

	<p style="text-align: center;">SCOPE OF WORK (SOW)</p>	<p style="text-align: center;">TURBO GEN SERVICES (TGS)</p>
---	--	---

Title: Valves Services Outage and Maintenance

Unique Identifier: N/A

Scope of work

Alternative Reference No.: N/A

Area of Applicability: Eskom Rotek

Industries (ERI) SOC Ltd.

Document Type: Scope of Work (SOW)

Revision: 0

Total No. of Pages: 353

Next Review Date: N/A

Classification: **Controlled Disclosure**

Compiled by:



Calvin Reddy (Date: 05/01/2026)

Valves Group Manager

Supported by:

pp 

Reinaldo Da Veiga (Date: 05/01/2026)

Engineering Manager

Approved by:

 T.G Mabelane

Kagiso Voyi (Date: 05/01/2026)

Projects Service Manager

Table of Contents

1 OBJECTIVES 3

2 SCOPE OF SERVICES 3

 SITE INFORMATION 3

 PRE – OUTAGE ACTIVITIES 4

OUTAGE AND MAINTENANCE SCOPE OF WORK.....5

GENERAL REQUIREMENTS 340

 QUALITY 344

 EXPERIENCE OF STAFF 344

 SPARES 344

 DOCUMENTATION 345

RESPONSIBILITIES DURING OUTAGES 345

 PROVIDE A QUALITY ENGINEERING SERVICE..... 347

 COMPLY WITH SAFETY HEALTH ENVIRONMENT AND QUALITY REQUIREMENTS 347

ERI TGS SERVICES..... 348

MINIMUM QUALIFICATION REQUIREMENTS..... 348

MINIMUM EXPERIENCE REQUIREMENTS 349

MINIMUM TRAINING REQUIREMENTS 349

SHEQ REQUIREMENTS 351

KEY DELIVERABLES 352

1 Objectives

The objective of this document is to outline the services that are required from turbo generator maintenance companies to service the Eskom Power Stations. It seeks to ensure that the proposed services required are executed in a planned and structured manner, and that all quality requirements during disassembly, inspection, refurbishment and reassembly are met. These include Outage preparation activities in the pre-outage deliverables, spares and resource identification, quality management, efficient outage execution, plant reliability and determination of refurbishment scope. The processes should ensure that the outage due dates are met, spares are readily available and serviceable, refurbishment scope is clear and executed efficiently, plant is commissioned and continues to operate until the next maintenance cycle. All scope needs to be executed well within the full outage duration, which must not exceed a period of 50 calendar days.

2 Scope of services

The Service provider's services are limited to the Eskom power stations and limited to the turbine valves, boiler valves and some auxiliary plants (site dependent). The required services are engineering and maintenance services to the projects and maintenance sections of the valves services department. The scope of responsibility includes the overhaul, refurbishment, assembly and commissioning of turbine and boiler valves.

Site Information

The scope entails works to be executed at the following sites for maintenance:

Power Station	No of Units
Arnot	6
Camden	8
Duvha	6
Grootvlei	6
Hendrina	10
Kendal	6
Koeberg	2
Kriel	6
Kusile	6
Majuba	6
Medupi	6
Tutuka	6

Lethabo	6
Matla	6
Matimba	6

The scope entails works to be executed at the following sites for projects:

Type	Power Station	No of Units	
Coal Fired	Arnot	6	
	Camden	8	
	Duvha	6	
	Grootvlei	6	
	Hendrina	10	
	Kendal	6	
	Kriel	6	
	Majuba	6	
	Matimba	6	
	Medupi	6	
	Kusile	6	
	Tutuka	6	
	Lethabo	6	
	Matla	6	
	Koeberg	6	
	Pumped Storage Schemes	Drakensberg	4
		Palmiet	4

Pre – Outage Activities

- Upon receipt of the scope of work, it is the service provider's responsibility to ensure that the scope is clear and executable within the specified durations. The ERI TGS project management will share durations of activities expected to support whole outage durations.

- Highlight recommended scopes of work that was NOT incorporated into the Customer scope of work and report on the risk factors to the Customer
- Identify critical spares requirements and incorporate into the scope of works.
- Verify scope execution methods against ERI prescribed methods for inclusion in the scope of work.
- Advice and guide on best practises to repair, refurbish and rehabilitated through machining of outage components in shortest possible duration to meet outage deadlines.
- Active involvement in the compilation of Project Plans in Primavera
- Develop and review project plans for logics and detail as per scope of work for approval
- Evaluate plant history to assess possible deviation and special conditions for incorporation into the scope and project plan
- Identification and tagging of all valves on the scope of work prior to the unit coming down

OUTAGE AND MAINTENANCE SCOPE OF WORK

A high level description of the outage scopes are as follow:

Arnot Power Station: Boiler Valves, Turbine Valves, Outside Plant and Commissioning – strip, inspect, blue, box and stroke. Estimate scope below for a GO/MGO (subject to change), SOW for outside plant to be discussed with Project Leader (Supply of 5 fitters and 5 general workers), and completion of MMD scope (Supply of 8 fitters and 6 general workers):

ARNOT GO/MGO/IR TURBINE VALVES (246)		
QIP	DESCRIPTION	VV SIZE
	HP HEATER BLED STEAM AND COMMON MOTORISED ISOLATING VALVES	
1	3B BLED STEAM ISOLATING VALVE	200MM
2	*BLED STEAM MOTORISED VALVES	200MM
3	3A BLED STEAM ISOLATING VALVE	200MM
4	4B BLED STEAM ISOLATING VALVE	200MM
5	4A BLED STEAM ISOLATING VALVE	200MM
6	*BLED STEAM MOTORISED VALVES	300MM
7	*BLED STEAM MOTORISED VALVES	200MM
8	5A BLED STEAM ISOLATING VALVE	200MM
9	6B BLED STEAM ISOLATING VALVE	200MM
10	6A BLED STEAM ISOLATING VALVE	200MM
	COMMON BLED STEAM PNRV AND BLED STEAM PNRV'S	
11	*BLED STEAM PNRV'S	200MM

