Sl. No.	Clause No.	Existing Clause	New/Revised Clause
1.	Annexure C SPECIFIC TECHNICAL REQUIREMENTS FOR COMMUNICATION C.1.0	TSP shall supply, install and commission minimum 1 No. FODP (120 F or higher) along with panel and Approach Cables (24F) with all associated hardware fittings from gantry towers to Control Room for all the incoming lines envisaged under the present scope.	TSP shall supply, install and commission minimum 1 No. FODP (240 F or higher) along with panel and Approach Cables (48F) with all associated hardware fittings from gantry tower to Bay Kiosk and from the Bay Kiosk to Control room for all the incoming lines envisaged under the present scope.
2.	Annexure C SPECIFIC TECHNICAL REQUIREMENTS FOR COMMUNICATION C.2.0	On LILO of both circuits of Balipara (POWERGRID) – Bongaigaon (POWERGRID) 400 kV D/C line at Bornagar(ISTS), TSP shall supply, install and commission OPGW and earthwire as per Tower Configurations: i. For Multi Circuit Tower Configuration: Two (2) No. OPGW cable containing 24 Fibres (24F) each on both the Earthwire peaks. ii. For Double Circuit Tower configuration (for both Loop In and Loop Out portion): One (1) No. OPGW cable containing 24 Fibres (24F) to be installed by TSP on one earthwire peak and conventional earthwire on other earthwire peak for both Loop In and Loop Out Lines.	(POWERGRID) – Bongaigaon (POWERGRID) 400 kV D/C line at Bornagar(ISTS), TSP shall supply, install and commission OPGW and earthwire as per Tower Configurations: i. For Multi Circuit Tower Configuration: Two (2) No. OPGW cable containing 48 Fibres (48F) each on both the Earthwire peaks.

3.	Annexure C	Maintenance of OPGW Cable,	Maintenance of OPGW Cable, repeater
	SPECIFIC TECHNICAL	repeater if any and OPGW Hardware shall be the	if any and OPGW Hardware shall be the
	REQUIREMENTS FOR	responsibility of TSP. Additional requirements to	responsibility of TSP. OPGW requirement on
	COMMUNICATION	be factored in C.3.0	extended line shall be of same OPGW fiber
	C.3.0		capacity of existing line
4.	Appendix F.1:	If the repeater location is finalized in the	If the repeater location is finalized in the
		Control Room of a nearby substation,	Control Room of a nearby substation, TSP
	SPECIFIC TECHNICAL	TSP shall provide 1 no. OPGW (48F) on a	shall provide OPGW to accommodate all
	REQUIREMENTS FOR	single Earthwire peak with OPGW	the fibers in main transmission line on a
	COMMUNICATION	Hardware & mid-way Joint Boxes etc. of	single Earthwire peak with OPGW
	Repeater Requirements	the line crossing the main line and 1 no.	Hardware & mid-way Joint Boxes etc. of
		Approach Cable (48F) with all associated	the line crossing the main line and and
		hardware fittings, to establish	required approach Cable to
		connectivity between crossing point of	accommodate all the OPGW fibers with
		main transmission line up to the repeater	all associated hardware fittings, to
		equipment in substation control room.	establish connectivity between crossing
		- -	point of main transmission line up to the
		TSP shall co-ordinate for Space & DC	repeater equipment in substation control
		power supply sharing for repeater	room.
		equipment.	
		TSP shall provide FODP, FOTE (with	TSP shall co-ordinate for Space & DC
		STM-16 capacity) with suitable interfaces	power supply sharing for repeater
		require for link budget of respective link.	equipment.
			TSP shall provide FODP, FOTE (with
		OR	STM-16 capacity) with suitable interfaces
			require for link budget of respective link.

If the repeater location is finalized in the nearby substation premises, the TSP shall identify the Space for repeater shelter in consultation with station owner. Further TSP shall provide 1 no. OPGW (48F) on a single Earthwire peak with OPGW Hardware & mid-way Joint Boxes etc. of the line crossing the main line and 1 no. Approach Cable (48F) / UGFO (48F) with all associated hardware fittings, to establish connectivity between crossing point of main transmission line up to the substation where the repeater shelter is to be housed.

TSP shall provide repeater shelter along with FODP, FOTE (with STM-16 capacity) with suitable interfaces require for link budget of respective link, reliable power supply provisioning for AC and DC supply, battery bank, Air Conditioner and other associated systems.

OR

OR

If the repeater location is finalized in the nearby substation premises, the TSP shall identify the Space for repeater shelter in consultation with station owner. Further **TSP OPGW** shall provide accommodate all the fibers in main transmission line on a single Earthwire peak with OPGW Hardware & mid-way Joint Boxes etc. of the line crossing the main line and required approach Cable/UGFO to accommodate all the OPGW fibers with all associated hardware fittings, to establish connectivity between crossing point of main transmission line up to the substation where the repeater shelter is to be housed.

