

Click on the Document Title to go to that section of the document

Table of Contents			
Document Number	Rev.	Document Title	Page Number
PY-SE-4-M095-1101-01	01	Electrical control & operation philosophy	2
PY-SE-4-M095-1101-01_01_16_50_COM	01	COMMENTS on PY-SE-4-M095-1101-01 Rev. 01	16

Annexure-XIV



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ESP-001-2A Rev.00		PROJECT ENGINEERING & SYSTEMS DIVISION ELECTRICAL CONTROL PHILOSOPHY		Std. / Doc. Number	
				PY-SE-4-M095-1101-01	
				Rev. No.	01
				Sheet 1 of 10	

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ELECTRICAL CONTROL PHILOSOPHY

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Contents

1. OBJECTIVE	3
2. REFERENCE DOCUMENTS	3
3. GENERAL	3
4. 220KV SWITCHYARD, 11KV GENERATOR, 33KV SWITCHBOARD, 11/34.5KV GENERATOR TRANSFORMER AND 220/33KV GRID TRANSFORMERS.....	4
A. Control functions	4
B. Monitoring functions	4
C. Audio-Visual Annunciation Functions	5
D. MIMIC diagram.....	5
E. Control and Operation Philosophy	5
5. 6.6 kV SWITCH BOARD	6
6. 415V PMCC	6
A. Control Scheme	7
B. Controls.....	7
7. 415V DBs	8
8. OPERATING PHILOSOPHY IN VARIOUS CONDITIONS	8
A. Normal Operation	8
B. Black Start Condition.....	8
C. Emergency Condition (Blackout Condition)	8
9. SUBSTATION AUTOMATION SYSTEM	9
RECORD OF REVISIONS	10
ANNEXURE-I.....	11
Annexure-II.....	14

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**PROJECT ENGINEERING & SYSTEMS DIVISION**
ELECTRICAL CONTROL PHILOSOPHY**1. OBJECTIVE**

The document provides guidelines for Operation and Control philosophy of Plant electrical systems. It also covers annunciation, metering, control and indication of plant electrical systems.

2. REFERENCE DOCUMENTS

1. EIL Job specification, Section 4.7 (A747-400-16-50-SP-7210 rev A)
2. EIL Engineering Design Basis for Steam and Power Generation Plant (A747-000-16-50-DB-1001 rev 0)
3. EIL's Single Line diagram of SS-01 (SPG) (A747-400-16-50-00010 Rev-A)
4. Block diagram of SPG Package (A747-400-16-50-DS-7210)
5. Key SLD for GTG power flow (SPG Package) (A747-400-16-50-SK-0006)
6. BHEL's Key Single Line Diagram (PY-DL-1-M095-1101-01)
7. BHEL's Drive control Philosophy (PY-SC-4-M095-9301-01)

3. GENERAL

The Captive power plant electrical system is designed to meet the electrical power requirements of Petrochemical complex project.

The power plant consists of 1 no. of GTG (GTG-1), having a capacity of 36.36 MW provided with complete electrical system catering to the power requirements of the petrochemical complex and CPP. Evacuation is done through 33kV Switchgear (SS-01(CPP)). 33kV Generation Switchboard is fed from GTG-1 through 11/34.5 kV Generator transformer (TR-0101).

The CPP 33KV Switchgear (SS-01(CPP)) is also hooked up with 220KV grid through 220KV/33KV grid transformers (Not in BHEL scope of supply).

Synchronization of GTG-1 & 220KV grid are envisaged at 33kV Switchboard (SS01(CPP)). SCAP & ECS (Customer scope) are envisaged for synchronizing of GTG-1 & 220KV grid incomers. Synchronization of one future GTG also envisaged at 33kV level as per contract.

Further downstream distribution to CPP is done through 6.6kV switchboards (Not in BHEL scope of supply). 33/6.9kV Station Auxiliary transformers TR-0111 & TR-0112 (SAT-1&2) (Not in BHEL scope of supply).