12	*BLED STEAM PNRV'S	200MM
13	*BLED STEAM PNRV'S	200MM
14	*BLED STEAM PNRV'S	200MM
15	*BLED STEAM PNRV'S	200MM
16	5A BLED STEAM ISOLATING VALVE	200MM
17	6B BLED STEAM ISOLATING VALVE	200MM
18	6A BLED STEAM ISOLATING VALVE	200MM
HP HEATER NO. 4 BLED STEAM AND DRAINS PUMP MECHANICAL NRV'S		
19	*HP HEATER DRAINS PUMP A DISCH NRV	200MM
20	*HP HEATER DRAINS PUMP B DISCH NRV	200MM
21	BLED STEAM TO HP HTR 4B NRV	200MM
22	BLED STEAM TO HP HTR 4A NRV	200MM
PRESSURE VESSELS: SAFETY VALVES		
23	SAFETY VALVE HP HTER 3A FEED SIDE	150mm
24	SAFETY VALVE HP HTER 3B FEED SIDE	150mm
25	SAFETY VALVE HP HTER 4A FEED SIDE	150mm
26	SAFETY VALVE HP HTER 4B FEED SIDE	150mm
27	SAFETY VALVE HP HTER 5A FEED SIDE	150mm
28	SAFETY VALVE HP HTER 5B FEED SIDE	150mm
29	SAFETY VALVE HP HTER 6A FEED SIDE	150mm
30	SAFETY VALVE HP HTER 6B FEED SIDE	150mm
31	SAFETY VALVE DA TANK B # 1	250mm
32	SAFETY VALVE DA TANK B # 3	250mm
33	SAFETY VALVE DA TANK B # 4	250mm
34	SAFETY VALVE DA TANK A # 1	450mm
35	SAFETY VALVE DA TANK C # 5	450mm
36	SAFETY VALVE HP HTER 3A STEAM SIDE	350mm
37	SAFETY VALVE HP HTER 3B STEAM SIDE	350mm
38	SAFETY VALVE HP HTER 4A STEAM SIDE	250mm
39	SAFETY VALVE HP HTER 4B STEAM SIDE	250mm
40	SAFETY VALVE HP HTER 5A STEAM SIDE	250mm
41	SAFETY VALVE HP HTER 5B STEAM SIDE	250mm
42	SAFETY VALVE HP HTER 6A STEAM SIDE	180mm
43	SAFETY VALVE HP HTER 6B STEAM SIDE	180mm
CONDENSATE SYSTEM		
B CEP		
44	B CEP SUCTION I/L VALVE 700MM	700MM
45	B CEP DISCHARGE I/L VALVE 300MM	300MM
46	B CEP DISCH DRAIN I/L VALVE 150MM	200MM
47	B CEP FIRST STAGE RECIRC I/ VAVE 100MM	200MM
CONDENSATE ISOLATING VALVES		
48	CLC INLET I/V 350MM	350MM
49	CLC OUTLET I/V 350MM	350MM
50	EMERGENCY MAKE UP INLET CONTROL V/V 250MM	250MM
51	EMERGENCY MAKE UP OUTLET CONTROL V/V 250MM	250MM
52	ANTI FLOODING INLET CONTROL ISOL V/V 300MM	300MM
53	ANTI FLOODING OUTLET CONTROL ISOL V/V 300MM	300MM
54	BIG DUMPING INLET CONTROL VALVE ISOL V/V UNIT 250MM	250MM

55	BIG DUMPING OUTLET CONTROL VALVE ISOL V/V UNIT 250MM	250MM
56	MAKE UP INLET CONTROL I/S VALVE 100MM	100MM
57	MAKE UP INLET CONTROL I/S VALVE 100MM	100MM
58	MAKE UP OUTLET CONTROL I/S VALVE 100MM	100MM
59	MAKE UP OUTLET CONTROL I/S VALVE 100MM	100MM
60	MUT PUMP A SUCTION I/L VALVE 125MM	125MM
61	MUT PUMP B SUCTION I/L VALVE 125MM	125MM
62	MUT PUMP A DISCHARGE I/L VALVE 125MM	125MM
63	MUT PUMP B DISCHARGE I/L VALVE 125MM	125MM
64	MUT PUMP A RECIRC I/L VALVE 40MM	40MM
CONDENSER RECIRC		
65	MUT PUMP B RECIRC I/L VALVE 40MM	40MM
66	5% MAKE UP CONTROL V/V INLET I/V 65MM	65MM
67	5% MAKE UP CONTROL V/V OUTLET I/V 65MM	65MM
68	CONDENSER RECIRC INLET I/V 200MM	200MM
69	CONDENSER RECIRC OUTLET I/V 200MM	200MM
70	CONDENSATE DUMPING MOTORISED ISOL VALVE 150MM	150MM
71	CONDENSATE DUMPING IL V/V BEFORE MOT VALVE 150MM	150MM
72	LP HEATER INLET I/V 350MM	350MM
73	LP HEATER OUTLET I/V 350MM	350MM
74	TAPROGGE BASKETT INLET I/V SOUTH 80MM	80MM
75	TAPROGGE BASKETT INLET I/V NORTH 80MM	80MM
76	TAPROGGE BASKETT OULET I/V SOUTH 80MM	80MM
77	TAPROGGE BASKETT OUTLET I/V NORTH 80MM	80MM
78	TAPROGGE PUMP SUCT IL V/V SOUTH 80MM	80MM
79	TAPROGGE PUMP SUCT IL V/V SOUTH 80MM	80MM
80	TAPROGGE PUMP SUCT IL V/V NORTH 80MM	80MM
81	TAPROGGE PUMP SUCT IL V/V NORTH 80MM	80MM
82	TAPROGGE PUMP DISCH I/V SOUTH 80MM	80MM
83	TAPROGGE PUMP DISCH I/V SOUTH 80MM	80MM
84	TAPROGGE PUMP DISCH I/V NORTH 80MM	80MM
85	TAPROGGE PUMP DISCH I/V NORTH 80MM	80MM
86	T1 BUTTERFLY I/S V/V SOUTH 1800MM	1800MM
87	T1 BUTTERFLY I/S V/V NORTH 1800MM	1800MM
88	T2 BUTTERFLY I/S V/V SOUTH 1800MM	1800MM
89	T2 BUTTERFLY I/S V/V NORTH 1800MM	1800MM
90	T1 DRN TO WASTE I/L V/V NORTH 150MM	150MM
91	T1 DRN TO WASTE I/L V/V SOUTH 150MM	150MM
92	T2 DRN TO WASTE I/L V/V NORTH 150MM	150MM
93	T2 DRN TO WASTE I/L V/V SOUTH 150MM	150MM
94	T1 AUTO AIR RELIEF I/S VALVE NORTH 250MM	250MM
95	T2 AUTO AIR RELIEF I/S VALVE NORTH 250MM	250MM
96	T1 AUTO AIR RELIEF I/S VALVE SOUTH 250MM	250MM
97	T2 AUTO AIR RELIEF I/S VALVE SOUTH 250MM	250MM
98	T1 CW INLET AUTO RELIEF V/V NORTH 250MM	250MM
99	T2 CW INLET AUTO RELIEF V/V NORTH 250MM	250MM
100	T1 CW INLET AUTO RELIEF V/V SOUTH 250MM	250MM
101	T2 CW INLET AUTO RELIEF V/V SOUTH 250MM	250MM
102	T2 NORTH VENT ISOL V/V SOUTH 50MM	50MM

