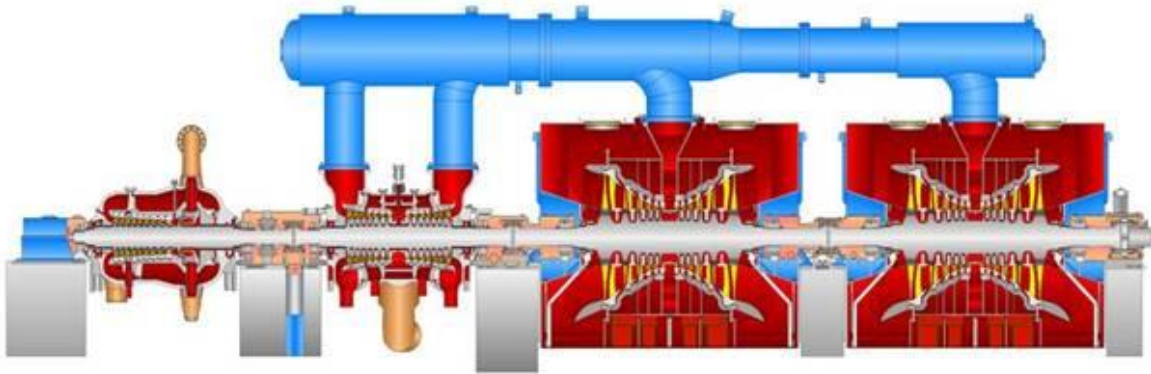


**KUDGI SUPER THERMAL POWER PROJECT STAGE-I (3x800MW)**



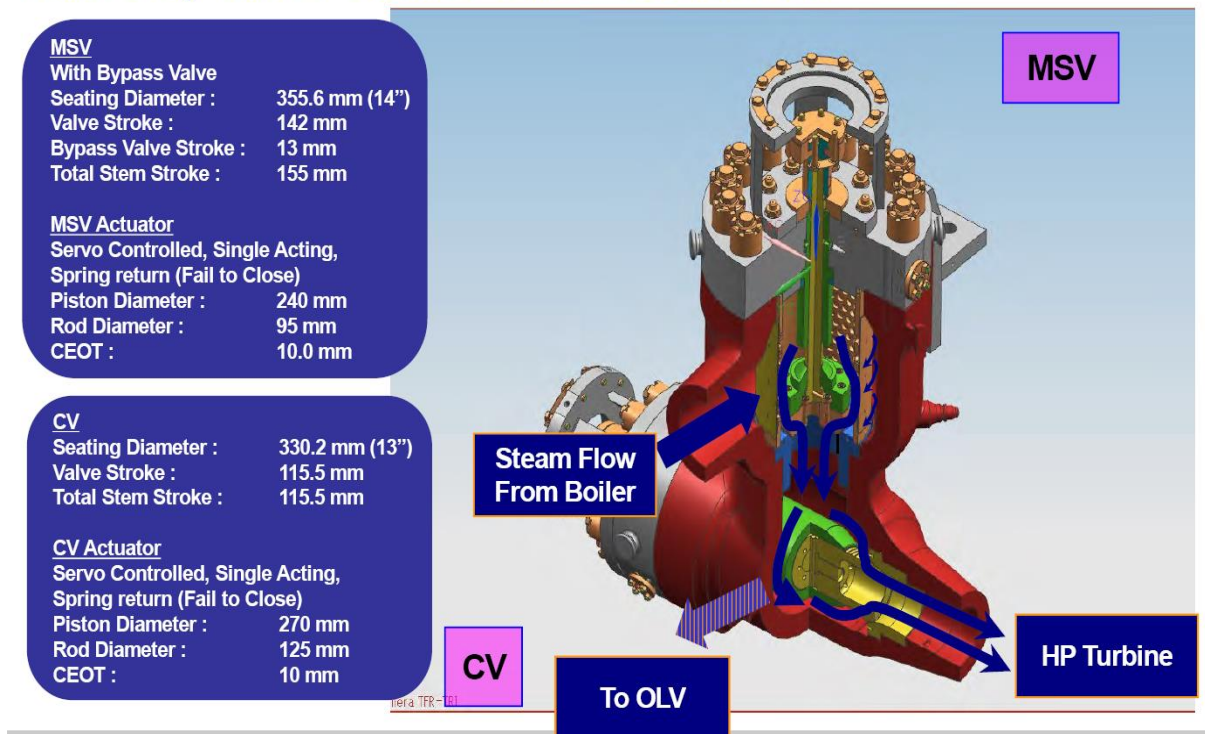
**TYPICAL CONFIGURATION OF TG UNIT OF KUDGI-I (3X800MW)**

