

Annexure II

FOAC BOQ for 220 kV 1Cx1200 sq. mm, 2x(3+0) Copper conductor XLPE U/G cable for LILO from prop. 220 kV M/C cable termination tower to 220 kV Kanbha GIS from existing 220kV S/C Ranasan Karamsad line

	LILO of 220kV Ranasan-Karamsad to 220kV Kanbha GIS	220 kV 1Cx1200 sq. mm, 2x(3+0) Copper conductor XLPE U/G cable with FOAC having route length 0.300 KM		
Estimated Cost of laying of <u>two equal lengths</u> of FOAC (Fiber Optic Approach Cable) (DWSM - Dual window single mode, 48F) - with installation hardware like ties / clips / cleats, conduits, HDPE ducts, supports, fittings, accessories etc with required arrangement to lay along side of U/G cable - (Annexure-B1 (Supply) & B2 (Erection))				
Estimated Cost (Supply Part) (Annexure-B1)				
Sr.No.	Name of Line	FOAC Single Length (DWSM 48F) (meter) (A)	Nos. of such single length of FOAC required (B)	(Total length of FOAC (DWSM 48F) =[(A) * (B)) + Length of approach cable from Gantry upto Communication room (400 Mtr)] meter (C)
1	LILO of 220kV Ranasan-Karamsad to 220kV Kanbha GIS	480	2	1360

Estimated Cost (Erection Part) (Annexure-B2)				
Sr.No.	Name of Line	FOAC Single Length (DWSM 48F) (meter) (A)	Nos. of such single length of FOAC required (B)	(Total length of FOAC (DWSM 48F) =(((A) * (B)) + Length of approach cable from Gantry upto Communication room (400 Mtr)] meter (C)
1	LILO of 220kV Ranasan-Karamsad to 220kV Kanbha GIS	480	2	1360

Note A:

- (1) Existing OPGW at Loc no 195 shall be open & OPGW shall be back pull upto Existing Loc no 191 and restringing shall be done between existing loc no 191 to proposed Loc no DD type & Proposed MD type tower and spliced with FOAC cable from Kanbha SS.
- (2) New OPGW with approx length 1100 mtr stringing work to be done between Proposed MD type tower & Loc no 195.
- (3) Around 800 mtr of OPGW will be available spare after back pulling & same shall be tested for OTDR & credited to Nadiad Store in co-ordination with EE(Telecom) Ranasan
- (4) After completion of this arrangement work of FOAC & OPGW, for above LILO work of 220kV Ranasan-Karamsad Lilo Kanbha Line , it shall be tested for End to End test & trace report shall be submitted for approval.

Note: B

Following points are important from work execution perspective, same may please be noted.

- i) Fiber optic approach cable (FOAC) shall be laid with 220kV cable system strictly as per approved method of construction i.e MOC. Each run of FOAC shall be of continuous length, no in between splicing is allowed.
- ii) Two to Three rings of extra loop length shall be kept buried underground at foot of both end termination tower after laying FOAC cable with 220kV cable as per MOC.
- iii) FOAC cable length remain outside and above the ground level shall be 2 times the height of each termination tower at both end. Each run of FOAC cable coming out after laying in underground section should be brought up to third cross arm of termination tower after passing it through HDPE pipes and properly tying up with tower. Also, each run of FOAC cable shall be terminated in individual joint box on each termination tower.
- iv) Balance length of each FOAC cable (i.e. Approximately half of tower height) after bringing out the FOAC cable above from ground level and up to third cross arm of termination tower, it shall be managed in rings properly with fixing clamp arrangement to hold up it on end termination tower.
- v) As per standard format "End to End test.pdf" in , after laying FOAC cable, each length shall be tested for end to end test using power meter and OTDR. Original copy of Test report duly sealed and signed with date, name & designation of testing person, executing contractor and witnessing officer one each from telecom as well as TR/Const. nominated from respective EE(Telecom) and EE(TR)/EE(const.) respectively, shall be submitted to under signed & one copy to respective telecom unit, invariably without fail
- vi) Only after getting clearance on validity of test report submitted to this office, filed officer will take further necessary action on commercial part.
- vii) DRS (Data requirement sheet) and drawing approval shall be taken for FOAC & joint box before kick starting any erection activity. The work executing contractor must have to do correspondence on email to concern EE (Const.) with copy to project & engineering department, corporate office, GETCO for necessary concurrence and intimation about to start erection/laying.

Annexure III

OPGW BOQ for 220 kV 1Cx1200 sq. mm, 2x(3+0) Copper conductor XLPE U/G cable for LILO from prop. 220 kV M/C cable termination tower to 220 kV Kanbha GIS from existing 220kV S/C Ranasan Karamsad line

(1) Supply, Laying, erection, testing and commissioning of 24 Fiber (DWSM) OPGW Cable (Live Line) including Installation hardware set and all cable fittings & accessories alongwith approach cable Joint box. [Installation Hardware set & accessories for above OPGW i.e. all cable fittings & accessories like suspension clamps, tension clamps, vibration dampers, earthing clamps, down lead clamps, in-line splice enclosures etc. including Pigtailes FC-PC type (with installation hardware like ties, clips, cleats, conduits, ducts, supports, fittings, accessories etc).

(1a) Supply Part

Sr.No.	Description	Qty.(KM)
1a.1	24 Fibre (DWSM) OPGW fibre Optic cable	1.1
1a.2	Installation Hardware set * & accessories for above OPGW i.e. all cable fittings & accessories like suspension clamps, tension clamps, vibration dampers, earthing clamps, down lead clamps, in-line splice enclosures etc. including Pigtailes FC-PC type and (with installation hardware like ties/clips / cleats, conduits, ducts, supports, fittings, accessories etc). (Any variation in quantities shall be absorbed by contractor)	1.1

(1b) Erection Part

Sr.No.	Description	Qty.(KM)
1b.1	Complete Installation of OPGW cable (24 Fibers) including laying , providing required hardwares, in line splices to be encased in Fibre Optic Splice Enclosures, Laying & termination of a fibre optic approach cable required to connect Overhead Fiber Optic Cable (OPGW) between the final in line splice enclosure on the gantry/tower and the Fibre Optic Distribution Panel (FODP) to be installed within the building at both the sub-station ends as per technical specification.	1.1
1b.2	Link up of OPGW Cable including all related activities.	1.1

NOTE:

(1) After completion of this arrangement work of OPGW, for 220kV Ranasan-Karamsad Lilo Kanbha Line, it shall be tested for End to End test & test report duly sealed & signed with name and dated signature of testing personal, Witnessing Officer of GETCO, executing contractor to whom GETCO has placed order as well as concern EE (Const.) alongwith .SOR files shall be submitted for approval. However, other testing requirement during work execution shall also be carried out at each stage of work as per standard formats of "Letter- CE (Proj)- Guidelines - OPGW Execution.pdf " (letter CE(P)/EE(TR-II)/T-1/4281, Dtd: 25.11.2014)

(2) Also, regarding guideline for executing work of OPGW laying on various 400kV, 220kV and 132kV transmission line, a further addendum to letter "CE (Proj)- Guidelines - OPGW Execution.pdf" has been issued vide letter CE (Project)/EE (Telecom)/OPGW/1294, Dtd: 13.08.2020.

3) A joint verification with field officer for work executed/done shall be invariably completed as per standard revised format-A.