TSP shall provide repeater shelter along with FODP, FOTE (with STM-16 capacity) with suitable interfaces require for link budget of respective link, reliable power supply provisioning for AC and DC supply, battery bank, Air Conditioner and other associated systems.

If the repeater location is finalized on land near the transmission tower. TSP shall make the provisions for Land at nearby tower for repeater shelter. Further TSP shall provide 1 no. Approach Cable (48F) / UGFO (48F) with all associated hardware fittings to establish connectivity up to the location of repeater shelter.

TSP shall provide repeater shelter along with FODP, FOTE (with STM-16 capacity) with suitable interfaces require for link budget of respective link, reliable power supply provisioning for AC and DC supply, battery bank, Air Conditioner and other associated systems

Maintenance of OPGW Cable and OPGW Hardware, repeater equipment & items associated with repeater shelter shall be responsibility of TSP.

OR

• If the repeater location is finalized on land near the transmission tower. TSP shall make the provisions for Land at nearby tower for repeater shelter. Further TSP shall provide required approach Cable to accommodate all the OPGW fibers with all associated hardware fittings to establish connectivity up to the location of repeater shelter.

TSP shall provide repeater shelter along with FODP, FOTE (with STM-16 capacity) with suitable interfaces require for link budget of respective link, reliable power supply provisioning for AC and DC supply, battery bank, Air Conditioner and other associated systems

Maintenance of OPGW Cable and OPGW Hardware, repeater equipment & items associated with repeater shelter shall be responsibility of TSP.

5. 3.3 How is the OPGW laying done in case of 3.3 How is the OPGW laying done in case of Frequently Asked Queries: 3.0 Communication LILO lines? LILO lines? Reply: In case LILO lines are on same towers (e.g. both Line in and Line Out portion are on same towers, generally done LILO of S/C lines). Then 2x24F OPGW shall be required to install by TSP on both earthwire peak on 400 kV & 765 kV lines where two E/W peaks are available. On 220 & 132 kV lines where only one E/W peak is available TSP to install one no. 48F OPGW. Incase LILO lines are on different towers (e.g. both Line In and Line Out portion are on different towers, generally done LILO of D/C lines). Then 1x24F OPGW shall be required to install by TSP on one earthwire peak and conventional earthwire on second earthwire peak, on both Line In and Line Out portion towers of 400 kV & 765 kV lines. On 220 &132 kV lines where only one E/W peak is available TSP to install one no. 24F OPGW in place of conventional earthwire. earthwire.

Reply: In case LILO lines are on same towers (e.g. both Line in and Line Out portion are on same towers, generally done LILO of S/C lines). Then 2x24F **2x48F** OPGW shall be required to install by TSP on both earthwire peak on 400 kV & 765 kV lines where two E/W peaks are available. On 220 & 132 kV lines where only one E/W peak is available TSP to install one no. 48F 96F OPGW.

Incase LILO lines are on different towers (e.g. both Line In and Line Out portion are on different towers, generally done LILO of D/C lines). Then 1x 24F 1x48F OPGW shall be required to install by TSP on one earthwire peak and conventional earthwire on second earthwire peak, on both Line In and Line Out portion towers of 400 kV & 765 kV lines. On 220 & 132 kV lines where only one E/W peak is available TSP to install one no. 24F 48F OPGW in place of conventional

3.4 How is the OPGW laying done in case | **3.4** How is the OPGW laying done in case Multi

		Multi circuit Towers?	circuit Towers?
		Reply: In case two different lines are	Reply: In case two different lines are
		using common multi circuit portion for	using common multi circuit portion for
		some distance (originating from	some distance (originating from different
		different stations, may be terminating	stations, may be terminating on same or
		on same or on different stations). Two	on different stations). Two no. 24F 48F
		no. 24F OPGW to be installed on both	OPGW to be installed on both E/W peaks
		E/W peaks for common M/C portion of	for common M/C portion of 765 kV & 400
		765 kV & 400 kV lines.	kV lines.
		Incase 220/132 kV lines using multi	Incase 220/132 kV lines using multi circuit
		circuit portion where single E/W peak is	portion where single E/W peak is
		available one no 48F may be installed for	available one no 48F 96F may be installed
		common multi circuit portion.	for common multi circuit portion.
6.	A.23.0	The tower shall be designed considering the	Deleted
		porcelain Insulators with creepage factor of 31	
		mm/ kV irrespective of type of insulator used.	