SL. NO.	ATTRIBUTES	UNIT	VALUE
CYCLE PARAMETERS:			
1.	MAIN STEAM PRESSURE	Kg/cm2(a)	247
2.	MAIN STEAM TEMPERATURE	Deg.C	565
3.	REHEAT STEAM TEMPERATURE	Deg.C	593
4.	NO. OF REHEATS		01
5.	DESIGN BACK PRESSURE	mmHg (a)	LP-68,HP-86,Avg.77
6.	FINAL FEED WATER TEMPERATURE	Deg.C	290
7.	GURANTEED HEAT RATE AT TMCR	Kcal/KWH	1819.3
8.	GURANTEED HEAT RATE AT TMCR 105% OF TMCR	Kcal/KWH	1818.8
9.	GURANTEED VACUUM	mmHg (a)	67
10.	COLD START UP PARAMETERS (MS Pr. /MS Temp. /HRH Temp.)	ata/Deg.C/ Deg.C	92/380/380
11.	TOTAL COLD START UP TIME	min	591
MAIN TURBINE			
1.	MAKE		TOSHIBA CORPORATION, JAPAN
2.	COMBINED HP-IP		NO
3.	DOUBLE LP TURBINE		YES
4.	NO. OF TURBINE CYLINDERS		4
5.	NO. OF CASING IN HPT		02
6.	NO. OF CASING IN HP-IP		NA
7.	NO. OF CASING IN IPT		02
8.	NO. OF CASING IN LPT		02
9.	TYPE OF TURBINE INSULATION		CERAMIC FIBRE AND MINERAL WOOL PADS/BLANKET
10.	ACOUSTIC ENCLOSURE PROVIDED OR NOT		YES
11.	LPT EXHAUST DOWNWARD /AXIAL		DOWNWARD
12.	NO. OF EXTRACTION		8
13.	TYPE OF HPT (SINGLE/DOUBLE FLOW)		SINGLE
14.	TYPE OF IPT (SINGLE/DOUBLE FLOW)		DOUBLE
15.	TYPE OF LPT (SINGLE/DOUBLE FLOW)		DOUBLE
16.	COMPOUNDING (TANDEM/CROSS)		TANDEM
17.	CASING DIAMETER (HP/HIP/IP/LP) (MAX.)	mm	2680/-/3620/3169
18.	BEARING SPAN (HP/HIP/IP/LP)	mm	4900/-/5840/5260/5260
19.	ROTOR DESIGN (WELDED/ONE PIECE FORGED)		HP- ONE PIECE FORGED IP- TWO FORGED PIECES WELDED TOGETHER LP- ONE PIECE FORGED
20.	TYPE OF GLAND SEALS		SPRING BACKED LABYRINTH TYPE
21.	HPT MODULE NO.		-
22.	HIP MODULE NO.		NA
23.	IPT MODULE NO.		-
24.	LPT MODULE NO.		TC4F36
25.	NO. AND TYPE OF TURBINE BEARING		01 NO. TILTING PAD TYPE JOURNAL CUM THRUST BEARING 03 NOS TILTING PAD TYPE JOURNAL BEARING 06 NOS FIXED TYPE ELLIPTICAL JOURNAL BEARING
26.	NO. OF HP TURBINE BLADES		18 (ALL REACTION TYPE)
27.	NO. OF HIP TURBINE BLADES		NA
28.	NO. OF IP TURBINE BLADES		13x2 (1 IMPULSE AND 12 REACTION TYPE)
29.	NO. OF LP TURBINE BLADES		6x2x2 (1 IMPULSE AND 5 REACTION TYPE)

30.	LPT LAST STAGE BLADE TYPE		SHROUDED (WITH SNUBBER)										
31.	LPT LAST TWO STAGE BLADE DETAILS: a) BLADE HEIGHT b) ROOT DIAMETER c) PITCH DIAMTER d) TIP DIAMETER	mm mm mm mm	<table><tr><td>LAST STAGE</td><td>LAST BUT ONE STAGE</td></tr><tr><td>914.4</td><td>598</td></tr><tr><td>1676.4</td><td>1778</td></tr><tr><td>2590.8</td><td>2376</td></tr><tr><td>3505.2</td><td>2974</td></tr></table>	LAST STAGE	LAST BUT ONE STAGE	914.4	598	1676.4	1778	2590.8	2376	3505.2	2974
LAST STAGE	LAST BUT ONE STAGE												
914.4	598												
1676.4	1778												
2590.8	2376												
3505.2	2974												
32.	RADIAL CLEARANCE OF EACH BEARING	mm	BRG.DIA.x1.3/1000										
33.	TYPE OF BARRING GEAR (HYDRAULIC/MOTORISED)		MOTORISED										
34.	BARRING SPEED	rpm	4										
35.	CRITICAL SPEED	rpm	HPT-2250 IPT-1890 LPTA-1720 LPTB-1750 GEN-900										
36.	STEAM ADMISSION FULL OR PARTIAL ARC TYPE		FULL ARC										
37.	NO. OF MSV AND TYPE		02 & POPET TYPE										
38.	NO. OF MCV AND TYPE		02 & VENTURI TYPE										
39.	NO. OF OLV AND TYPE		01 & POPET										
40.	NO. OF IPSV AND TYPE		02 & POPET TYPE										
41.	NO. OF ICV AND TYPE		02 & VENTURI TYPE										
42.	HP CASING TYPE (BARREL TYPE OR HORIZONTALLY SPLIT)		HORIZONTALLY SPLIT										
43.	HIP CASING TYPE (BARREL TYPE OR HORIZONTALLY SPLIT)		NA										
44.	IP CASING TYPE (BARREL TYPE OR HORIZONTALLY SPLIT)		HORIZONTALLY SPLIT										
45.	LP CASING TYPE (BARREL TYPE OR HORIZONTALLY SPLIT)		HORIZONTALLY SPLIT										
46.	LP TURBINE BURSTING DIAPHRAGM a) Number b) Diameter c) Material d) Reliving Capacity e) Bursting Set Pressure	mm  t/h Kg/cm2(a)	02 per CASING 1157 COPPER 470 1.38										
47.	WHETHER LPT LAST STAGE BLADE VIBRATION MONITORING SYSTEM PROVIDED.		NO										
TURBINE LUBE OIL SYSTEM													
1.	MAIN OIL PUMP (MOTOR/SHAFT DRIVEN)		MOTOR DRIVEN										
2.	NO. OF MOP & CAPACITY		2x100% & 5100 l/min										
3.	MOP DIS. PR. AND SPEED		7.7 Kg/cm2 (g) & 3000rpm										
4.	NO. OF AOP		NA										
5.	NO. OF EOP & CAPACITY		1x100% & 4164 l/min										
6.	EOP DIS. PR. AND SPEED		2.75 Kg/cm2 (g) & 1750rpm										
7.	LUBE OIL PRESSURE (AT TURBINE C/L)	Kg/cm2(a)	1.8										
8.	NO. OF JOP(AC/DC)		1x100% AC & 1x100% DC										
9.	JOP (BOTH DC &AC) CAPACITY, DIS. PR. AND SPEED		34.2 l/min, 246Kg/cm2 (g), 1500rpm (AC) & 1750rpm (DC)										
10.	TYPE OF LUBE OIL		ISO VG 32										
11.	TYPE OF COOLER		PHE TYPE										
12.	LUBE OIL TANK CAPACITY (NORMAL/MAXIMUM)	Lit	40000/58000										
13.	NORMAL TANK LEVEL	mm	920 from Top of Tank										
14.	TANK LEVEL HI/LO	mm	820/1020 From Top of Tank										