103	T2 SOUTH VENT ISOL V/V SOUTH 50MM	50MM
104	CONDENSOR WATER BOX DRAINS REAR NORTH 50MM	50MM
105	CONDENSOR WATER BOX DRAINS FRONT NORTH 50MM	50MM
106	CONDENSOR WATER BOX DRAINS REAR NORTH 50MM	50MM
107	CONDENSOR WATER BOX DRAINS REAR SOUTH 50MM	50MM
108	CONDENSOR WATER BOX DRAINS FRONT SOUTH 50MM	50MM
109	CONDENSOR WATER BOX VENT FRONT NORTH I/V 50MM	50MM
110	CONDENSOR WATER BOX VENT FRONT REAR NORTH I/V 50MM	50MM
111	CONDENSOR WATER BOX VENT FRONT SOUTH I/V 50MM	50MM
112	CONDENSOR WATER BOX VENT FRONT REAR SOUTH I/V 50MM	50MM
113	CEP MECH SEAL EMERGENCY SEAL WATER I/V 25MM	25mm
114	CEP MECH SEAL WATER I/V 25MM	25mm
115	CEP MECH SEAL WATER I/V 25MM	25mm
116	CPP INLET MOTORISED V/V 350MM	350mm
117	CPP I VESSEL PRESS MOTORISED V/V 350MM	350mm
118	CPP BOOSTER PUMP SUCTION MOTORISED ISOL V/V 350MM	350mm
119	CPP BOOSTER PUMP DISCH MOTORISED ISOL V/V 300MM	300mm
120	CPP RECIRC MOTORISED V/V 250MM	250mm
121	CPP VESSEL SUCTION ISOL V/V 350MM	350mm
122	CPP VESSELS DISCHARGE I/V 300MM	300mm
123	CPP UNIT MOT ISOL V/V 300MM	300mm
124	CPP VESSELS DISCHARGE MOT ISOL V/V 300MM	300mm
125	BALANCE MAIN/V 200MM	200mm
126	CONDENSATE 5% MAKE UP I/V 125MM	150MM
127	CONDENSATE 5% MAKE UP I/V 125MM	150MM
128	CONDENSATE DUMPING LINE MAIN I/V 450MM	450MM
129	CONDENSATE RWFT OUTLET I/V 450MM	450MM
130	RFWT DRN V/V 125MM	150MM
131	CNDS ATMOSPHERIC VENT V/V 25MM	25mm
132	CNDS ATMOSPHERIC VENT V/V 25MM	25mm
	CONDENSATE CONTROL V/V BYPASS V/V	
133	CLC CONTROL V/V BYPASS V/V 350MM	350MM
134	EMERGENCY MAKE UP CONTROL V/V BYPASS V/V 250MM	250MM
135	ANTI FLOODING CONTROL V/V BYPASS V/V 350MM	350MM
136	BIG DUNPING INLET CONTROL ISOL V/V 350MM	350MM
137	MAKE UP INLET CNTRL I/V BYPASS V/V 100MM	100MM
138	MAKE UP OUTLET CNTRL I/V BYPASS V/V 100MM	100MM
139	5% MAKE UP CNTRL V/V BYPASS V/V 125MM	125MM
	NRV	
140	SPRING LOADED V/V BEFORE CLC 200MM	200mm
141	MUT PUMP A DISCHARGE NRV 125MM	125mm
142	MUT PUMP B DISCHARGE NRV 125MM	125mm
143	CPP VESSEL DISCHARGE NRV 300MM	300MM
144	CPP VESSELSUCTION NRV 350MM	350MM
145	A CEP DISCHARGE NRV 400MM	400MM
146	B CEP DISCHARGE NRV 350MM	350MM
	AIR EJECTOR VALVES	
147	MAIN AIR EJECTOR CNTRL V/V INLET I/V 80MM	25MM

148	MAIN AIR EJECTOR CNTRL V/V INLET PRESSURE TRANSMITTER I/V 80MM	25MM
149	MAIN AIR EJECTOR CNTRL V/V OUTLET I/V 80MM	25MM
150	MAIN AIR EJECTOR A LIVE STEAM I/V 80MM	25MM
151	MAIN AIR EJECTOR A 1 ST-STAGE I/V 80MM	25MM
152	MAIN AIR EJECTOR A 1 ST-STAGE PRESSURE TRANSMITTER I/V 80MM	25MM
153	MAIN AIR EJECTOR A 2ND-STAGE I/V 80MM	25MM
154	MAIN AIR EJECTOR A 1 2ND-STAGE PRESSURE TRANSMITTER I/V 25MM	25MM
155	MAIN AIR EJECTOR A OUTLET NRV TO ATMOSPHERE 25MM	25MM
156	MAIN AIR EJECTOR LIVE STEAM CNTRL V/V BYPASS I/V 500MM	15MM
157	MAIN AIR EJECTOR A LIVE STEAM WATER TRAP 80MM	80MM
158	MAIN AIR EJECTOR A CONDENSOR AIR SUCTION I/V 150MM	150MM
159	MAIN AIR EJECTOR A STEAM TRAP 150MM	150MM
160	MAIN AIR EJECTOR B LIVE STEAM V/V 500MM	15MM
161	MAIN AIR EJECTOR B 1ST STAGE I/V 50MM	15MM
162	MAIN AIR EJECTOR B 1ST -STAGE PRESSURE TRANSMITTER I/V 50MM	15MM
163	MAIN AIR EJECTOR B 2ND STAGE I/V50MM	15MM
164	MAIN AIR EJECTOR B 2ND -STAGE PRESSURE TRANSMITTER I/V 50MM	15MM
165	MAIN AIR EJECTOR B OUTLET NRV TO ATMOSPHERE 50MM	50mm
166	MAIN AIR EJECTOR B LIVE STEAM WAER TRAP 50MM	50mm
167	MAIN AIR EJECTOR B CONDENSOR AIR SUCTION I/V 150MM	150mm
168	MAIN AIR EJECTOR B STEAM TRAP 150MM	150mm
169	MAIN AIR EJECTORS SOUTH SIDE CONDENSER AIR SUCTION LINE I/V 50MM	25MM
170	MAIN AIR EJECTORS NORTH SIDE CONDENSER AIR SUCTION LINE I/V 50MM	25MM
171	QUICK START AIR EJECTOR LIVE STEAM SUPPLY I/V 50MM	
172	QUICK START AIR EJECTOR LIVE STEAM PRESSURE CNTRL V/V 50MM	25MM
173	QUICK START AIR EJECTOR LIVE STEAM PRESSURE TRANSMITTER I/V 25MM	15MM
174	QUICK START AIR EJECTOR CONDENSOR AIR SUCTION LINE I/V 50MM	15MM
175	MAIN AIR EJECTORS I/V 80MM	15MM
	FEEDWATER,DA	
	BFPT AND DEA	
176	DA STORAGE TANK A/B/C DRAIN ISOL VALVE	150mm
177	DA STORAGE TANK A/B/C DRAIN ISOL VALVE	150mm
178	DA STORAGE TANK A/B/C DRAIN ISOL VALVE	150mm
179	LIVE STEAM TO DEARATOR CONTROL V/V BYPASS NRV	150mm
180	LIVE STEAM TO DA CONTROL V/V BYPASS ISOL V/V	25MM
181	LIVE STEAM TO DA CONTROL INLET V/V BYPASS	25MM
182	LIVE STEAM TO DA PRESSURE TRANSMITTOR ISOL V/V	25mm
183	LIVE STEAM TO DEARATOR NRV	20MM
184	LIVE STEAM TO DEATATOR CONTROL VALVE OUTLET ISOLATING VALVE	200MM
185	SFPT EXHAUST TO DA MOTORISED VALVE	500MM

