

TD-201 Rev No. 00	Form No.	 	PRODUCT STANDARD PROJECT ENGINEERING & SYSTEMS DIVISION, HYDERABAD	ANNEXURE-03 to PY55295
				Rev No. 00
				Page 1 of 5
COPYRIGHT AND CONFIDENTIAL <i>The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED, It must not be used directly or indirectly in any way detrimental to the interest of the company.</i> ANNEXURE-3 TO PY55295 SINGLE LINE DIAGRAM FOR 11kV HT SWITCHGEAR PROJECT 75MW VISAKH REFINERY MODERNIZATION PROJECT (VRMP) CUSTOMER M/S HINDUSTAN PETROLEUM CORPORATION LIMITED,VIZAG,A.P CONSULTANT ENGINEERS INDIA LIMITED				

GENERAL DIMENSIONAL LIMITS, FITS & TOLERANCES AS PER HY0230261



02. ALL BREAKERS ARE FULLY DRAWOUT TYPE.

03. CABLE ENTRY FROM BOTTOM.

04. PANEL SHADE OF THE PANEL -RAL7032

05. CONTROL SUPPLY SHALL BE 110V DC.

06. NUMERICAL RELAYS SHALL BE HOOKED UP TO DATA CONCENTRATOR AND MMI SYSTEM. SYSTEM ARCHITECTURE SHALL BE IEC-61850HSR.

07. STRING CHARGING MOTOR SHALL BE SUITABLE FOR 110V AC.

08. REAR AND FRONT SIDE OF THE PANEL SHALL HAVE FEEDER DESCRIPTION AND PANEL NO. ON METALLIC NAMEPLATE.

09. LINE PT SHALL BE SUPPLIED IN SEPARATE DRAWOUT MODULE.

10. HARDWARE INCLUDING INDICATING LAMPS(LED TYPE) SHALL BE PROVIDED AS PER CONTRACT SPECIFICATION/EIL DATA SHEETS.

11. REMOTE METERING AT STATION HMI IS PROVIDED THROUGH SOFT LINK FROM DATA CONCENTRATOR.

12. PROTECTION FEEDERS ARE NUMERICAL TYPE.

13. STABILIZING RESISTOR, METROBILS AS REQUIRED SHALL BE PROVIDED FOR PROTECTION RELAYS.

14. POWER CABLE SIZE SHALL BE AS PER HT POWER CABLE SIZING CALCULATIONS, WHICH WILL BE SUBMITTED SEPARATELY.

15. SUPPLY OF CABLES & TERMINATIONS FOR OWNER'S FEEDERS IS IN HPLC/EIL SCOPE.

16. NUMERICAL RELAY CONTROL SUPPLY SHALL BE 110V DC.

17. FOR PROCESS TRIPS ADDITIONAL SELF RESET TYPE LOOKOUT RELAY AND ITS INDICATION SHALL BE PROVIDED IN N/R FOR MOTOR FEEDERS.

18. ONE NO. DC SUPPLY SUPERVISION RELAY(80) SHALL BE PROVIDED FOR EACH INCOMING DC SUPPLY TO THE SWITCHBOARD.

19. 4 POLE 20A MCCB TO BE PROVIDED ON LV SIDE OF THE BUS PTS. AND LINE PTS.

20. KVEIN RATED VOLTAGE INDICATED IN THE SLD ARE TENTATIVE AND WILL BE AS PER OEM'S RECOMMENDATION BASED ON FINALISATION OF RELAY MODEL.

21. ** EQUIPMENT RATING/PARAMETERS/QUANTITY ARE SUBJECT TO APPROVAL OF RESPECTIVE EQUIPMENT SIZING CALCULATIONS WHICH WILL BE SUBMITTED SEPARATELY BASED ON LOAD ANALYSIS.

22. THE COMPLETE MOTOR PROTECTIONS (INCLUDING DIFFERENTIAL PROTECTION BASED VENDOR RECOMMENDATION) WILL BE PART OF VENDOR DRAWINGS WHICH WILL BE SUBMITTED BY BHEL EDN, BANGALORE.

23. THE BUS VTR SUPERVISION 95B SHALL BE PROVIDED FOR ALARM AND SHALL NOT LEAD TO TRIP.

24. THE FOLLOWING FEEDERS SHALL BE PROVIDED WITH TIMERS FOR DELAYED TRIPPING ON BUS UNDER VOLTAGE WHILE THE UNDER VOLTAGE RELAY SHALL BE COMMON FOR THE BUS:

 a) CAPACITOR FEEDERS

 b) MOTOR FEEDERS

NUMERICAL RELAYS WHERE EVER PROVIDED FOR MOTORS & CAPACITOR FEEDERS SHALL USE IN BUILT UNDER VOLTAGE RELAY AND TIMER FOR DELAYED TRIPPING ON BUS UNDER VOLTAGE.

25. FOR OUTGOING PLANT FEEDERS FOR OWNER'S USE, THE SENDING END & RECEIVING END RELAYS FOR (87T) PROTECTION WILL BE PROVIDED BY VENDOR.

RECEIVING END CTS, TO CAPACITORS & MOUNTING OF RELAYS IN RECEIVING END WILL BE IN OWNER'S SCOPE.

26. DESIGNATED RELAY 51V, 51D, 40, 46, 86, 95, 96, 97 FOR PROTECTION SHALL BE PROVIDED IN THE NAME PLATE OF THE FRAME WILL BE INDICATED IN DG VENDOR DRAWING.