15.	TYPE OF PURIFIER PROVIDED		COALESCER TYPE
16.	NORMAL LUBE OIL TEMPERATURE	Deg.C	43-49
GOVERNING SYSTEM & CONTROL OIL SYSTEM			
1.	TYPE OF GOVERNING		D-EHC TYPE THROTTLE GOVERNING (HP GOV.)
2.	GOVERNING OIL PRESSURE	Kg/cm2(g)	167
3.	MAKE		TOSHIBA CORPORATION, JAPAN
4.	DEAD BAND OF THE GOVERNOR		0%
5.	RANGE OF REGULATION		5% (ADJUSTABLE BETWEEN 3% - 8%)
6.	TYPE OF GOVERNING OIL		QUINTOLUBRIC 888-46
7.	CONTROL OIL TANK CAPACITY (NORMA/MAXIMUM)	lit	1000/2000
8.	DIFFERENT TANK LEVELS (NORMAL/HI/LO)	mm	500/600/400/ from Tank Bottom
9.	NO. OF OIL PUMP AND TYPE		2x100% AXIAL PISTON TYPE
10.	PUMP CAPACITY, DIS. PR. & SPEED		160 l/min, 169 Kg/cm2(g) & 970rpm
11.	CONTROL OIL PURIFIER DETAILS		MAKE: PALL (HOUSING) & PARKER (ELEMENT) TYPE: COALESCER TYPE
12.	PURIFIER PUMP DETAILS		NO. – 2x100% TYPE – Gear Type CAPACITY – 45 l/min DIS. PR. -5.1 Kg/cm2 (g)

## Main Stop Valve / Control Valve – Steam Flow



## Combined Reheat Valve - Sectional Schematics

### RSV

With bypass valve

Seat Diameter : 762 mm (30")  
 Bypass Valve Stroke : 20 mm  
 Valve Stroke : 234 mm  
 Total Stroke : 254 mm

### RSV Actuator

Servo Controlled, Single Acting,  
 Spring return (Fail to Close)

Piston Diameter : 240 mm  
 Rod Diameter : 95 mm  
 CEOT : 10 mm

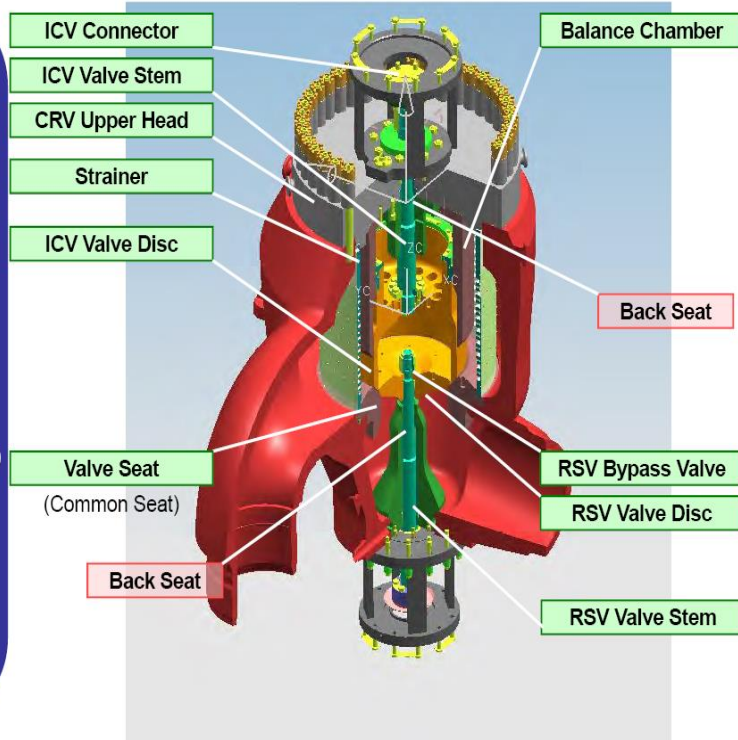
### ICV

Seat Diameter : 876.3 mm (34.5")  
 Valve Stroke : 216 mm

### ICV Actuator

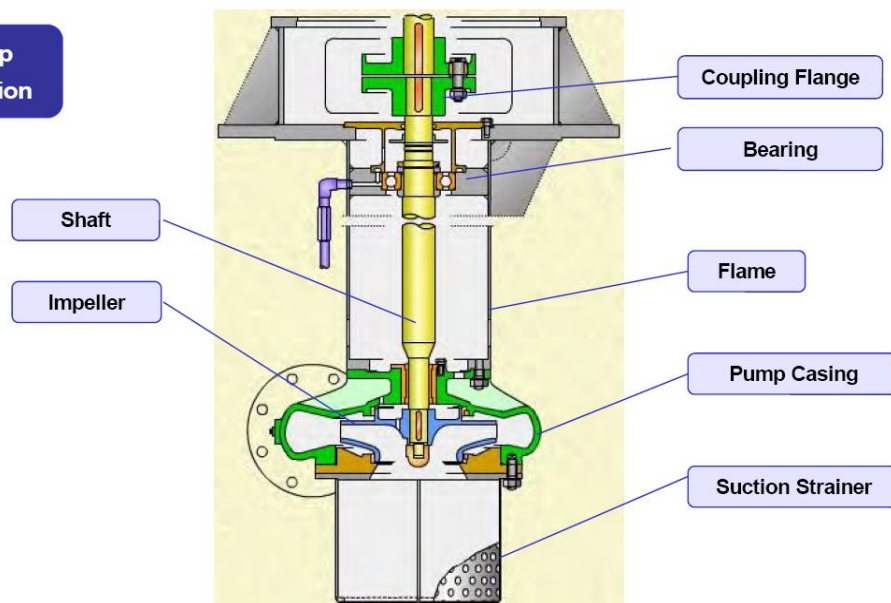
Servo Controlled, Single Acting,  
 Spring return (Fail to Close)