186	SFPT EXHAUST TO DA PNRV	500MM
187	SFPT EXHAUST TO ATMOSPHERE MOTORISED VALVE	500MM
188	COLD REHEAT TO DA NRV VALVE	200MM
189	COLD REHEAT TO DA NRV VALVE	200MM
190	COLD REHEAT TO DA NRV VALVE	200MM
191	LP BLED STEAM TO DA MOTORISED ISOLATING VALVE	500MM
192	LP BLED STEAM TO DA MAIN PNRV BEFORE	500MM
193	SFPT BLED STEAM MOTORISED VALVE	300MM
194	SFPT BLED STEAM PNRV	300MM
195	SFPT BLED STEAM MOTORISED BYPASS VALVE	50MM
196	MWF A DRAIN IV	100mm
197	MWF B DRAIN IV	100mm
198	MWF A DRAIN IV	100mm
199	MWF B DRAIN IV	100mm
200	EFP A SUCTION ISOLATING VALVE	350MM
201	EFP B SUCTION ISOLATING VALVE	350MM
202	EFP A DISCHARGE NRV	250MM
203	EFP B DISCHARGE NRV	250MM
204	EFP A LEAK OFF LINE NRV	150MM
205	EFP B LEAK OFF LINE NRV	150MM
206	EFP A LEAK OFF ISOLATING VALVE	150MM
207	EFP B LEAK OFF ISOLATING VALVE	150MM
208	SFPT KSB PUMP LEAK OFF ISOLATING VALVE	250mm
209	SFPT KSB PUMP SUCTION ISOLATING VALVE	250mm
210	SFP KSB P/P DISCHARGE ISOLATING VALVES	250mm
211	SFP KSB P/P DISCHARGE NRV NO 1	250mm
212	SFP KSB P/P DISCHARGE NRV NO 2	250mm
213	SFPT KSB LEAK OFF NRV	150MM
	TURBINE AUXILLIARIES	
	GLAND STEAM SYSTEM	
214	GLAND STEAM SPRAY INLET ISOL V/V	25mm
215	GLAND STEAM SPRAY CONTROL BYPASS ISOL V/V	25mm
	LP HOODSPRAY SYSTEM	
216	GLAND STEAM SUPPLY TO BFPT I/V	100mm
217	GLAND STEAM RETURN FROM BFPT I/V	100mm
218	BFPT GLAND STEAM SUPPLY AND RETURN ORIFICE PLATES (2OFF)	10MM
219	BFPT GLAND STEAM SUPPLY AND RETURN BAROMETIC LOOP	10MM
220	GLAND STEAM RETURN STEAM TRAP	10MM
221	LP HOOD SPRAY NOZZLE MANIFOLD NO 1	NA
222	LP HOOD SPRAY NOZZLE MANIFOLD NO 2	NA
223	LP HOOD SPRAY NOZZLE MANIFOLD NO 3	NA
224	LP HOOD SPRAY NOZZLE MANIFOLD NO 4	NA
225	MAIN TURBINE LIVE STEAM MANIFOLD VALVES	
226	GLAND STEAM I/V	150MM
227	MAIN OIL COOLERS AND ATMOSPHERIC DRAIN	
228	TURBINE ATMOSPHERIC DRAIN VESSELS QUENCHING LINE ISOLATING VALVES	100MM

229	TURBINE ATMOSPHERIC DRAIN VESSELS QUENCHING LINE BYPASS ORIFICE	100MM
230	GLAND STEAM SPRAY INLET ISOL V/V	150MM
231	GLAND STEAM SPRAY CONTROL BYPASS ISOL V/V	25mm
232	GLAND STEAM SPRAY CONTROL V/V INLET STRAINER	50MM
233	MAIN OIL COOLER 1 CW INLET ISOL V/V	200MM
234	MAIN OIL COOLER 2 CW INLET ISOL V/V	200MM
235	MAIN OIL COOLER 3 CW INLET ISOL V/V	200MM
236	MAIN OIL COOLER 1 CW OUTLET ISOL V/V	200MM
237	MAIN OIL COOLER 2 CW OUTLET ISOL V/V	200MM
238	MAIN OIL COOLER 3 CW OUTLET ISOL V/V	200MM
239	TURBINE ATMOSPHERIC DRAIN VESSEL LINE IV	100MM
240	TURBINE ATMOSPHERIC DRAIN VESSEL LINE BYPASS ORIFICE	10MM
241	BFPT OIL COOLER 1 INLET ISOL V/V	200MM
242	BFPT OIL COOLER 2 CW INLET ISOL V/V	200MM
243	BFPT OIL COOLER 3 CW INLET ISOL V/V	200MM
244	BFPT OIL COOLER 1 CW OUTLET ISOL V/V	200MM
245	BFPT OIL COOLER 2 CW OUTLET ISOL V/V	200MM
246	BFPT OIL COOLER 3 CW OUTLET ISOL V/V	200MM

ARNOT GO/MGO/IR BOILER VALVES (226)		
QIP	DESCRIPTION	VV SIZE(mm)
1	CROSS FEED VNTREG V/V	25
2	CROSS FEED VNTMAIN IV	25
3	CROSS FEED IV	127
4	CROSS FEED IV BYP IV	20
5	CROSS FEED MAIN IV	127
6	CROSS FEED MAIN IV BYP IV	20
7	CROSS SPR MAIN IV	127
8	CROSS SPR MAIN IV BYP IV	20
9	CROSS SPR IV BYP IV	32
10	CROSS SPR IV	127
11	CROSS SPR NRV	127
12	S/HTR DC SPRW MOT IV	127
13	S/HTR SPRW DRN REG V/V	32
14	UNIT SPRW IV BYP IV	20
15	UNIT SPRW IV	127
16	UNIT SPRW NRV	127
17	S/HTR SPRW LH C/V	80
18	S/HTR SPRW LH CTRL V/V INL IV	80
19	S/HTR SPRW LH CTRL V/V MAINT DRN IV	32
20	S/HTR SPRW LH CTRL V/V OUT IV	80
21	S/HTR SPRW LH CTRL V/V MAINT DRN IV	32
22	S/HTR SPRW LH C/V BYP IV	80
23	S/HTR PILOT SPRW LH CTRL V/V	50

