

ANNEXURE V - BRIEF SCOPE OF WORK FOR LT DATA-CONCENTRATOR COMMISSIONING
RELAY & ETHERNET SWITCHES ARE ON IEC-61850 COMPLIANT
PACKAGE:- LT SWITCHGEAR - DATA CONCENTRATOR COMMISSIONING WORK
ENQUIRY NO. : PE/PG/IOC/E-5851/2017 DT: 12.02.2018
PROJECT:-IOCL PARADIP REFINERY CPP

S.No	Description	Remarks
1	Preliminary visit to Paradip site for discussing the quantum of work involved & modalities for carrying out data concentrator commissioning with BHEL site as well as customer. Further, other technical issues and additional material requirement (if any) shall also be finalised during the visit.	
2	Hardwiring from relay to ethernet switches through CAT5e/CAT6e cable.	
3	Ethernet cable laying from relay to Ethernet switches and termination through RJ45 connector	Ethernet Switches are GE make (ML3000/MKL2400/ML1200) on IEC-61850 protocol
4	FO cable laying and termination from switch board to another switchboard to make ring for communication of all Ethernet switches with D-400.	
5	Configuration of Relays	Total 230 relays on IEC-61850 protocol [170 Nos.-GE make F650 and 60 Nos.-ABB make Relay]
6	Configuration of Logic files for Incomers, outgoing feeders, B/c etc. and relay setting(if Required in relay)	12 Types of Logic are applicable for whole plant. Relay setting and Logic will be provided by BHEL
7	Placement of LIU and termination of OFC Cable through splicing and connect the LIU with Ethernet switch to form communication ring.	
8	Configuration and powering up of Ethernet switches.	110V DC Supply in each switchboard is available. BOQ of Cables (if any) for powering up the ethernet switches to be intimated by vendor as shortage items as per sl. no. 1 above.
9	Interconnection of each LIU with associated ethernet switch as per architecture through SC-ST or ST-ST patchcords.	Architecture drg. is attached for reference.
10	D-400 commissioning and preparation of excel sheet having all I/O as per customer requirement and assigned during relay configuration and then accordingly prepare SCADA/HMI screen.	Typical breaker Scheme wise I/O List is attached.
11	To configure the Gateway/Data-concentrator to send the data to SCADA in IEC60870-5-101/103 or IEC60870-5-104 protocol	
12	To Establish communication between relay, Ethernet switches and SCADA and to fetch the data at CCR HMI from Data-Concentrator	
13	To configure events and alarms as per the requirement.	
14	Mounting of loose ethernet switches in LT panels (if required).	
15	Any Miscellaneous work not identified above.	To be identified during preliminary visit.

Note

- Out of 230 relays, 218 relays are located in Main CCR Bldg (80x40m Area) and rest 12 relays are located at average distance of 400m from Main CCR Bldg.
- Total approx. 35 Ethernet Switches are distributed in LT boards.
- During site visit by vendor, complete survey of FO and Cat-5e/6e cable route, Preparation of BOQ for Shortage items to be critically done as these will affect DC commissioning.
- Any tools & tackles and secondary injection kit(if required) for Relay, Ethernet Switches and Data-concentrator commissioning to be arranged by vendor.