

	ANNEXURE- ILLUMINATION
Title:	SCOPE NOTE - STANDARD SCOPE NOTES FOR E.T.C. WORKS FOR ILLUMINATION SYSTEM
Sr No.	PARTICULARS
1	The scope of services shall include receipt of material, unloading, storage, safety & security, handling, erection of equipment/ material at site including fabrication, minor civil works, testing & commissioning of the entire system and material reconciliation and handing over commissioned system to BHEL. Storage area for Illumination material shall be provided by BHEL.
2	Design of illumination system & supply of majority portion of lighting system is not in bidder's scope . Bidder to refer ETC_BOQ, Supply_BOQ and general terms for scope.
3	Erection material will be supplied by BHEL/vendor. However, any other material/ services other than listed in ETC boq to complete the work shall be in contractor's scope. All material and consumables required for erection work shall be in Contractor's scope. Connections between Junction Boxes and Luminaries in outdoor area, all cable glands, lugs and ferrules require for cabling/ wiring. Any other material required for erection shall deemed to be in Contractor's scope. Holes shall not be drilled on the galvanized substation gantry & LM structures.
4	For exclusive requirement for expertise, supervision of ETC works for illumination system shall be provided by illumination designer cum supply contractor for limited days. However bidder to depute full time experienced supervisor for illumination system .
5	Laying and termination of power and control cable from LPs to JB and JB to fitting for equipment under scope of this specifications.
6	Bidder shall lay conduits in in Control Room Building, Switchyard Panel Room, Fire Fighting Room for firefighting detection cables & Air conditioning system. Further, it shall be bidders' responsibility to supply and provide wiring & single supply points for each AC units. Typical power supply distribution has been shown in drawing no. C/ENG-GEN-LS (Conceptual Single Line Diagram of Power grid). Tentative no. of 2 (/3) TR AC units: Control room, Battery room & Switchyard Panel Room are given in BOQ. There shall be single supply point required for each 2 (/3) TR split AC inside control building.
7	Bidder shall lay conduits in control room building for telephone cables & telephone sets under PLCC package. Further, it shall be bidders' responsibility to provide wiring for 2 wire Telephone Set with 2 pair Telephone cables (Tinned Copper) complete upto EPBX. Supply of telephone set and 2 pair cables are under BHEL scope. Supply of telephone set and 2 pair cables are under BHEL scope.
8	Installation of all Accessories for for successful installation of Illumination System are deemed included in the scope such as and not limited to 3 / 4 way JB, 90 degree GI normal / inspection bend, Solid bend, Spacer, Circular boxes (with gasket as applicable), closer, socket, saddle, saddle base, Fan box, mounting hardwares, nut, lock nut, bolt, washer, screw, reducer, U clamp, earth clip/clamp, anchor fastener, welding electrodes, paint etc complete material required for complete installation of Illumination system. Bidder to submit detailed BOM with weight conversion during detailed engineering. Supply and installation of other erection material as per technical specification are deemed inclusive of the scope such as and not limited to Nylon grips, wooden screw, machine screw, pvc bush, pvc sleeve, anchor fastner, ferrules etc

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9	Exposed conduit/pipe shall be adequately supported by racks, clamps, straps or by other approved means. Conduits /pipe support shall be installed square and true to line and grade with an average spacing between the supports as given below, unless specified otherwise Conduit /pipe size (dia) v/s Spacing Up to 40 mm - 1 M 50 mm - 2.0 M 65-85 mm - 2.5 M 100 mm - 3.0 M
10	All conduits/pipes shall have their ends closed by caps until cables are pulled. After cables are pulled, the ends of conduits/pipes shall be sealed with Glass wool/Cement Mortar/Putty to prevent entrance of moisture and foreign material.
	EARTHING
11	The continuous conductor of specified GI wire shall be run all along each conduit run. The conductor shall be connected to each panel ground bus. All junction boxes, receptacles, switches, lighting fixtures etc. shall be connected to specified GI wire.
	CIVIL WORKS
12	The bidder shall quote for ETC of items/ equipment/ system, including activities pertaining to minor civil works of lighting panels, cable termination & earthing against each item, as applicable.
13	Civil/ structure works such outdoor lighting panels, lighting poles, receptacles etc. shall be done by the bidder. The rates for these civil works shall be deemed to be included in the offer. Wherever cable is to be laid in buried trench, the excavation, backfilling, compaction to original state are deemed included in the offer.
14	Wherever cable is laid in buried trench, the excavation and filling shall be done by bidder free of cost.
	HANDING & TAKING OVER
15	It is the responsibility of the Bidder to run and maintain the system installed by them for a period of 3 months and subsequently hand over the same to BHEL/UPPTCL. Bidder shall assist BHEL to hand over the system commissioned by them to owner.
16	After commissioning of system, Bidder to also submit field modifications (if any) to BHEL for preparation of AS-BUILT drawings