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REF.WO.NO. 65002-A-517-01  
REF.DRG.NO. 3 469 00 01757

SIGN/DATE

INVENTORY NO.

DRG. NO. 3 469 00 02033

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LIST OF DRAWING

DESCRIPTION	DRAWING NOS	
OUTLINE GENERAL ARRANGEMENT(OGA)	BP-DG-435-305-0001	3 469 00 02032
OGA PART LIST	BP-DG-435-305-0002	3 469 00 02033
FOUNDATION PLAN	BP-DG-435-305-0003	3 469 00 02034
SHIPPING DIAGRAM	BP-DG-435-305-0006	3 469 00 02035
420KV, HV LINE BUSHING	BP-DG-435-305-0004	3 469 00 02036
145KV, NEUTRAL BUSHING	BP-DG-435-305-0005	3 469 00 02037
320DIA TWIN BI-DIRECTIONAL ROLLER	BP-DG-435-305-0007	3 469 00 02038
RATING AND DIAGRAM PLATE	BP-DG-435-305-0008	3 469 00 02039

APPROXIMATE WEIGHT & OIL QTY.

DESCRIPTION	WT. IN KG	OIL (L)
CORE AND WINDING	91700	
TANK & FITTINGS	23705	47040
BUSHINGS	4700	
RADIATOR BANK & DRG.	16020	7410
CONTROL CABINET	500	
TOTAL OIL	47375	54450
TOTAL WEIGHT	184000	

TATA CONSULTING ENGINEERS LIMITED  
VENDOR DRAWING STATUS

	CATEGORY	DESCRIPTION
<input checked="" type="checkbox"/>	CAT-1	Drawing/documents approved for final distribution. BHEL will proceed with manufacturing/ fabrication/construction.
<input type="checkbox"/>	CAT-2	Drawing/documents cleared for manufacturing/ fabrication/construction subject to incorporating the comments given. BHEL to resubmit the drawing for Approval in Category – 1. Comments will be marked on the drawing documents.
<input type="checkbox"/>	CAT-3	Drawing document will be corrected as per comment and resubmitted by BHEL for further review/checking.
<input type="checkbox"/>	CAT-4	Drawing document of this category are for information only and not for approval. Information furnished on the document is noted.

Note:	
1.	It is mandatory to close documents with Code 2 & 3 to Code 1 in agreed contract period or 2 weeks, whichever is lower.
2.	Any design changes / modification required to be carried out in Code 4 Drawings / Documents shall be the responsibility of BHEL. BHEL to resubmit reflecting the Design Changes for information.

Approval conveyed herein neither relieves the Vendor/Contractor of his contractual obligations and his responsibilities for correctness of dimensions, materials of construction, weights, quantities, design details, assembly fits, performance requirements and conformity of supplies with the Indian Statutory Laws as may be applicable, nor does it limit the purchaser's rights under the contract.

Reviewed by .....S.S. Sathish.....Date.....

NOTES:-

- EACH VALVES SHALL BE PROVIDED WITH INDICATOR TO SHOW CLEAR POSITION OF THE VALVE.
- WEIGHTS & OIL QUANTITIES ARE FINAL.
- CABLE TRAY ON REACTOR TANK FOR CABLING OF INSTRUMENTS.

TABLE OF FITTINGS

ITEM NO	DESCRIPTION	QTY	ZONE
4a	EARTHING TERMINAL (20 TK X 50 X 110 LG).	2	207-B
25a	DRAIN/FILTER VALVE (50 NB GATE) FOR COOLING SYSTEM	2	205-C
30	LIFTING LUGS FOR RADIATORS	12	207-D
60	RADIATOR BANK ( NO OF INDIVIDUAL UNITS = 10)	1	207-D
67	FLEXIBLE HOSE PIPE (200 NB) (TOP & BOTTOM)	2	206-C
72	"A" FRAME SUPPORTS (BEARING CAPACITY = 30 TONNES)	2	406-B
73	TOP HEADER	1	405-D
74	BOTTOM HEADER	1	405-C
86c	AIR RELEASE PLUGS (3/4"BSP)	10 NOS ON RADIATOR 2 NOS FOR TOP & BOTTOM HEADER	12 207-D
114	DRAIN PLUGS (3/4"BSP)	10 NOS ON RADIATOR 2 NOS FOR TOP & BOTTOM HEADER	12 207-B
119	ISOLATING VALVES FOR RADIATORS (80 NB BUTTERFLY)	20	307-D
161	GAS COLLECTING DEVICE PIPE (6 NB)	1 NO ON TANK COVER 2 NO ON HEADER	1 205-C
163	EQUALISING PIPE (50NB)	1	204-D
163a	EQUALISING PIPE (25NB) FOR TURRETS	4	303-E
191	TOP OIL PIPE 200 NB (RADIATOR BANK)	1	205-C
196	BOTTOM OIL PIPE 200 NB (RADIATOR BANK)	1	206-B