24	PILOT SPRW LH CTRL V/V MAINT REG V/V	32
25	S/HTR PILOT SPRW LH CTRL V/V INL IV	50
26	PILOT SPRW LH CTRL V/V MAINT DRN IV	32
27	S/HTR PILOT SPRW LH CTRL V/V OUT IV	50
28	S/HTR SPRW RH CTRL V/V	80
29	S/HTR SPRW RH CTRL V/V INL IV	80
30	S/HTR SPRW RH CTRL V/V MAINT DRN IV	32
31	S/HTR SPRW RH CTRL V/V OUT IV	80
32	S/HTR SPRW RH CTRL V/V MAINT DRN IV	32
33	S/HTR SPRW RH C/V BYP IV	80
34	S/HTR PILOT SPRW RH CTRL V/V	50
35	PILOT SPRW RH CTRL V/V MAINT REG V/V	32
36	S/HTR PILOT SPRW RH CTRL V/V INL IV	50
37	S/HTR PILOT SPRW CTRL V/V MAINT DRN IV	32
38	S/HTR PILOT SPRW RH CTRL V/V OUT IV	50
39	REHEAT SPRAY WATER SUPPLY NRV	4"
40	REHEAT SPRW RH CTRL V/V	50
41	REHEAT SPRW RH CTRL V/V INL IV	50
42	REHEAT SPRW RH CTRL V/V OUT IV	50
43	REHEAT SPRW RH CTRL V/V BYP IV	50
44	REHEAT SPRW RH CTRL V/V MAINT DRN IV	50
45	REHEAT SPRW LH CTRL V/V	50
46	REHEAT SPRW LH CTRL V/V INL IV	50
47	REHEAT SPRW LH CTRL V/V OUT IV	50
48	REHEAT SPRW LH CTRL V/V BYP IV	50
49	REHEAT SPRW LH CTRL V/V MAINT DRN IV	50
50	LEFT HAND ISOLATING	32
51	LEFT HAND REGULATING	32
52	LEFT HAND SDNR	32
53	CENTRE ISOLATING	32
54	CENTRE REGULATING	32
55	CENTRE SDNR	32
56	RIGHT HAND ISOLATING	32
57	RIGHT HAND REGULATING	32
58	RIGHT HAND SDNR	32
59	LEFT HAND ISOLATING	32
60	LEFT HAND REGULATING	32
61	LEFT HAND SDNR	32
62	CENTRE ISOLATING	32
63	CENTRE REGULATING	32
64	CENTRE SDNR	32
65	RIGHT HAND ISOLATING	32
66	RIGHT HAND REGULATING	32
67	RIGHT HAND SDNR	32
68	CIRC PUMP VENT	19
69	CIRC PUMP MAINTENANCE BYPASS	19

70	CIRC PUMP MAINTENANCE DRAIN	19
71	CIRC PUMP MAINTENANCE DRAIN SDNR	19
72	CIRC PUMP FILLING 1ST ISOL	13
73	CIRC PUMP FILLING 2ND ISOL (CLOSEST TO PUMP)	13
74	CIRC PUMP VENT	19
75	CIRC PUMP DISCHARGE VALVE BYPASS	32
76	CIRC PUMP MAINTENANCE BYPASS	19
77	CIRC PUMP MAINTENANCE DRAIN	19
78	CIRC PUMP MAINTENANCE DRAIN SDNR	19
79	CIRC PUMP FILLING 1ST ISOL	13
80	CIRC PUMP FILLING 2ND ISOL (CLOSEST TO PUMP)	13
81	CIRC PUMP VENT	19
82	CIRC PUMP MAINTENANCE BYPASS	19
83	CIRC PUMP MAINTENANCE DRAIN	19
84	CIRC PUMP MAINTENANCE DRAIN SDNR	19
85	CIRC PUMP FILLING 1ST ISOL	13
86	CIRC PUMP FILLING 2ND ISOL (CLOSEST TO PUMP)	13
87	CIRC PUMP VENT	19
88	CIRC PUMP MAINTENANCE BYPASS	19
89	CIRC PUMP MAINTENANCE DRAIN	19
90	CIRC PUMP MAINTENANCE DRAIN SDNR	19
91	CIRC PUMP FILLING 1ST ISOL	13
92	CIRC PUMP FILLING 2ND ISOL (CLOSEST TO PUMP)	13
93	CIRC PUMP PRESSURE DIFF ISOLATING	19
94	BLOWDOWN TANK ISOLATING	76
95	STEAM DRUM BLOWDOWN - LH	32
96	CAUSTIC DOSING PUMP DISCHARGE ISOL V/V	32
97	CAUSTIC DOSING PUMP DISCHARGE REG V/V NR.1	32
98	CAUSTIC DOSING PUMP DISCHARGE REG V/V NR.2	32
99	BOILER TUNDISH CIRC PUMP A CLR ISOL V/V	80
100	BOILER TUNDISH CIRC PUMP B CLR ISOL V/V	80
101	BOILER TUNDISH CIRC PUMP C CLR ISOL V/V	80
102	BOILER TUNDISH CIRC PUMP D CLR ISOL V/V	80
103	STEAM DRUM BLOWDOWN SDNR - LH	32
104	STEAM DRUM BLOWDOWN - RH	32
105	STEAM DRUM BLOWDOWN SDNR - RH	32
106	DE-SUPERHEATER DRAIN ISOLATING - LH SDNR	19
107	1ST STAGE SUPERHEATER INLET HEADER DRAIN - RH	32
108	1ST STAGE SUPERHEATER INLET HEADER DRAIN - RH SDNR	32
109	1ST STAGE SUPERHEATER INLET HEADER DRAIN - LH	32
110	1ST STAGE SUPERHEATER INLET HEADER DRAIN - LH SDNR	32
111	REAR 3RD STAGE SUP HTR INLET HEADER DRAIN - LH	32
112	REAR 3RD STAGE SUP HTR INLET HEADER DRAIN - LH SDNR	32
113	FRONT 3RD STAGE SUP HTR INLET HEADER DRAIN - LH	32
114	FRONT 3RD STAGE SUP HTR INLET HEADER DRAIN - LH SDNR	32
115	DE-SUPERHEATER DRAIN ISOLATING - RH	19

116	FRONT 3RD STAGE SUP HTR INLET HEADER DRAIN - RH	32
117	FRONT 3RD STAGE SUP HTR INLET HEADER DRAIN - RH SDNR	32
118	REAR 3RD STAGE SUP HTR INLET HEADER DRAIN - RH	32
119	REAR 3RD STAGE SUP HTR INLET HEADER DRAIN - RH SDNR	32
120	EONOMISER RECIRCULATING	76
121	ECONOMISER RECIRCULATING NON RETURN	76
122	STEAM SAMPLING ISOLATING	6
123	FIRST STAGE SUPERHEATER INLET HEADER DRAIN - LH	32
124	FIRST STAGE SUPERHEATER INLET HEADER DRAIN - RH	32
125	FRONT THIRD STAGE SUPERHEATER INLET HEADER DRAIN - LH	32
126	REAR THIRD STAGE SUPERHEATER INLET HEADER DRAIN - LH	32
127	FRONT THIRD STAGE SUPERHEATER INLET HEADER DRAIN - RH	32
128	REAR THIRD STAGE SUPERHEATER INLET HEADER DRAIN - LH	32
129	DE-SUPERHEATER DRAIN INLET ISOLATING	19
130	DE-SUPERHEATER DRAIN (WITH V-NOTCH SEAT)	19
131	DE-SUPERHEATER DRAIN OUTLET ISOLATING	19
132	DE-SUPERHEATER DRAIN BYPASS (WITH V-NOTCH SEAT)	19
133	DE-SUPERHEATER DRAIN INLET ISOLATING	19
134	DE-SUPERHEATER DRAIN (WITH V-NOTCH SEAT)	19
135	DE-SUPERHEATER DRAIN OUTLET ISOLATING	19
136	DE-SUPERHEATER DRAIN BYPASS (WITH V-NOTCH SEAT)	19
137	STEAM DRUM BLOWDOWN	32
138	DRUM AIR RELEASE ISOLATING	19
139	DRUM AIR RELEASE REGULATING	19
140	CHEMICAL INJECTION TO DRUM ISOLATING	32
141	CHEMICAL INJECTION TO DRUM NON RETURN	32
142	ATOMISING STEAM SHUT-OFF	51
143	STEAM DRUM BLOWDOWN	32
144	DRUM AIR RELEASE ISOLATING	19
145	DRUM AIR RELEASE REGULATING	19
146	BOILER PRESSURE GUAGE ISOLATING	19
147	ATOMISING STEAM SHUT-OFF	51
148	SUPERHEATER STEAM & AIR RELEASE - LH (TOP)	76
149	SUPERHEATER STEAM & AIR RELEASE - LH (BOTTOM)	76
150	SUPERHEATER STEAM & AIR RELEASE - RH (TOP)	76
151	SUPERHEATER STEAM & AIR RELEASE - RH (BOTTOM)	76
152	DE-SUPERHEATER CROSS OVER DRAIN ISOLATING - LH	19
153	DE-SUPERHEATER CROSS OVER DRAIN REGULATING - LH	19
154	DE-SUPERHEATER CROSS OVER AIR RELEASE ISOLATING - LH	19
155	DE-SUPERHEATER CROSS OVER AIR RELEASE REGULATING - LH	19
156	DE-SUPERHEATER CROSS OVER DRAIN ISOLATING - RH	19
157	DE-SUPERHEATER CROSS OVER DRAIN REGULATING - RH	19
158	DE-SUPERHEATER CROSS OVER AIR RELEASE ISOLATING - RH	19
159	DE-SUPERHEATER CROSS OVER AIR RELEASE REGULATING - RH	19
160	MAIN FEED ISOL V/V	400
161	MAIN FEED ISOL V/V VENT	50