Emergency power for safe shutdown & Black Start of CPP is envisaged from 6.6kV DG set. (Emergency DG is not in BHEL scope of supply)

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PROJECT ENGINEERING & SYSTEMS DIVISION

ELECTRICAL CONTROL PHILOSOPHY

4. 220KV SWITCHYARD, 11KV GENERATOR, 33KV SWITCHBOARD, 11/34.5KV GENERATOR TRANSFORMER AND 220/33KV GRID TRANSFORMERS

The control and monitoring for 220KV switchyard, 11kv Generators, 33kv Switchboard (Only incomers, Bus couplers & Bus ties only), 11/34.5kv Generator transformers and 220/33kv Grid Transformers is envisaged from hard wired mosaic SCAP and ECS located in CPP control room.

- | | | |
|-------------------------|---|-----------------------------|
| ✓ Hardwired SCAP System | - | BHEL Scope of supply |
| ✓ ECS | - | Not in BHEL Scope of supply |

A. Control functions

01

- Control of 2 Nos outgoing bays in 220KV switchyard.
- Tap changer control of 220/33KV Grid transformers
- Voltage and frequency control of GTG-1 & GTG-2(FUTURE).
- Control of the 33kv Isolator breaker panel
- Auto/Manual Synchronization, ON/OFF Control and Independent close for following breakers of 33kv Switchgear (SS-01(CPP)) through control of the Generators and ON/OFF control.
 - 8Nos 33kv breakers for incomers (4 Nos)
 - 6Nos 33kv breakers for bus couplers/bus ties (2Nos bus couplers and 2 Nos bus ties)
- Selector switches like auto/ manual selector switch for excitation, control ISO/droop selector switch for governor required to meet operating and monitoring functions from SCAP.
- Automatic synchronizing device with inputs to governor and excitation control of selected generator(s) for automatic synchronization of the selected breakers.
- Auto/Manual Synchronization trolley complete with running and incoming voltmeters, frequency meters, synchroscope, synchroscope ON/OFF switch, auto synchronizer, check synchronizing, guard relays, switches, lamp, cable etc.
- All other controls, as required for control/synchronization of generators, namely, field breaker control, etc.
- Temperature scanners will be provided on Gen relay Panel and annunciation shall be provided in SCAP.

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B. Monitoring functions

- Voltage & Frequency of 220 KV incomers & buses.
- Voltage of 33 KV isolating breaker panels.
- Voltage of 33 KV incomers and buses.

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ELECTRICAL CONTROL PHILOSOPHY

- Current of each phase of 33 KV incomers and bus couplers/bus tie breakers.
- Line and field voltage of each generator.
- Field current of each generator.
- Frequency and Power factor of each generator incomer.
- MW, MVAR & MVA of each generator incomer, switchyard incomer 33KV Switchgear (SS-01) & 220kV incomers from switchyard.
- MWH, MVARH of each generator incomer & incomers from switchyard.
- Voltage and frequency recorder of each bus.
- Null voltmeter of each generator.
- Tap position indicator for grid transformers.

C. Audio-Visual Annunciation Functions

- Fault status of 220 KV breakers.
- Annunciation of Fault status of 33kV Incomers and bus couplers/tie breakers in AIS.
- Operating and fault status of all protective relays and trip alarm of gas turbine generators.
- Complete trip and non-trip alarm annunciation for generator transformer & Grid transformers including alarm of OLTC of grid transformer.
- Hooter and clock.

D. MIMIC diagram

- ON/OFF indications of 220KV breakers, isolators & earth switches.
- ON/OFF indications of 33KV isolator breakers.
- ON/OFF indications of 33KV breakers of incomers, Bus-couplers & Bus ties.
- Discrepancy type TNC switches for circuit breakers.

E. Control and Operation Philosophy

- i) Each 33 kV Switchgear (SS-01(CPP)) has one local/remote control selector switch.
 - a. When selector switch is selected in local mode, controls will be done from 33kv switchgear (SS-01 (CPP)) control cubicle. Following operations are possible from 33 kV Switchgear (SS-01(CPP)):
 - i. Close of all incomers and bus couplers/Bus tie breakers in feeder/bus earthing mode/test only.
 - ii. Open of all breakers.
 - b. When selector switch is selected in remote mode, controls are transferred to hard wired synchronizing panel (SCAP).