COOLING SYSTEM

CONSERVATOR AND PIPE WORK

10a	INSPECTION COVER FOR OIL CONSERVATOR (BOLTED) 20 KG	1	407-E
12	OIL GAUGE MAGNETIC TYPE WITH LOLA	1	407-E
14a	50 NB DRAIN GATE VALVE FOR OIL CONSERVATOR	1	407-C
15	OIL CONSERVATOR 1300 DIA (ATMOSEAL TYPE)	1	207-E
17	DEHYDRATING BREATHER WITH SILICAGEL (3 IN SERIES)	1	207-B
26	BUCHHOLZ RELAY (80 NB)	1	304-D
67a	FLEXIBLE HOSE PIPE (80 NB)	1	206-D
79a	LADDER WITH LOCKING DEVICE	1	306-D
86a	AIR RELEASE PLUG (3/4"BSP) FOR CONSERVATOR.	2	407-E
86b	AIR RELEASE PLUG (1/4"BSP) FOR CONSERVATOR.	1	406-E
119a	ISOLATING VALVE BUTTERELY FOR BUCHHOLZ RELAY(80 NB) (1- GATE 1-BUTTER FLY)	2	206-D
125	GAS COLLECTING DEVICE	1	205-C
153	CONSERVATOR SUPPORTS	2	405-E
164	BREATHER PIPE (15 NB)	1	207-E
165	BREATHER ISOLATION GATE VALVE (15 NB)	1	206-E
168	CONSERVATOR PIPE (80 NB)	1	205-D
185	FLOW SENSITIVE CONSERVATOR ISOLATION VALVE	1	306-D
206	BHEL MONOGRAM	1	406-E
211	ATMOSEAL ARRANGEMENT (AIRCELL) (INSIDE THE CONSERVATOR)	1	406-E
213	CONSERVATOR DRAIN PIPE (50 NB)	1	407-D

