required for DBA Vendor (Package-I) equipment in the MCC building is in the scope of DBA Vendor (Package-I).</p>
2.2	Any local rooms for E&I application (if required) other than MCC building in the DBA Vendor (Package-I) structures	DBA Vendor (Package-I)	DBA Vendor (Package-I)	DBA Vendor (Package-I)	DBA Vendor (Package-I)	AC/Ventilation as applicable for Local rooms shall be in DBA Vendor (Package-I)'s scope
3	Cable trestle/Rack from AHP ER-2 & AHP ER-3 building up to the area as indicated in Annexure 10A.	DBA Vendor (Package-I)/ Main Ash Handling Package Vendor (Package-II)	Main Ash Handling Package Vendor (Package-II)	Main Ash Handling Package Vendor (Package-II)	Main Ash Handling Package Vendor (Package-II)	DBA Vendor (Package-I) shall provide the tray requirement with loading for design of cable trestle/rack. Supply and E&C of cable trays & support in these cable trestle/rack is in the scope of Main Ash Handling Package Vendor (Package-II). Further cable tray , tray routing along with supporting arrangement for DBA system equipments is in the scope of DBA Vendor (Package-I). However cable tray,tray routing along with supporting arrangements for Main Ash Handling Package Vendor (Package-II) equipments in Bottom ash intermediate Silo is in the scope DBA Vendor (Package-I).
4	Video Camera, CCTV system	DBA Vendor (Package-I)	DBA Vendor (Package-I)	DBA Vendor (Package-I)	DBA Vendor (Package-I)	Integration with main package is in the scope of DBA Vendor (Package-I).
5	Main control system (DCS)	DBA Vendor (Package-I)	BHEL EDN	BHEL EDN	DBA Vendor (Package-I)	<p>DBA Vendor (Package-I)'s scope includes the following:</p> <ol style="list-style-type: none"> <li>1. Local loading/unloading /transportation of these materials from BHEL storage to DBA Vendor (Package-I) storage/facilities.</li> <li>2. Detailed IO list , KKS tagging, P&amp;ID Diagram, set-points, Control Philosophy &amp; write up, block logic diagram &amp; HMI screens (for software development), Functional grouping.</li> <li>3. Detailed IO list shall be submitted within 6 months of LOI in the format prescribed by BHEL which shall be shared to successful bidder . Any addition of IO's at later stage is not acceptable.</li> <li>4. DBA Vendor (Package-I) shall visit BHEL/Customer during software development, application testing , FAT and ensure the completeness of software for E&amp;C.</li> <li>5. Any logic modification during commissioning stage &amp; till handing over shall be executed by DBA Vendor (Package-I).</li> <li>6. DBA Vendor (Package-I) to coordinate with BHEL-EDN before finalisation of field bus based instruments/actuator regarding communication protocol.</li> <li>7. Interpanel wiring between various DCS panels for DBA system</li> </ol> <p>Note: Networking cables for DCS panels is in the scope of Main Ash Handling Package Vendor (Package-II).</p>
6	Illumination, Welding Receptacles, 240V Switch Socket	DBA Vendor (Package-I)	Main Ash Handling Package Vendor (Package-II)	Main Ash Handling Package Vendor (Package-II)	Main Ash Handling Package Vendor (Package-II)	DBA Vendor (Package-I) to provide GA drawings (AutoCAD) for preparation of illumination layouts. Interface checking with DBA Vendor (Package-I) equipment is in the scope of DBA Vendor (Package-I).
7	Cable Tray, Supports and accessories	DBA Vendor (Package-I)	DBA Vendor (Package-I)/Main Ash Handling Package Vendor (Package-II)	DBA Vendor (Package-I)/Main Ash Handling Package Vendor (Package-II)	DBA Vendor (Package-I)/Main Ash Handling Package Vendor (Package-II)	<p>Cable tray and support for the following location is included in the scope of Ash Handling Package Vendor (Package-II) :</p> <p>AHP ER-2 MCC Building, AHP ER-3 MCC Building, Cable Trestle as marked in Annexure 10A</p> <p>DBA Vendor (Package-I) shall provide tray and support for balance location including boiler main structures as required for DBA Vendor (Package-I) equipments</p>
<b>Name of BHEL UNIT for coordination with successful bidder of various system during Engineering</b>						
SI No	System					BHEL-Unit
1	Plot Plan with Switchgear location, cable routing, earthing, illumination					BHEL-ISG/Main Ash Handling Package Vendor (Package-II)
2	Design and integration of 415 V system along with upstream breaker interface					Main Ash Handling Package Vendor (Package-II)
3	DCS, VMS, UPS, 24V DC System					BHEL EDN/Main Ash Handling Package Vendor (Package-II)
4	Fire Fighting and FDA system					Main Ash Handling Package Vendor (Package-II)