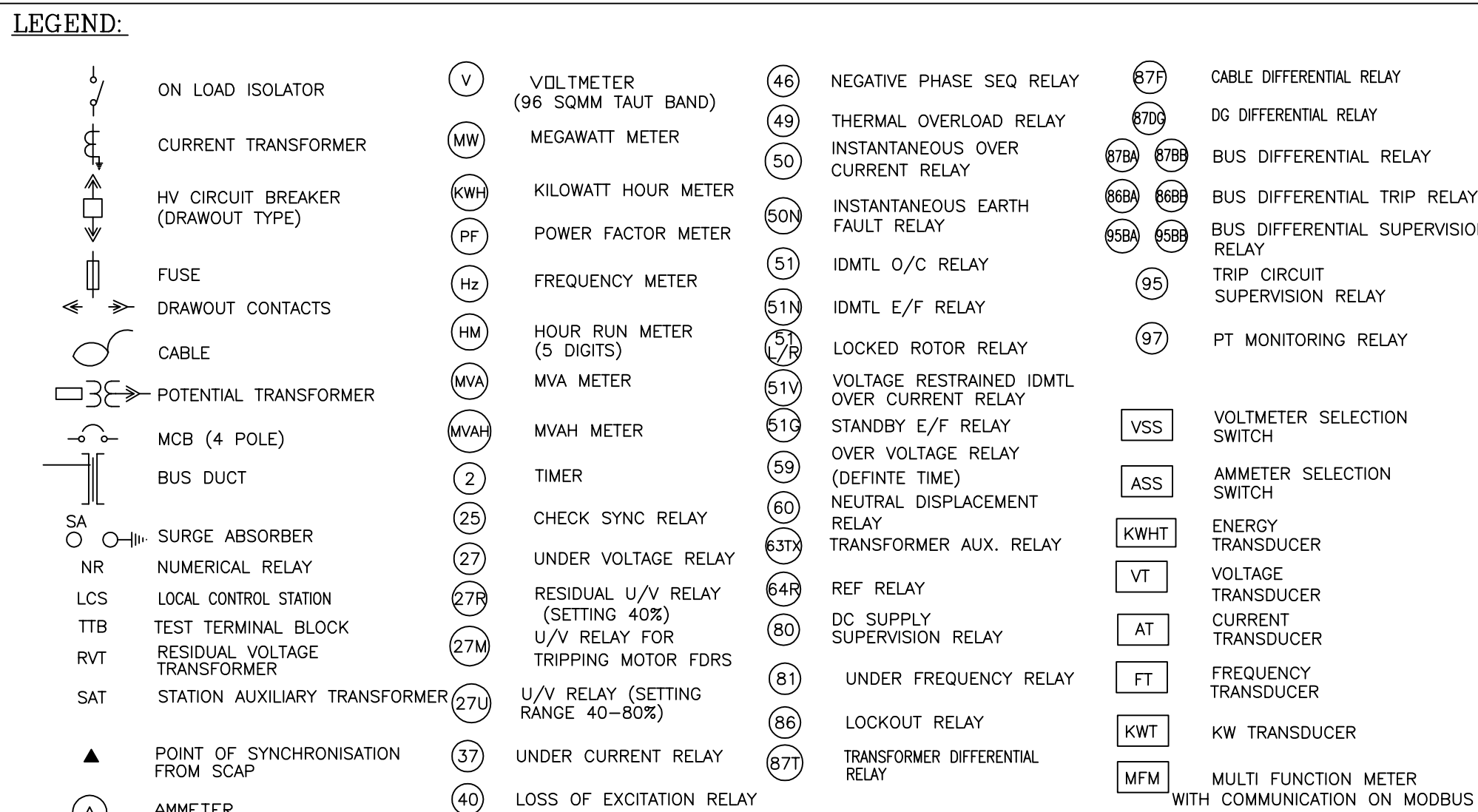
27. STABILIZING RESISTOR SHALL BE PROVIDED IN RESIDUAL EARTH FAULT CONNECTIONS FOR ALL MOTORS & TRANSFORMERS EVEN IN CASE OF NUMERICAL RELAYS TO PREVENT ANY SPURIOUS TRIPPING DURING STARTING.

28. 24V & 48V SUPPLY AUXILIARY RELAYS SHALL BE NUMERICAL MICROPROCESSOR BASED WITH IEC-61850 COMMUNICATIONS PROTOCOL. SYSTEM ARCHITECTURE SHALL BE IEC 61850 HSR.

29. NUMERICAL RELAYS FOR ALL MOTORS SHALL BE SUITABLE FOR TAKING RTD/BTD INPUTS.

DEPT. PE&SD CODE	UNTL. DIMS. GR. C/M/F		SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.	ITEM NO.	NO OF ITEMS
450					-N.A.-	-N.A.-	-N.A.-
TITLE SINGLE LINE DIAGRAM OF 11KV SWITCHGEAR				CARD CODE N.A.	BHEL DRG NO. PY-DL-1-M104-8801-02 CUST DRG NO.		REV 01
				SHT. NO	01	NO. OF SHT.	04

LOCATION: SUBSTATION BUILDING-94	
11 KV UTILITY SWITCHBOARD (HT-9422)	

[illegible]

DEPT. PE&SD CODE	UNTOL. DIMS. G.M.A.		SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.	ITEM NO.	NO. OF ITEMS
450					-N.A.-	-N.A.-	-N.A.-
TITLE SINGLE LINE DIAGRAM OF 11kV SWITCHGEAR				CARD CODE	BHEL DRG NO. PY-DL-1-M104-8801-02		REVISION
				N.A.	CUST DRG NO.		01
					SHT. No 02	NO. OF SHT.	04
10			11			12	