Piston Diameter : 240 mm  
 Rod Diameter : 95 mm  
 CEOT : 10 mm



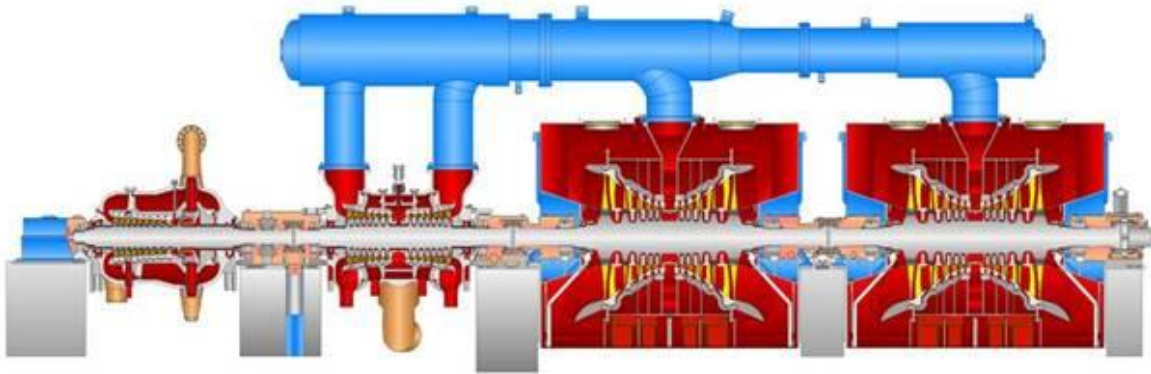
## Lube Oil System – MOP & EOP Assembly Drawing

Centrifugal pump  
 Vertical installation



*Typical Assembly Drawing  
 For MOP & EOP*

**LARA SUPER THERMAL POWER PROJECT STAGE-I (2x800MW)**



**TYPICAL CONFIGURATION OF TG UNIT OF LARA-I (2X800MW)**

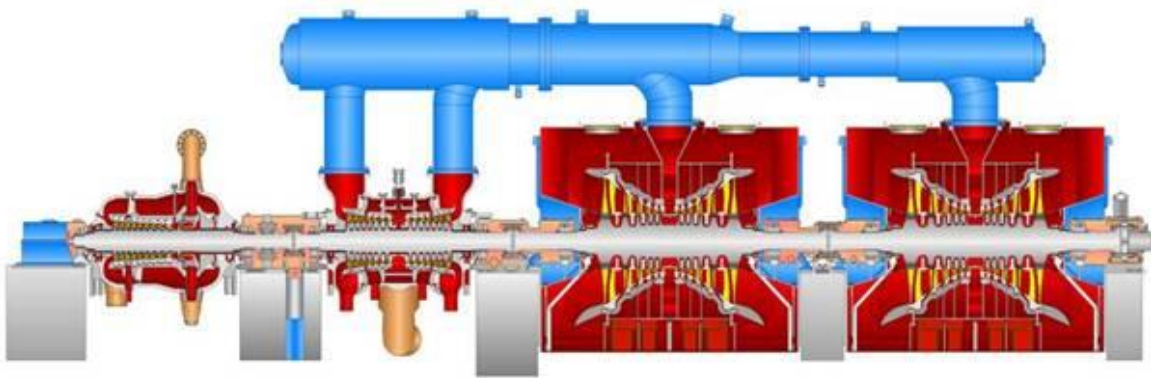
SL. NO.	ATTRIBUTES	UNIT	VALUE
CYCLE PARAMETERS:			
1.	MAIN STEAM PRESSURE	Kg/cm2(a)	247
2.	MAIN STEAM TEMPERATURE	Deg.C	565
3.	REHEAT STEAM TEMPERATURE	Deg.C	593
4.	NO. OF REHEATS		01
5.	DESIGN BACK PRESSURE	mmHg (a)	77
6.	FINAL FEED WATER TEMPERATURE	Deg.C	284.6
7.	GURANTEED HEAT RATE AT TMCR	Kcal/KWH	1829
8.	GURANTEED HEAT RATE AT TMCR 105% OF TMCR	Kcal/KWH	1834
9.	GURANTEED VACUUM	mmHg (a)	66.8
10.	COLD START UP PARAMETERS (MS Pr. /MS Temp. /HRH Temp.)	ata/Deg.C/ Deg.C	98.8/370/320
11.	TOTAL COLD START UP TIME	min	600
MAIN TURBINE			
1.	MAKE		HITACHI, JAPAN
2.	COMBINED HP-IP		NO
3.	DOUBLE LP TURBINE		YES
4.	NO. OF TURBINE CYLINDERS		4
5.	NO. OF CASING IN HPT		02
6.	NO. OF CASING IN HP-IP		NA
7.	NO. OF CASING IN IPT		02
8.	NO. OF CASING IN LPT		02
9.	TYPE OF TURBINE INSULATION		CERAMIC FIBRE ROCKWOOL
10.	ACOUSTIC ENCLOSURE PROVIDED OR NOT		YES
11.	LPT EXHAUST DOWNWARD /AXIAL		DOWNWARD
12.	NO. OF EXTRACTION		9
13.	TYPE OF HPT (SINGLE/DOUBLE FLOW)		SINGLE
14.	TYPE OF IPT (SINGLE/DOUBLE FLOW)		DOUBLE
15.	TYPE OF LPT (SINGLE/DOUBLE FLOW)		DOUBLE
16.	COMPOUNDING (TANDEM/CROSS)		TANDEM
17.	BEARING SPAN (HP/HIP/IP/LP)	mm	5750/-/6150/5500/5500
18.	ROTOR DESIGN (WELDED/ONE PIECE FORGED)		HP- ONE PIECE FORGED IP- ONE PIECE FORGED LP- ONE PIECE FORGED
19.	TYPE OF GLAND SEALS		SPRING BACKED LABYRINTH TYPE
20.	HPT MODULE NO.		-
21.	HIP MODULE NO.		NA
22.	IPT MODULE NO.		-
23.	LPT MODULE NO.		TC4F33.5
24.	NO. AND TYPE OF TURBINE BEARING		01 THRUST BEARING 10 JOURNAL BEARING
25.	NO. OF HP TURBINE BLADES		11 (ALL IMPULSE TYPE)
26.	NO. OF HIP TURBINE BLADES		NA
27.	NO. OF IP TURBINE BLADES		8x2 (ALL IMPULSE TYPE)
28.	NO. OF LP TURBINE BLADES		7x2x2 ((ALL IMPULSE TYPE)
29.	LPT LAST STAGE BLADE TYPE		SHROUDED
30.	LPT LAST TWO STAGE BLADE DETAILS:		LAST STAGE      LAST BUT ONE STAGE
	a) BLADE HEIGHT	mm	856              492.3
	b) ROOT DIAMETER	mm	1676.4          1676.4
	c) PITCH DIAMTER	mm	2532.4          2168.7
	d) TIP DIAMETER	mm	3388.4          2661
31.	RADIAL CLEARANCE OF EACH BEARING	mm	1# 0.52          5# 1.26 2# 0.55          6# 1.32