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ELECTRICAL CONTROL PHILOSOPHY

Hard wired synchronizing panel (SCAP) is provided with the following major selector switch for operation and control:

- SW-1 3 position selector switch (SCAP/OFF/ECS)
- SW-2 4 position selector switch (OFF/Dead bus/Manual Synchronizing/Auto synchronizing) for synchronizing breakers
- SW-3 3 position selector switch for selection of generator (OFF/ALL/GTG-X)
- SW-4 5 position selector switch (BUS1A/BUS2A/BUS1B/BUS2B/OFF)

When selector switch SW-1 is selected in SCAP mode, controls are transferred to SCAP. Following operations are possible from SCAP:

- Close all incomers and bus couplers/sectionalizer (Tie) breakers on dead bus condition in service mode (bus coupler/ sectionalizer (Tie) breakers dead bus closing to be checked on either side).
- Auto/Manual Synchronize close of all incomer breakers and bus couplers/ sectionalizer (Tie) breakers in service mode.
- Open of all breakers.

When selector switch SW-1 in SCAP is selected in ECS mode, controls are transferred to Electrical Control System (ECS) (By customer).

- ii) For control of GTGs, Auto synch/OFF/ Remote synch selection is available in MARK VI, when the selection is made in Auto synch, auto synchronization of GTG is possible from turbine control panel (MARK VI). When the selection is made in Remote Synch, controls are transferred to SCAP, based on further selection of selector Switch SW-1, the controls are enabled either from SCAP or ECS. Auto & manual Synchronization of GTG are possible from SCAP.

5. 6.6 kV SWITCH BOARD

Engineering & Supply of 6.6kV Switchboards are not in BHEL scope. 6.6kV Motor outgoing feeder control shall be as per drive control philosophy.

6. 415V PMCC

Each 415 V PMCC Switchgear has two sources of supply:

- i) Incomer 1 which is connected to 415V Normal PCC
- ii) Incomer 2 which is connected to 415V EMG PCC.

All metering, control, indication, annunciation will be provided on the switchgear panel. The control scheme is described in brief as follows.

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ELECTRICAL CONTROL PHILOSOPHY

A. Control Scheme

Reference as per cl no. 5.6 of EIL Specification A747-400-16-50-SP-7210

i) **Normal operating condition**

- Incomer no. 1 and 2 breakers are NC. Bus-coupler breaker is NO.
- Auto/Independent/Manual Selector Switch is provided on the switchboard & normally kept in Auto Position for Auto Changeover.

ii) **Auto changeover**

- When Incomer 1 or 2 fails, the respective unhealthy incomer is tripped through under voltage and a timer.
- Bus coupler will close automatically by sensing healthy voltage of healthy incomer.
- Auto changeover is blocked if any incomer trips due to fault or both the incomers simultaneously experience under-voltage.
- Necessary protection interlocks will also be realized in the switchboard.

iii) **Independent operation**

In independent mode either of incomer 1 or incomer2 or bus coupler can be closed in dead bus condition after ensuring relevant bus under voltage.

iv) **Manual operation**

It is possible to take either of incomer1/incomer2/bus coupler for maintenance and bring it back to the normal operating condition by momentary paralleling.

In Manual mode either of incomer1 or incomer2 or bus coupler can be closed through contacts of check sync relay.

PT selection switch & Trip selector switch shall be provided on the switchboard.

B. Controls

a. Following operations are possible from Switchgear:

- Close of all incomers, bus coupler and outgoing breakers in test position.
- Close of all incomers on independent and manual mode in service position
- Close of bus coupler breaker on auto, independent and manual mode in service & test position.
- Close of all outgoing breakers in test and service position.
- Open of all breakers.

b. ☒ No controls, Annunciation and metering envisaged from SCAP for LT Switchgear for breaker feeders Hard wire Trip envisaged for breaker feeders from ECS

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ELECTRICAL CONTROL PHILOSOPHY

- d. Metering & feedbacks to ECS for Incomers, Bus couplers, Bus PTs and outgoing breaker feeders as per ECS I/O list of EIL Job specifications doc no: A747-400-16-50-SP-7210.
- e. For Motor feeders controls are envisaged from DCS/PLC as per drive control philosophy (BHEL Doc No: PY-SC-4-M095-9301-01)

7. 415V DBs

All applicable control and monitoring are provided on the switchgear only.