162	MAIN FEED ISOL V/V VENT	50
163	TOPPING UP MOTORIZED REG V/V	80
164	TOPPING UP Drain v/v REG V/V	25
165	TOPPING UP OUTLET ISOL V/V	80
166	TOPPING UP INLET ISOL V/V	80
167	TOPPING UP Drain v/v ISOL V/V	25
168	ECON INLET LH FRONT ISOL V/V BYPASS V/V	15
169	ECON INLET LH REAR ISOL V/V BYPASS V/V	15
170	ECON INLET RH FRONT ISOL V/V BYPASS V/V	15
171	ECON INLET RH REAR ISOL V/V BYPASS V/V	15
172	MAIN STEAM LEG LH MOTORISED DRAIN VALVE UNIT	32
173	MAIN STEAM LEG LH FINAL DRAIN SDNR VALVE	32
174	MAIN STEAM LEG LH TURBINE FINAL DRAIN BEFORE ESV PNEUMATIC DRAIN VALVE (309A)	32
175	MAIN STEAM LEG LH TURBINE WARM UP LINE FINAL DRAIN PNEUMATIC VALVE (420A)	32
176	MAIN STEAM LEG LH FINAL MAIN DRAIN ISOL VALVE	32
177	MAIN STEAM LEG LH STOP VALVE BYPASS ISOL VALVE	32
178	MAIN STEAM LEG LH TURBINE FINAL DRAIN BEFORE ESV DRAIN ISOLATING VALVE	32
179	MAIN STEAM LEG LH TURBINE DRAIN WARM UP LINE ISOL VALVE	32
180	LIVE STEAM MANIFOLD INLET ISOL VALVE	32
181	LIVE STEAM MANIFOLD DRAIN ISOL VALVE	32
182	MAIN STEAM LEG RH MOTORISED STOP VALVE BYPASS VALVE UNIT	32
183	MAIN STEAM LEG RH MOTORISED DRAIN VALVE	32
184	MAIN STEAM LEG RH TURBINE FINAL DRAIN BEFORE ESV PNEUMATIC DRAIN VALVE (309B)	32
185	MAIN STEAM LEG RH TURBINE WARM UP LINE FINAL DRAIN PNEUMATIC VALVE (420B)	32
186	MAIN STEAM LEG RH FINAL MAIN DRAIN ISOL VALVE	32
187	MAIN STEAM LEG RH STOP VALVE BYPASS ISOL VALVE	32
188	IP CYLINDER CASING PNEUMATIC DRAIN VALVE (385)	32
189	HOT REHEAT LH BIFURCATION PNEUMATIC DRAIN VALVE	32
190	HOT REHEAT LH BIFURCATION DRAIN VALVE ISOL VALVE	32
191	HOT REHEAT LH TOP INTERCEPTOR PNEUMATIC DRAIN VALVE	32
192	HOT REHEAT LH TOP INTERCEPTOR PNEUMATIC DRAIN VALVE ISOL VALVE	32
193	HOT REHEAT LH BOTTOM INTERCEPTOR PNEUMATIC DRAIN VALVE	32
194	HOT REHEAT RH BIFURCATION PNEUMATIC DRAIN VALVE	32
195	HOT REHEAT RH BIFURCATION DRAIN VALVE ISOL VALVE	32
196	HOT REHEAT RH BOTTOM INTERCEPTOR PNEUMATIC DRAIN VALVE	32
197	HOT REHEAT RH BOTTOM INTERCEPTOR PNEUMATIC DRAIN VALVE	32
198	HOT REHEAT RH TOP INTERCEPTOR PNEUMATIC DRAIN VALVE	32
199	HOT REHEAT RH TOP INTERCEPTOR PNEUMATIC DRAIN VALVE ISOL VALVE	32
200	COLD REHEAT LOOP DRAIN ISOL VALVE	32
201	COLD REHEAT LH STEAM TRAP DRAIN SDNR VALVE	32
202	COLD REHEAT LH STEAM TRAP INLET ISOL VALVE	32
203	COLD REHEAT LH STEAM TRAP OUTLET ISOL VALVE	32

204	COLD REHEAT LH STEAM TRAP BYPASS ISOL VALVE	32
205	COLD REHEAT MAIN DRAIN PNEUMATIC DRAIN VALVE UNIT (287)	32
206	COLD REHEAT MAIN DRAIN ISOLATING VALVE	32
207	COLD REHEAT LOOP DRAIN PNEUMATIC VALVE (465)	32
208	COLD REHEAT LOOP DRAIN ISOLATING VALVE	32
209	COLD REHEAT LOOP DRAIN ISOL VALVE	32
210	COLD REHEAT RH STEAM TRAP DRAIN SDNR VALVE	32
211	COLD REHEAT RH STEAM TRAP INLET ISOL VALVE	32
212	COLD REHEAT RH STEAM TRAP OUTLET ISOL VALVE	32
213	COLD REHEAT RH STEAM TRAP BYPASS ISOL VALVE	32
214	COLD REHEAT RH SBLWR RANGE ISOL V/V	2"
215	A/HTR S/B SECTISING MOT V/V	4"
216	S/B RNG PRESS CTRL V/V	4"
217	S/B RNG MSTR MOT V/V	4"
218	FURN S/BS SECTISING MOT V/V	4"
219	A/HTR LH S/B SECTOR NO1 MOT IV	32
220	A/HTR LH S/B SECTOR NO2 MOT IV	32
221	A/HTR LH S/B SECTOR NO3 MOT IV	32
222	A/HTR LH S/B SECTOR NO4 MOT IV	32
223	A/HTR RH S/B SECTOR NO.1 MOT IV	32
224	A/HTR RH S/B SECTOR NO.2 MOT IV	32
225	A/HTR RH S/B SECTOR NO.3 MOT IV	32
226	A/HTR RH S/B SECTOR NO.4 MOT IV	32