			3# 0.55      7# 1.32 4# 0.63      8#1.79
32.	TYPE OF BARRING GEAR (HYDRAULIC/MOTORISED)		MOTORISED
33.	BARRING SPEED	rpm	2.8
34.	CRITICAL SPEED	rpm	HPT-1890 IPT-1810 LPTA-2100 LPTB-2150 GEN-910
35.	STEAM ADMISSION FULL OR PARTIAL ARC TYPE		FULL ARC
36.	NO. OF MSV		02
37.	NO. OF MCV		02
38.	NO. OF OLV		01
39.	NO. OF IPSV		02
40.	NO. OF ICV		02
41.	STAGE EFFICIENCIES		
42.	HP CASING TYPE (BARREL TYPE OR HORIZONTALLY SPLIT)		HORIZONTALLY SPLIT
43.	HIP CASING TYPE (BARREL TYPE OR HORIZONTALLY SPLIT)		NA
44.	IP CASING TYPE (BARREL TYPE OR HORIZONTALLY SPLIT)		HORIZONTALLY SPLIT
45.	LP CASING TYPE (BARREL TYPE OR HORIZONTALLY SPLIT)		HORIZONTALLY SPLIT
46.	LP TURBINE BURSTING DIAPHRAGM a) <i>Number</i> b) <i>Diameter</i> c) <i>Material</i> d) <i>Reliving Capacity</i> e) <i>Bursting Set Pressure</i>	mm  m3/sec Kg/cm2(a)	02 per CASING 1066.8 COPPER 376 1.3
47.	WHETHER LPT LAST STAGE BLADE VIBRATION MONITORING SYSTEM PROVIDED.		NO
TURBINE LUBE OIL SYSTEM			
1.	MAIN OIL PUMP (MOTOR/SHAFT DRIVEN)		MOTOR DRIVEN
2.	NO. OF MOP & CAPACITY		2x100% & 7120 l/min
3.	MOP DIS. PR. AND SPEED		6.2 atg. & 3000rpm
4.	NO. OF AOP		NA
5.	NO. OF EOP & CAPACITY		1x100% & 5500 l/min
6.	EOP DIS. PR. AND SPEED		2.1 atg. & 1750rpm
7.	NO. OF JOP(AC/DC)		1x100% AC & 1x100% DC
8.	JOP (BOTH DC & AC) CAPACITY, DIS. PR. AND SPEED		50 l/min, 170 atg. 1500rpm
9.	TYPE OF LUBE OIL		ISO VG 32
10.	TYPE OF COOLER		PHE TYPE
11.	LUBE OIL TANK CAPACITY (NORMAL/MAXIMUM)	lit	48500/70500
12.	NORMAL TANK LEVEL	mm	899 from Top of Tank
13.	TANK LEVEL HI/LO	mm	799/999 From Top of Tank
14.	TYPE OF PURIFIER PROVIDED		COALESCER TYPE
15.	NORMAL LUBE OIL TEMPERATURE	Deg.C	46
GOVERNING SYSTEM & CONTROL OIL SYSTEM			
1.	TYPE OF GOVERNING		D-EHC TYPE THROTTLE GOVERNING (HP GOV.)



2.	GOVERNING OIL PRESSURE	Kg/cm2(g)	163
3.	MAKE		HITACHI, JAPAN
4.	DEAD BAND OF THE GOVERNOR		+/-0.06%
5.	RANGE OF REGULATION		4% (ADJUSTABLE BETWEEN 4% - 6%)
6.	TYPE OF GOVERNING OIL		FYRQUEL(VG46)
7.	CONTROL OIL TANK CAPACITY (NORMA/MAXIMUM)	lit	1000/1700
8.	NO. OF OIL PUMP AND TYPE		2x100% AXIAL PISTON TYPE
9.	PUMP CAPACITY, DIS. PR. & SPEED		100 l/min, 163 Kg/cm2(g) & 1500rpm
10.	PURIFIER PUMP DETAILS		NO. – 2x100% TYPE – Gear Type CAPACITY – 2.4 l/min DIS. PR. -5.0 atg.