8. OPERATING PHILOSOPHY IN VARIOUS CONDITIONS

A. Normal Operation

During normal operation all the generators (GTGs) shall operate in parallel among themselves and also with grid. In case of outage of any GTG, power drawn from grid shall increase to meet the generation short fall.

B. Black Start Condition

The plant will be started manually with power supply from 6.6KV DG set.

During Black start, DG has to cater following loads.

- Black start of one GTG.
- Owner's load.
- All critical loads of CPP like DC, UPS, emergency lighting etc.

C. Emergency Condition (Blackout Condition)

When there is a blackout of CPP due to outage of all generators & grid, 6.6KV DG sets shall start automatically by sensing the simultaneous under voltage on all 6.6KV buses.

In emergency condition, 6.6KV DG will start automatically to feed below loads

- Emergency shutdown loads of GTGs.
- Emergency CPP loads like DC, UPS, AC emergency lighting.
- Owner's Emergency load.

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ELECTRICAL CONTROL PHILOSOPHY

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Rev. No.

01

Sheet 9 of 10

9. SUBSTATION AUTOMATION SYSTEM

Substation Automation System (SAS) shall be provided in the substation. For the scope of SAS system Refer system architecture (EIL doc. no. A747-400-16-50-SK-0007). Attached as Annexure-II

ANNEXURE –I

Control and monitoring facilities provided for each electrical system on various panels viz. ECS (By Customer), SCAP, Switchgear in tabular form (in line with this document) is indicated in this annexure.

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ELECTRICAL CONTROL PHILOSOPHY

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Sheet 10 of 10

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ELECTRICAL CONTROL OPERATING PHILOSOPHY

S.No.	EQUIPMENT	BREAKER	SCAP						SWITCHBOARD						ECS(By customer)							
			Location : Control Room							Location : Switchgear Room							Location : Control room					
			Synchronisation	Control	Metering	Annunciation	Indication	Remarks	Sync	BKR	Metering	Protections	Indication	Remarks	Sync	Control	Metering	Annunciation	Indication	Remarks		
1	220KV GRID 01	I/C	NA	CB Close in service position	V,F	CB Tripped on fault	CB ON	01	BY CUSTOMER						ECS is in Customer Scope							
						Line PT Sec MCB off	CB OFF															
				Trip circuit unhealthy		CB RTC															ISO-1,2 & ESW ON, OFF	
				CB Open																		
		B/C	NA	CB Close in service position	V,F	CB Tripped on fault	CB ON	01	BY CUSTOMER						ECS is in Customer Scope							
						Line PT Sec MCB off	CB OFF															
				Trip circuit unhealthy		CB RTC															ISO-1,2 & ESW ON, OFF	
				CB Open																		
		O/G	NA	CB Close in service position	V, A, F, PF, MW, MVA, MVAR (Note-2)	CB Tripped on fault	CB ON		BY CUSTOMER						ECS is in Customer Scope							
						Line PT Sec MCB off	CB OFF															
				Trip circuit unhealthy		CB RTC															ISO-1,2 & ESW ON, OFF	
				CB Open																		
2	33kV ISOLATOR BREKER	ISOLATOR BREAKER	NA	CB Close in service position	V	CB Tripped on fault	CB ON		BY CUSTOMER						ECS is in Customer Scope							
				CB Open		Line PT Sec MCB off	CB OFF															
						Trip circuit unhealthy	CB RTC															
2	GTG-1 & GTG-2(Future)	NA	Auto & Manual Synch facilities are provided on SCAP. Sync is done at respective Incomer CB of 33kV Switchgear. (refer Note-1)	Voltage control	V, A,F,PF, MW,MVA, MVAR (Note-2)	Fault status of trips & alarms of GTG	PF/MVAR ON/OFF	EMG STOP, CO2 Release. **Temperature Scanner is part of GRP	NA	NA	NA	NA	NA		ECS is in Customer Scope (As per ECS IO list 6987-046-16-50-DS-70 rev00)							
				Speed control	Exciter V,A	Group Alarm for Generator temperatures**	AVR Ch-1/2 in service															
				Exciter Field breaker control	Null voltmeter		AVR in local,reset															
				PF, MVAR Regulation	Trivector meter		Exciter CB ON,OFF															
				ISO/Droop Mode			ISO/DROP Mode															
				AVR Auto/Manual SS & AVR RESET																		
5	GRID TRANSFORMER	NA	NA	Tap Raise	TPI	Windg. Temp. High Alarm & trip	NA		BY CUSTOMER						ECS is in Customer Scope							
						Oil Temp. High Alarm & trip																
				Tap Lower		Bucholz Alarm & trip																
						PRV trip, MOG alarm, OLTC STRUCK																
6	GENERATOR TRANSFORMER (GTGTB-1, GTGTB-2(Future))	NA	NA	NA	NA	Windg. Temp. High Alarm & trip	NA		NA	NA	NA	Transformer incipient faults (GRP)	NA		NA	ECS is in Customer Scope (As per ECS IO list 6987-046-16-50-DS-70 rev00)						
						Oil Temp. High Alarm & trip																
						Bucholz Alarm & trip																
						PRV trip, MOG alarm																