Camden Power Station: Turbine Valves and Commissioning - strip, inspect, blue, box and stroke. Estimate scope below for a GO/MGO (subject to change):

Camden GO/MGO Turbine Valves (276)	
QIP	Description
FEEDWATER	
1	HPH1 INLET ISOLATION VALVE (12")
2	HPH1 INLET ISOLATION MOTORISED BYPASS VALVE (1")
3	HPH1 INLET ISOLATION HANDISOLATING BYPASS VALVE (1")
4	HPH1 EXIT ISOLATION VALVE (12")
5	HPH1 BYPASS SPRING LOADED NRV (SPRING MUST BE REPLACED) (15")
6	HPH2 INLET ISOLATION VALVE (12")
7	HPH2 INLET ISOLATION MOTORISED BYPASS VALVE (1")
8	HPH2 INLET ISOLATION HAND ISOLATING BYPASS VALVE (1")
9	HPH2 INLET EXIT ISOLATION VALVE (12")
10	HPH2 BYPASS SPRING LOADED NRV (SPRING MUST BE REPLACED) (15")
11	HPH3 INLET ISOLTION VALVE (12")

12	HPH3 INLET ISOLATION MOTORISED BYPASS VALVE (1")
13	HPH3 INLET ISOLATION HAND ISOLATING BYPASS VALVE (1")
14	HPH3 EXIT ISOLATION VALVE (12")
15	HPH3 BYPASS SPRING LOADED NRV (SPRING MUST BE REPLACED) (15")
16	FEED WATER FINAL FEED ISOLATION VALVE (12")
17	FEED WATER FINAL FEED ISOLATION BYPASS VALVE (1")
18	HPH1 BLED STEAM ISOLATION VALVE (24")
19	HPH1 BLED STEAM NRV (15")
20	HPH1 BLED STEAM DRAIN VALVE TO DRAINS VESSEL (20mm)
21	HPH1 VENT MOTORISED VALVE (1")
22	HPH1 DISTILLATE OUTLET NRV (6")
23	HPH1 DISTILLATE OUTLET CONTROL VALVE (3")
24	HPH1 DISTILLATE OUTLET HAND ISOLATION VALVE (3")
25	HPH1 EMERGENCY DRAIN CONTROL VALVE (3")
26	HPH1 EMERGENCY DRAIN HAND ISOLATING VALVE (3")
27	HPH2 BLED STEAM ISOLATION VALVE (24")
28	HPH2 BLED STEAM PANRV (15")
29	HPH2 BLED STEAM NRV BETWEEN HPH3 BLED STEAM (12")
30	HPH2 BLED STEAM DRAIN VALVE TO DRAINS VESSEL (20mm)
31	HPH2 VENT MOTORISED VALVE (1")
32	HPH2 DISTILLATE OUTLET NRV (4")
33	HPH2 DISTILLATE OUTLET CONTROL VALVE (4")
34	HPH2 DISTILLATE OUTLET HAND ISOLATING VALVE (4")
35	HPH2 EMERGENCY DRAIN CONTROL VALVE (4")
36	HPH2 EMERGENCY HAND ISOLATING VALVE (4")
37	HPH2 STEAM DUCT DRAIN TO CDT ISOLATION VALVE (2")
38	HPH2 STEAM DUCT DRAIN TO CDT STEAM TRAP (2")
39	HPH3 BLED STEAM ISOLATION VALVE (15")
40	HPH3 BLED STEAM PANRV (15")
41	HPH3 BLED STEAM DRAIN VALVE TO DRAINS VESSEL (20mm)
42	HPH3 VENT MOTORISED VALVE (1")
43	HPH3 DISTILLATE OUTLET NRV (2")
44	HPH3 DISTILLATE OUTLET CONTROL VALVE (2")
45	HPH3 DISTILLATE OUTLET HAND ISOLATING VALVE (2")
46	HPH3 EMERGENCY DRAIN CONTROL VALVE (2")
47	HPH3 EMERGENCY DRAIN HAND ISOLATING VALVE (2")
48	SUCTION STRAINER A INLET (14")

49	SUCTION STRAINER B INLET (14")
50	SUCTION STRAINER A OUTLET (14")
51	SUCTION STRAINER B OUTLET (14")
52	EFP A INLET ISOLATION VALVE (14")
53	EFP A DISCHARGE ISOLATION VALVE (10")
54	EFP A DISCHARGE ISOLATION BYPASS VALVE (1")
55	EFP A LEAK-OFF ISOLATION VALVE (4")
56	EFP A LEAK-OFF NON RETURN VALVE (4")
57	EFP B INLET ISOLATION VALVE (14")
58	EFP B DISCHARGE ISOLATION VALVE (10")
59	EFP B DISCHARGE ISOLATION BYPASS VALVE (1")
60	EFP B LEAK-OFF NON RETURN VALVE (4")
61	EFP B LEAK-OFF ISOLATION VALVE (4")
62	SFP INLET ISOLATION VALVE (14")
63	SFP DISCHARGE ISOLATION VALVE (12")
64	SFP DISCHARGE ISOLATION BYPASS VALVE (1")
65	SFP LEAK-OFF ISOLATION VALVE (4")
66	SFP LEAK-OFF NON RETURN VALVE (4")
67	BLED STEAM TO DA (12")
68	BLED STEAM TO DA PANRV (12")
69	BLED STEAM TO DA CONICAL NRV (16")
70	BLED STEAM TO NRV ON VALVE DRAINS (4")
71	MAIN FWT WARMING LINE ISOLATION VALVE (2")
72	MAIN FWT WARMING LINE NRV (2")
73	MAIN FWT WARMING LINE BYPASS ISOLATION VALVE (2")
74	DA TOPPING UP VALVE (4")
75	VENT CONDENSER DRAIN TO LPH2 FLASH BOX (1")
76	VENT CONDENSER VENT TO MAIN CONDENSER (1")
77	FWT EAST CENTRE AND WEST WARMING LINE NON RETURN VALVE (2")
78	FWT EAST CENTRE AND WEST WARMING LINE NON RETURN VALVE (2")
79	FWT EAST CENTRE AND WEST WARMING LINE NON RETURN VALVE (2")
80	SFP SUCTION PRESSURE RELIEVE VALVE(SET: 690 KPA) (1")
81	EFP A SUCTION PRESSURE RELIEVE VALVE(SET: 690 KPA) (1")
82	EFP B SUCTION PRESSURE RELIEVE VALVE(SET: 690 KPA) (1")
83	FEED WATER TANK EAST CENTRE AND WEST SAFETY VALVES (SET: 260 KPA) (8")
84	FEED WATER TANK EAST CENTRE AND WEST SAFETY VALVES (SET: 260 KPA) (8")
85	FEED WATER TANK EAST CENTRE AND WEST SAFETY VALVES (SET: 260 KPA) (8")