**GADARWARA SUPER THERMAL POWER PROJECT STAGE-I (2x800MW)**



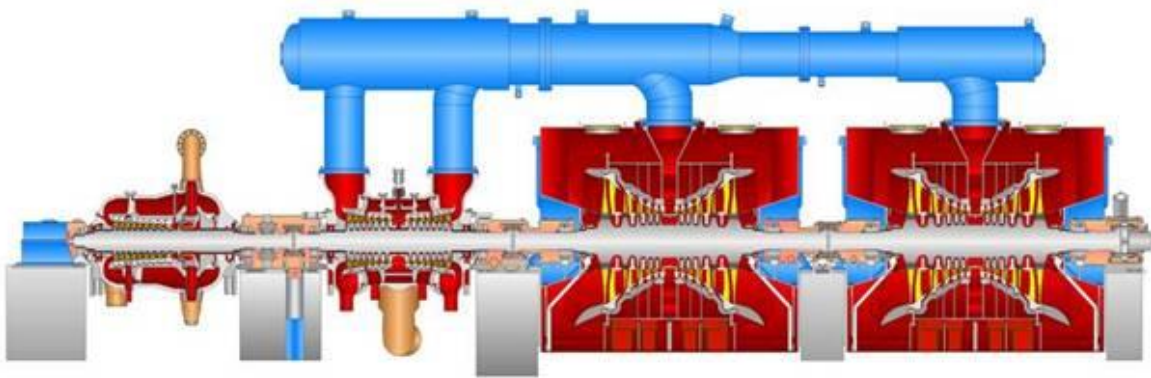
**TYPICAL CONFIGURATION OF TG UNIT OF GADARWARA (2X800MW)**

SL. NO.	ATTRIBUTES	UNIT	VALUE
CYCLE PARAMETERS:			
1.	MAIN STEAM PRESSURE	Kg/cm2(a)	247
2.	MAIN STEAM TEMPERATURE	Deg.C	565
3.	REHEAT STEAM TEMPERATURE	Deg.C	593
4.	NO. OF REHEATS		01
5.	DESIGN BACK PRESSURE	mmHg (a)	LP-69,HP-85,Avg.77
6.	FINAL FEED WATER TEMPERATURE	Deg.C	290
7.	GURANTEED HEAT RATE AT TMCR	Kcal/KWH	1832
8.	GURANTEED HEAT RATE AT TMCR 105% OF TMCR	Kcal/KWH	1829.8
9.	GURANTEED VACUUM	mmHg (a)	77
10.	COLD START UP PARAMETERS (MS Pr. /MS Temp. /HRH Temp.)	ata/Deg.C/ Deg.C	97/390/390
11.	TOTAL COLD START UP TIME	min	300
MAIN TURBINE			
1.	MAKE		SIEMENS, GERMANY
2.	COMBINED HP-IP		NO
3.	DOUBLE LP TURBINE		YES
4.	NO. OF TURBINE CYLINDERS		4
5.	NO. OF CASING IN HPT		02
6.	NO. OF CASING IN HP-IP		NA
7.	NO. OF CASING IN IPT		02
8.	NO. OF CASING IN LPT		02
9.	TYPE OF TURBINE INSULATION		SPRAY AS WELL AS ROCK WOOL PADS/BLANKET
10.	ACOUSTIC ENCLOSURE PROVIDED OR NOT		YES
11.	LPT EXHAUST DOWNWARD /AXIAL		DOWNWARD
12.	NO. OF EXTRACTION		9
13.	TYPE OF HPT (SINGLE/DOUBLE FLOW)		SINGLE
14.	TYPE OF IPT (SINGLE/DOUBLE FLOW)		DOUBLE
15.	TYPE OF LPT (SINGLE/DOUBLE FLOW)		DOUBLE
16.	COMPOUNDING (TANDEM/CROSS)		TANDEM
17.	BEARING SPAN (HP/HIP/IP/LP)	mm	4865/-/6075/6925/6925
18.	ROTOR DESIGN (WELDED/ONE PIECE FORGED)		HP- ONE PIECE FORGED IP- ONE PIECE FORGED LP- ONE PIECE FORGED
19.	TYPE OF GLAND SEALS		SPRING BACKED LABYRINTH TYPE
20.	HPT MODULE NO.		HP70-V4
21.	HIP MODULE NO.		NA
22.	IPT MODULE NO.		I60-V2
23.	LPT MODULE NO.		-
24.	NO. AND TYPE OF TURBINE BEARING		01 NO. TILTING PAD TYPE THRUST BEARING 07 NOS JOURNAL BEARING
25.	NO. OF HP TURBINE BLADES		18 (ALL REACTION TYPE)
26.	NO. OF HIP TURBINE BLADES		NA
27.	NO. OF IP TURBINE BLADES		15x2 (ALL REACTION TYPE)
28.	NO. OF LP TURBINE BLADES		7x2x2 (ALL REACTION TYPE)
29.	LPT LAST STAGE BLADE TYPE		FREE STANDING
30.	LPT LAST TWO STAGE BLADE DETAILS:		LAST STAGE      LAST BUT ONE STAGE
	a) BLADE HEIGHT	mm	1021.4      644.75
	b) ROOT DIAMETER	mm	1630      1660
	c) PITCH DIAMTER	mm	2538.8      2244
	d) TIP DIAMETER	mm	3458.4      2178.4