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S.No.	EQUIPMENT	BREAKER	SCAP						SWITCHBOARD						ECS(By customer)							
			Location : Control Room							Location : Switchgear Room							Location : Control room					
			Synchronisation	Control	Metering	Annunciation	Indication	Remarks	Sync	BKR	Metering	Protections	Indication	Remarks	Sync	Control	Metering	Annunciation	Indication	Remarks		
8	33kV Switchgear (SS-01(CPP))	GTG I/C	Auto & Manual Synch facilities are provided on SCAP. (refer Note-1).	1) Auto Synch/ Ind/ Man Synch CB Close in service position.	V, A,F,PF,MW,MV A,MVAR,MWH, MVARH (Note-2)	CB Tripped on fault	CB-1 , 2 ON	"OFF/Ind/Auto sync/ Manual Sync" Selector switch is mounted on SCAP. Line PT signal to be provide.	BY CUSTOMER						ECS is in Customer Scope							
						Line PT Sec MCB off	CB-1 , 2 OFF															
						Trip circuit unhealthy	CB-1,2 RTC															
				1) CB Open																		
		GRID I/C	Auto & Manual Synch facilities are provided on SCAP. (refer Note-1).	1) Auto Synch/ Ind/ Man Synch CB Close in service position.	V, A,F,PF,MW,MV A,MVAR,MWH, MVARH (Note-2)	CB Tripped on fault	CB-1 , 2 ON	"OFF/Ind/Auto sync/ Manual Sync" Selector switch is mounted on SCAP. "All/GTG-1/GTG- 2/Off" Selector Switch is mounted on SCAP (Common Switch for complete SCAP)	BY CUSTOMER						ECS is in Customer Scope							
						Line PT Sec MCB off	CB-1 , 2 OFF															
						Trip circuit unhealthy	CB-1,2 RTC															
				1) CB Open																		
		Bus Coupler & Bus Tie	Auto & Manual Synch facilities are provided on SCAP. (refer Note-1).	1) Auto Synch/ Ind/ Man Synch CB Close in service position.	A	CB Tripped on fault	CB-1 , 2 ON	"OFF/Ind/Auto sync/ Manual Sync" Selector switch is mounted on SCAP. "All/GTG-1/GTG- 2/Off" Selector Switch is mounted on SCAP (Common Switch for complete SCAP)	BY CUSTOMER						ECS is in Customer Scope							
						Trip circuit unhealthy	CB-1 , 2 OFF															
						DC Supply-1 fail (common for swbd)	CB-1,2 RTC															
				1) CB Open		DC Supply-2 fail (common for swbd)																
		BUS & BUS PT	NA	NA	Voltage recorder	Bus PT Sec MCB off	NA	Bus PT- 1A,1B,2A & 2B signals to be provide.	BY CUSTOMER						ECS is in Customer Scope							
					Frequency recorder																	
					V																	
					F																	