TABLE OF FITTINGS

ITEM NO	DESCRIPTION	QTY	ZONE
2	RATING AND DIAGRAM PLATE	1	203-C
2a	DO'S & DONT'S INSTRUCTION PLATE	1	204-C
3	LIFTING LUGS (60000 KG. EACH)	4	403-D
3a	LIFTING LUGS FOR TANK COVER	6	304-E
4	EARTHING TERMINAL (SIZE 20 TK X 75 X 12 LG.) STAINLESS STEEL	4	202-B
8	NAME PLATES (ENGLISH & HINDI)	1+1	203-C
10	INSPECTION COVERS (25 Kgs EACH) (6NOS. ON TANK COVER, 1 NO. ON TANK)	7	202-D
13	DRAIN PLUGS ON TANK 1"BSP	2	202-B
14	100 NB DRAIN GATE VALVE	1	203-B
18	POCKET FOR OTI	1	304-E
18a	POCKET FOR WTI	1	305-E
18b	ORDINARY THERMOMETER WITH POCKET	1 NO ON TANK COVER 2 NO ON HEADER	2+1 304-E
18c	RTD POCKET FOR OTI	1	304-E
18d	RTD POCKET FOR WTI	1	304-E
18e	RTD POCKET FOR OTI (SPARE)	1	305-E
18f	RTD POCKET FOR WTI (SPARE)	1	304-E
19	JACKING PADS 60000 KG EACH	4	202-B
20	PROVISION FOR VALVE MTG FOR ONLINE INSULATING DRY KEEP SYSTEM	2	203-D
21	OIL TEMPERATURE INDICATOR.	1	204-B
22	WINDING TEMPERATURE INDICATOR DIAL TYPE WITH REPEATER	1	204-B
23	MOUNTING PAD FOR 320 DIA TWIN BI-DIRECTIONAL ROLLERS. ROLLERS ONLY FOR REACTOR MOVEMENT AT SITE.	4	204-B
24	MTG BRACKET FOR ONLINE INSULATING DRY KEEP SYSTEM	2	204-B
25	50 NB GATE VALVE ON TANK AND COVER (2 NOS ON TANK, 1 NO. ON COVER)	2+1	403-B
27	PRESSURE RELIEF DEVICE WITH OIL COLLECTOR ASSY.	1	305-E
28	15 NB GATE VALVE FOR OIL SAMPLING	1	203-B
34	COOLER CONTROL CABINET (TANK MOUNTED)	1	304-D
42	VALVE FOR CONNECTION TO VACUUM PUMP(100 NB BUTTERFLY)	1	305-E
79	LADDER WITH LOCKING DEVICE	1	302-E
80	BUTTERFLY VALVE (200 NB) AT INLET.	1	205-B
81	BUTTERFLY VALVE (200 NB) AT OUTLET.	1	404-C
86	AIR RELEASE PLUG 1/2"BSP.	1	304-E
109	PULLING HOLE DIA 64	8	202-B
212	COVER EARTHING OF CORE AND CORE CLAMPS.	1	305-E
6	HV LINE BUSHINGS 420 KV 1250A	3	206-E
6X	HV NEUTRAL BUSHING 145 KV 1250A	1	203-D
7	420 KV TERMINAL CONNECTOR	3	206-E
122	CONNECTION BOX FOR C T TERMINAL (HV)	3	203-D
122a	CONNECTION BOX FOR C T TERMINAL (HVN) ON COVER	4	303-E
148	NEUTRAL TURRET	1	203-D
150	HV TURRETS	3	202-D
157	NEUTRAL GROUNDING STRIP (COPPER)	1	203-B
158	POST INSULATOR	3	203-C
180	TERMINAL MARKING PLATE	4	203-D

REACTOR

BUSHING & TURRET

TYPE OF PRODUCT 2 X 125 MVAR, 420KV, 3-PHASE, ONAN, SHUNT REACTOR.

PROJECT 2X660MW TANGEDCO UDANGUDI THERMAL POWER PROJECT STAGE-I.



OWNER

TAMILNADU GENERATION & DISTRIBUTION CORPORATION LTD



OWNER'S CONSULTANT

TATA CONSULTING ENGINEERS LIMITED, BENGALURU



भारत हेवी इलेक्ट्रिकल्स लिमिटेड भोपाल  
BHARAT HEAVY ELECTRICALS LTD. BHOPAL

NAME SIGN DATE

DRN. MKP 07.01.2019

CHD. KD/AJ 07.01.2019

APPD. KD/AJ 07.01.2019

TITLE/- OUTLINE GENERAL ARRANGEMENT (PART LIST)

DRG. NO 3 469 00 02033

REV. 02

SHEET 01 OF 01

REV	DATE	ALT.		REV	DATE	ALT.		REV	DATE	ALT.	MKP		REV	DATE	ALT.	MKP	-SD-
		CKD.				CKD.											
		APPD.				APPD.											
ZONE				ZONE				ZONE					ZONE				

COMMENTS INCORPORATED AS PER LETTER NO.11403A-EL-VDT-186 DTD.07/08/19

DESIGN BASIS AND SIZING (RATING) OF SHUNT REACTOR ALREADY SPECIFIED IN TECHNICAL SPECIFICATION. ENCLOSED HEREWITH.

BHEL DRAWING/DOCUMENT NO	BP-DG-435-305-0002
ADDITIONAL INFORMATION	WO: 67023-A-517-01 STATUS OF DRAWING "PR" DISTRIBUTION OF PRINTS TRE-1, TRM-3
PO. NO.	CE/PROJ.II/SE/C/UTPP/EE/E/LOI/D.179/2017 DTD 07.12.2017.