31.	RADIAL CLEARANCE OF EACH BEARING	mm	1# 0.35, 2# 0.54, 3#0.68, 4#0.75, 5#0.75 (VERTICAL) 1# 0.40, 2# 0.61, 3#0.46, 4#0.51, 5#0.50 (HORIZONTAL)
32.	TYPE OF BARRING GEAR (HYDRAULIC/MOTORISED)		HYDRAULIC
33.	BARRING SPEED	rpm	60
34.	CRITICAL SPEED	rpm	HPT-1602 IPT-1962 LPTA-1620 LPTB-1572 GEN-750
35.	STEAM ADMISSION FULL OR PARTIAL ARC TYPE		FULL ARC
36.	NO. OF MSV		02
37.	NO. OF MCV		02
38.	NO. OF OLV		01
39.	NO. OF IPSV		02
40.	NO. OF ICV		02
41.	HP CASING TYPE (BARREL TYPE OR HORIZONTALLY SPLIT)		VERTICALLY SPLIT
42.	HIP CASING TYPE (BARREL TYPE OR HORIZONTALLY SPLIT)		NA
43.	IP CASING TYPE (BARREL TYPE OR HORIZONTALLY SPLIT)		HORIZONTALLY SPLIT
44.	LP CASING TYPE (BARREL TYPE OR HORIZONTALLY SPLIT)		HORIZONTALLY SPLIT
45.	LP TURBINE BURSTING DIAPHRAGM a) <i>Number</i> b) <i>Diameter</i> c) <i>Material</i> d) <i>Bursting Set Pressure</i>	mm Kg/cm2(a)	01 per CASING 800 1.4301+TEFLON+1.4301 1.4
46.	WHETHER LPT LAST STAGE BLADE VIBRATION MONITORING SYSTEM PROVIDED.		NO
TURBINE LUBE OIL SYSTEM			
1.	MAIN OIL PUMP (MOTOR/SHAFT DRIVEN)		MOTOR DRIVEN
2.	NO. OF MOP & CAPACITY		2x100% & 59 lps
3.	MOP DIS. PR. AND SPEED		6.2 bar (g) & 3000rpm
4.	NO. OF AOP		NA
5.	NO. OF EOP & CAPACITY		1x100% & 59 lps
6.	EOP DIS. PR. AND SPEED		2.6 bar (g) & 3000rpm
7.	NO. OF JOP(AC/DC)		1x100% AC & 1x100% DC
8.	JOP (BOTH DC & AC) CAPACITY, DIS. PR. AND SPEED		3.07 lps, 175 bar (g), 1470rpm (AC) & 1750rpm (DC)
9.	TYPE OF LUBE OIL		ISO VG 46
10.	TYPE OF COOLER		SHELL & TUBE TYPE
11.	LUBE OIL TANK CAPACITY (NORMAL/MAXIMUM)	Lit	32000/45000
12.	NORMAL TANK LEVEL	mm	510 from Top of Tank
13.	TANK LEVEL HI/LO	mm	470/550 From Top of Tank
14.	TYPE OF PURIFIER PROVIDED		CENTRIFUGE TYPE
15.	NORMAL LUBE OIL TEMPERATURE	Deg.C	50
GOVERNING SYSTEM & CONTROL OIL SYSTEM			
1.	TYPE OF GOVERNING		D-EHC TYPE THROTTLE GOVERNING (HP GOV.)

2.	GOVERNING OIL PRESSURE	Kg/cm2(g)	160
3.	MAKE		SIEMENS, GERMANY
4.	DEAD BAND OF THE GOVERNOR		0.06%
5.	RANGE OF REGULATION		5% (ADJUSTABLE BETWEEN 3% - 8%)
6.	TYPE OF GOVERNING OIL		TRIXYLENYL PHOSPHATE ESTER
7.	CONTROL OIL TANK CAPACITY (NORMAL)	lit	1000
8.	DIFFERENT TANK LEVELS (NORMAL/HI/LO)	mm	150/80/265 from Tank Top
9.	NO. OF OIL PUMP AND TYPE		2x100% AXIAL PISTON TYPE
10.	PUMP CAPACITY, DIS. PR. & SPEED		62 l/min, 160 bar (g) & 1500rpm
11.	CONTROL OIL PURIFIER DETAILS		MAKE: Amberlist A21 Molecular Sieve A1/8 TYPE: REGENERATING UNIT
12.	PURIFIER PUMP DETAILS		NO. – 2x100% CAPACITY – 0.021-0.024 m3/h

**TELANGANA SUPER THERMAL POWER PROJECT PHASE-I (2x800MW)**



**TYPICAL CONFIGURATION OF TG UNIT OF TELANGANA PHASE-I (2X800MW)**

SL. NO.	ATTRIBUTES	UNIT	VALUE
CYCLE PARAMETERS:			
1.	MAIN STEAM PRESSURE	Kg/cm2(a)	270
2.	MAIN STEAM TEMPERATURE	Deg.C	600
3.	REHEAT STEAM TEMPERATURE	Deg.C	600
4.	NO. OF REHEATS		01
5.	DESIGN BACK PRESSURE	mmHg (a)	Avg.77
6.	FINAL FEED WATER TEMPERATURE	Deg.C	305
7.	GURANTEED HEAT RATE AT TMCR	Kcal/KWH	1776
8.	GURANTEED HEAT RATE AT TMCR 105% OF TMCR	Kcal/KWH	1772.8
9.	GURANTEED VACUUM	mmHg (a)	63.73
10.	COLD START UP PARAMETERS (MS Pr. /MS Temp. /HRH Temp.)	ata/Deg.C/ Deg.C	108/400/390
11.	TOTAL COLD START UP TIME	min	240
MAIN TURBINE			
1.	MAKE		GE
2.	COMBINED HP-IP		NO
3.	DOUBLE LP TURBINE		YES
4.	NO. OF TURBINE CYLINDERS		4
5.	NO. OF CASING IN HPT		02
6.	NO. OF CASING IN HP-IP		NA
7.	NO. OF CASING IN IPT		02
8.	NO. OF CASING IN LPT		02
9.	TYPE OF TURBINE INSULATION		MINERAL WOOL SPRAY
10.	ACOUSTIC ENCLOSURE PROVIDED OR NOT		NO
11.	LPT EXHAUST DOWNWARD /AXIAL		DOWNWARD
12.	NO. OF EXTRACTION		9
13.	TYPE OF HPT (SINGLE/DOUBLE FLOW)		SINGLE
14.	TYPE OF IPT (SINGLE/DOUBLE FLOW)		DOUBLE
15.	TYPE OF LPT (SINGLE/DOUBLE FLOW)		DOUBLE
16.	COMPOUNDING (TANDEM/CROSS)		TANDEM
17.	BEARING SPAN (HP/HIP/IP/LP)	mm	5177/-/7368/5230/5230
18.	ROTOR DESIGN (WELDED/ONE PIECE FORGED)		HP- TWO FORGED PIECES WELDED TOGETHER IP- TWO FORGED PIECES WELDED TOGETHER LP- ONE PIECE FORGED
19.	TYPE OF GLAND SEALS		SPRING BACKED LABYRINTH TYPE
20.	HPT MODULE NO.		HD4
21.	HIP MODULE NO.		NA
22.	IPT MODULE NO.		MD5
23.	LPT MODULE NO.		ND37
24.	NO. AND TYPE OF TURBINE BEARING		01 NO. TILTING PAD TYPE THRUST BEARING 07 NOS JOURNAL BEARING
25.	NO. OF HP TURBINE BLADES		22 (ALL REACTION TYPE)
26.	NO. OF HIP TURBINE BLADES		NA
27.	NO. OF IP TURBINE BLADES		20x2 (ALL REACTION TYPE)
28.	NO. OF LP TURBINE BLADES		5x2x2 (ALL REACTION TYPE)
29.	LPT LAST STAGE BLADE TYPE		SHROUDED (WITH SNUBBER)
30.	LPT LAST TWO STAGE BLADE DETAILS:		LAST STAGE      LAST BUT ONE STAGE
	a) BLADE HEIGHT	mm	893              521.5
	b) ROOT DIAMETER	mm	1540             1614
	c) PITCH DIAMTER	mm	2440             2145