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ELECTRICAL CONTROL OPERATING PHILOSOPHY

S.No.	EQUIPMENT	BREAKER	SCAP						SWITCHBOARD						ECS(By customer)					
			Location : Control Room						Location : Switchgear Room						Location : Control room					
			Synchronisation	Control	Metering	Annunciation	Indication	Remarks	Sync	BKR	Metering	Protections	Indication	Remarks	Sync	Control	Metering	Annunciation	Indication	Remarks
11	0.415KV PMCC (Refer Note 4)	I/C	NA	NA	NA	NA	NA		Manual close through check sync relay	CB Close in test position	A,V,PF, KW, KWH	50, 50N, 51, 51N, 86, 95, 27/2, 25	Refer-Note-3		NA	CB TRIP	ECS is in Customer Scope (As per ECS IO list 6987-046-16-50-DS-70 rev00)			
										CB Independent Close in Service position										
										CB Open										
		B/C	NA	NA	NA	NA	NA		Manual close through check sync relay	CB Close in test position	A	50, 50N, 51, 51N, 86, 95, 27/2, 25	Refer-Note-3		NA	CB TRIP	ECS is in Customer Scope (As per ECS IO list 6987-046-16-50-DS-70 rev00)			
										CB Independent Close in Service position										
										CB Open										
		ACB O/G	NA	NA	NA	NA	NA	NA	NA	CB Close in test position	A	50, 50N, 51, 51N, 86, 95	Refer-Note-3		NA	CB TRIP	ECS is in Customer Scope (As per ECS IO list 6987-046-16-50-DS-70 rev00)			
										CB Independent Close in Service position										
										CB Open										
		ACB O/G MOTOR FDR	NA	NA	NA	NA	NA	NA	NA	CB Close in test position	A	MPR (Motor Protection relay)	Refer-Note-3	Motor feeder control from DCS as per drive control philisophy.	NA	CB Close in service position	ECS is in Customer Scope (As per ECS IO list 6987-046-16-50-DS-70 rev00)			
										CB Independent Close in Service position										
										CB Open										
		BUS & BUS PT	NA	NA	NA	NA	NA				NA	V, F	27/2	MCB OPEN		NA	NA	ECS is in Customer Scope (As per ECS IO list 6987-046-16-50-DS-70 rev00)		

NOTES

- 01
- 1

Auto/Manual Synchronisation purpose of GTG-1, GTG-2(Future) . Auto Synchroniser.Dual voltmeter, Dual Freq.meter, Synchroscope, Synchroscope on/off switch, Checksync. relay, Gaurd relay, SS, Socket, Cable (3meters) etc. are provided on Synchronising trolley.
- 2

Separate meters shall be provided for measuring parameters indicated.
- 3

Open, Close, Trip, Trip Circuit healthy, DC Fail(buscoupler), Spring charged LED type indicating lamps provided on switchboard.
- 4

Only Breaker feeders are covered.
- 5

TNC Switch is discrepency type.
- 6

Electrical signals (except for drives) are not envisaged at DCS.
- 7

All the controls, Protections, Indications for MV Switchboards are as per Design Basis A747-999-16-50-EDB-1001and Data sheets A747-555-16-50-Ds-0107.108,111,112,113,114,117119,121123.

LEGEND:

A - AMMETER	64R - RESTRICTED EARTH FAULT RELAY
V - VOLTMETER	51G - STANDBY EARTHFALT RELAY
MW - MEGAWATT METER	87GT - OVERALL DIFFERENTIAL RELAY
MWH - ENERGY METER	80 - CONTROL SUPPLY SUPERVISION RELAY
MVA - MEGAVOLTAMP METER	81 - U/F RELAY WITH DF/DT
MVAR - MEGAVAR METER	86 - LOCK RELAY
F - FREQUENCY METER	87B - BUS DIFFERENTIAL RELAY
W - WATTMETER	87F - FEEDER DIFFERENTIAL RELAY
TPI - TAP POSITION INDICATOR	87T - TRAFO DIFFERENTIAL RELAY
2- TIMER	95 - TRIP CKT SUPERVISION RELAY
25 - CHECK SYNC RELAY	95B - BUS DIFFERENTIAL SUPERVISION RELAY
27 - ANEVOUS OVER VOLTAGE RELAY	97 - FUSE FAILURE RELAY
31 - ANEVOUS OVER CURRENT RELAY	98 - DEAD BUS RELAY
32 - ANEVOUS EARTH FAULT RELAY	OFF/IND/ AUTO SYCH/ MAN SYNCH SS - OFF/ INDEPENDENT/ AUTO SYNCHRONIZATION/ MANUAL SYNCHRONIZATION SELECTOR SWITCH
51 - IDMT OVRERCURRENT RELAY	ESW - EARTH SWITCH
51N - IDMT EARTH FAULT RELAY	
67 - DIRECTIONAL PHASE O/C RELAY	
67 - DIRECTIONAL EARTHFALT RELAY	



DOCUMENT REVIEW DETAILS

- 1

No Comments.
- 2

Proceed with manufacture / fabrication as per commented document. Revised document is not required.
- 3

Document does not conform to basic requirements as marked. Resubmit for review.
- 4

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Signature with Date 05/05/2017 18:42:13

Name of Reviewer HAROONRASHID MD (B033)

Transmittal No.

BHEL's Replies to EIL Comments on Rev-00

Electrical Control Philosophy

PROJECT: Revival of Ramagundam Fertilizer Complex
NAME OF PACKAGE: Steam & Power Generation

CLIENT: M/s RFCL
CONTRACTOR: M/s BHEL

DOC. NO.	A747		-
	JOB NO.	TR. NO.	S.NO

SL. NO.	COMMENT/ OBSERVATION	RESOLUTION / ACTION
1.	DRAWING / DOCUMENT TITLE : ELECTRICAL CONTROL PHILOSOPHY	
1.1	Refer point no. 4 D (Mimic Diagram). LED based semaphore indicators shall be included.	LED based semaphore indicators shall be provided for 220kV Isolators and earth switches only. Discrepancy switch shall be provided for all breakers for which control from SCAP is envisaged. ON/OFF LED Indications shall also be provided for all circuit breakers.
1.2	Refer note-2 of Annexure-1 (page 3 of 3). Separate meters shall be provided for each functions.	Noted. Updated in revised document.
1.3	Operational scheme for 415 V Swbd shall be as per cl no. 5.6 of A747-400-16-50-SP-7210 attached with Tender. Protection and metering of generator and 415V switchboard shall be as per datasheets attached with tender.	Complied.

DOCUMENT REVIEW DETAILS

☒ 1 No Comments.
☐ 2 Proceed with manufacture / fabrication as per the commented document. Revised document required.
☐ 3 Document does not conform to basic requirements as marked. Resubmit for review.

☒ Retained for Records. ☐ Void.

Replied By: (SIGN/ DATE): 29/04/2017.

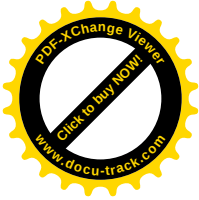
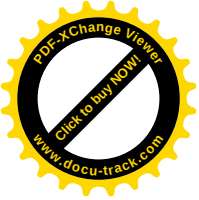
Signature with Date **05/05/2017 18:42:13**

Name of Reviewer **HAROONRASHID MD (8033)**

Transmittal No. _____

BHARAT HEAVY ELECTRICAL LIMITED

Name: G.Seshu Kiran/J.K Pattanaik



BHEL's Replies to EIL Comments on Rev-00 Electrical Control Philosophy

PROJECT: Revival of Ramagundam Fertilizer Complex
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Conformity of document details to contract stipulations is contractor's responsibility. Document is retained for records.

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Transmittal No. _____	

Replied By: (SIGN/ DATE): 29/04/2017.

Department: PE&SD-Electrical

Name: G.Seshu Kiran/J.K Pattanaik

BHARAT HEAVY ELECTRICAL LIMITED

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