	d) TIP DIAMETER	mm	3339.88 2675.64
31.	RADIAL CLEARANCE OF EACH BEARING	mm	0.25 TO 1.484
32.	TYPE OF BARRING GEAR (HYDRAULIC/MOTORISED)		MOTORISED
33.	BARRING SPEED	rpm	16
34.	CRITICAL SPEED	rpm	HPT-1987 IPT-1279 LPTA-1607 LPTB-1666
35.	STEAM ADMISSION FULL OR PARTIAL ARC TYPE		FULL ARC
36.	NO. OF MSV		02
37.	NO. OF MCV		02
38.	NO. OF OLV		02
39.	NO. OF IPSV		02
40.	NO. OF ICV		02
41.	HP CASING TYPE (BARREL TYPE OR HORIZONTALLY SPLIT)		HORIZONTALLY SPLIT
42.	HIP CASING TYPE (BARREL TYPE OR HORIZONTALLY SPLIT)		NA
43.	IP CASING TYPE (BARREL TYPE OR HORIZONTALLY SPLIT)		HORIZONTALLY SPLIT
44.	LP CASING TYPE (BARREL TYPE OR HORIZONTALLY SPLIT)		HORIZONTALLY SPLIT
45.	LP TURBINE BURSTING DIAPHRAGM a) Number b) Diameter c) Material  d) Reliving Capacity e) Bursting Set Pressure	mm  Kg/s Kg/cm2(a)	01 per CASING DN600 PTFE embedded between Inconel 600 alloy 31 1.5
46.	WHETHER LPT LAST STAGE BLADE VIBRATION MONITORING SYSTEM PROVIDED.		NO
TURBINE LUBE OIL SYSTEM			
1.	MAIN OIL PUMP (MOTOR/SHAFT DRIVEN)		SHAFT DRIVEN
2.	NO. OF MOP & CAPACITY		1x100% & 62.77 lps
3.	AOP DIS. PR. AND SPEED		0.45 Mpa(g) & 1023.5rpm
4.	NO. OF AOP & CAPACITY		2X100% & 222.1 m3/h
5.	AOP DIS. PR. AND SPEED		54.1m & 1485rpm
6.	NO. OF EOP & CAPACITY		1x100% & 88.9 m3/h
7.	EOP DIS. PR. AND SPEED		1.3 bar (g) & 1450rpm
8.	NO. OF JOP(AC/DC)		1x100% AC & 1x100% DC
9.	JOP (BOTH DC & AC) CAPACITY, DIS. PR. AND SPEED		63 l/min, 260 bar (g), 1475rpm (AC) & 1450rpm (DC)
10.	TYPE OF LUBE OIL		ISO VG 46
11.	TYPE OF COOLER		PHE TYPE
12.	LUBE OIL TANK CAPACITY (NORMAL/MAXIMUM)	Lit	40000/44000
13.	NORMAL TANK LEVEL	mm	360 from Top of Tank
14.	TANK LEVEL HI/LO	mm	170/940 From Top of Tank
15.	TYPE OF PURIFIER PROVIDED		COALESCER TYPE
16.	NORMAL LUBE OIL TEMPERATURE	Deg.C	45
GOVERNING SYSTEM & CONTROL OIL SYSTEM			
1.	TYPE OF GOVERNING		D-EHC TYPE THROTTLE GOVERNING



2.	GOVERNING OIL PRESSURE	bar(g)	42
3.	MAKE		ALSPA
4.	DEAD BAND OF THE GOVERNOR		0.06%
5.	RANGE OF REGULATION		3% -8%
6.	TYPE OF GOVERNING OIL		FYRQUEL
7.	CONTROL OIL TANK CAPACITY	lit	2200
8.	DIFFERENT TANK LEVELS (NORMAL/HI/LO)	mm	291/196/386 from Tank Top
9.	NO. OF OIL PUMP AND TYPE		2x100% AXIAL PISTON TYPE 2x100% AXIAL PISTON TYPE 2x100% AXIAL PISTON TYPE (PRIMARY CIRCUIT) 2x100% AXIAL PISTON TYPE (SECONDARY CIRCUIT)
10.	PUMP CAPACITY, DIS. PR. & SPEED		210 l/min, 42 bar(g) & 1500rpm 150 l/min, 42 bar(g) & 1500rpm 108 l/min, 42 bar(g) & 1500rpm (PRIMARY CIRCUIT)
11.	CONTROL OIL PURIFIER DETAILS		MAKE: M/s CJC TYPE: ION EXCHANGE TYPE
12.	PURIFIER PUMP DETAILS		NO. – 2x100% CAPACITY – 180 l/min