86	FEED WATER TANK EAST CENTRE AND WEST SAFETY VALVES (SET: 260 KPA) (8")
87	HPH1 SHELL SAFETY VALVE (SET: 800KPA) (4")
88	HPH1 FEED WATER PRESSURE RELIEF VALVE (SET: 20200 KPA) (6")
89	HPH2 SHELL SAFETY VALVE (SET: 1310 KPA) (4")
90	HPH1 FEED WATER PRESSURE RELIEF VALVE (SET: 20200 KPA) (6")
91	HPH3 SHELL SAFETY VALVE (SET: 2827 KPA) (4")
92	HPH3 FEED WATER PRESSURE RELIEF VALVE (SET: 20200 KPA) (6")
CONDENSATE VALVE	
93	DEMIN WATER SERV MAIN ISOLATION VALVE (12")
94	DEMINA WATER SERV MAIN NRV (12")
95	COMMON RANGE TO CDT CV (6")
96	AUX STM MFLD SUPPLY ISOLATION VALVE (2")
97	AIR EJECTOR A ORIFICE BYPASS STEAM CV (2")
98	AUX STM MFLD DRAIN VALVE (1")
99	AIR EJECTOR STEAM SUPPLY IV (1")
100	AIR EJECTOR STEAM SUPPLY IV (1")
101	AIR EJECTOR A ORIFICE BYPASS STEAM CV (2")
102	QUICK START AIR EJECTOR STEAM SUPPLY IV (2")
103	LP HEATER 1 BLED STEAM IV (24")
104	LP HEATER 1 BLED STEAM DRAIN VALVE (4")
105	LP HEATER 2 BLED STEAM IV (18")
106	LP HEATER 2 BLED STEAM NRV (18")
107	CEP A DISCHARGE ISOLATION VALVE (10")
108	CEP A SUCTION ISOLATION VALVE (14")
109	CEP A BALANCE LINE VALVE (6")
110	CEP A DISCHARGE NRV (10")
111	CEP B DISCHARGE ISOLATION VALVE (10")
112	CEP B SUCTION ISOLATION VALVE (14")
113	CEP B BALANCE LINE VALVE (6")
114	CEP B DISCHARGE NRV (10")
115	CONDENSATE RECIRCULATION VALVE CV (4")
116	CONDENSER LEVEL CONTROL CV (4")
117	CONDENSATE DUMPING VALVE (4")
118	CNDS DRN TO WASTE AIR RELEASE VLV (4")
119	LPH 2 CONDENSATE NRV (8")
120	LPH 1 BYPASS VALVE (16")

121	LPH 2 BYPASS VALVE (16")
122	DRAINS COOLER CONDENSATE INLET ISOLATION V/V (2")
123	LPH 1 CONDENSATE OUTLET ISOLATION VALVE (12")
124	LPH 2 CONDENSATE INLET ISOLATION VALVE (12")
125	LPH 2 CONDENSATE OUTLET IV (12")
126	CDT OUTLET TO MAIN CONDENSER (4")
127	LP1 HTR EMERGENCY LEVEL CONTROL VALVE (4")
128	LP1 HTR NORMAL LEVEL CONTROL VALVE (4")
129	LP1 HTR EMERGENCY LEVEL HAND ISOLATION VALVE (4")
130	LP1 HTR NORMAL LEVEL HAND ISOLATION VALVE (6")
131	LP2 HTR EMERGENCY LEVEL CONTROL VALVE (4")
132	LP2 HTR NORMAL LEVEL CONTROL VALVE (4")
133	LP1 HTR EMERGENCY LEVEL HAND ISOLATION VALVE (4")
134	LP1 HTR NORMAL LEVEL HAND ISOLATION VALVE (6")
135	DEMIN SUPPLY TO RFT IV (6")
136	DEARATOR TOPPING UP V/V (4")
137	CONDENSATE MAKE UP CV (4")
138	EMERGENCY FEED MAKE-UP TO CONDENSER OVERRIDER VALVE (6")
139	CNDS MU CTRL IV 1 (4")
140	CNDS MU CTRL IV 2 (4")
141	CNDS MU CTRL BV (4")
142	5% DMN MU IV TO COND (4")
143	5% DMN MU MIV (4")
144	CONDENSATE DUMPING CV (4")
145	CONDENSATE DUMPING TO RFT FST IV (4")
146	CONDENSATE DUMPING TO RFT CONTROL SEC IV (4")
147	CONDENSATE DUMPING TO ESTE CONTROL BV (4")
148	CNDS DMPG TO RFT NRV (4")
149	CEP A GLAND SEALING V/V EFP B NDE GLAND CE IV (1/2")
150	A EXT PMP BRG GSL WTR NRV (1/2")
151	CEP B GLAND SEALING V/V EFP B NDE GLAND CE IV (1/2")
152	B EXT PMP BRG GSL WTR NRV (1/2")
153	AIR EJECTOR A PRIMARY DISTILLATE DRAIN TO CONDENSATE VALVE (1")
154	AIR EJECTOR A GLAND STEAM SUPPLY VALVE (1")
155	AIR EJECTOR A SECONDARY DISTILLATE TO CDT NRV (1")
156	AIR EJECTOR EXHAUST NRV (1")
157	AIR EJECTOR B PRIMARY DISTILLATE DRAIN TO CONDENSATE VALVE (1")

158	AIR EJECTOR B GLAND STEAM SUPPLY VALVE (2")
159	AIR EJECTOR B SECONDARY DISTILLATE DRAIN TO CDT NRV (1")
160	AIR EJECTOR EXHAUST NRV (1")
161	AIR SUCTION AT EJECTOR A IV (6')
162	AIR SUCTION AT EJECTOR B IV (6")
163	QUICK-START EJECTOR AIR SUCTION IV (6")
164	AIR SUCTION FROM CONDENSER IV (6")
165	CDT DMN WTR IN IV (4")
166	CLNT HT DMN WTR MIV (4")
167	DMN WTR TO COND LVL CONTROL IV (4")
168	N2H4 TNK DMN WTR IN IV (1")
169	AIR EJECTOR COND IN MNFLD SMPL PNT (1")
170	WATER EXTRACTION CONDENSER IV (4")
171	WATER EXTRACTION CONDENSER IV (4")
172	GLAND STEAM CONDENSER IV (2")
173	GLAND STEAM CONDENSER IV (2")
174	AIR EJECTOR A CONSENSATE INLET IV (4")
175	AIR EJECTOR A CONSENSATE OUTLET IV (4")
176	AIR EJECTOR B CONSENSATE INLET IV (4")
177	AIR EJECTOR B CONSENSATE OUTLET IV (1")
178	DEAERATOR VENT COND TO LPH2 F/BX (4")
180	DRAIN COOLER DRAIN TO COND IV (4")
181	LP1 HTR F/BX STANDPIPE IV (13mm)
182	LP1 HTR F/BX STANDPIPE IV (4")
183	RES FE TO CLNT HT FST IV (2")
184	DEMIN WATER TO STAT COOLANT SYS TEST POINT IV (2")
185	DEARATOR VENT COND TO LPH2 F/BX DV (1")
186	DRAIN COOLER CONDENSATE DRAIN V/V (1")
187	DRAIN COOLER CONDENSATE DRAIN V/V (8")
188	DRAIN COOLER AIR RELEASE TO CONDENSER (1")
189	LP1 HTR F/BX DISTILLATE TO COND F/BX DV (3")
190	LP2 HTR F/BX DISTILLATE TO COND F/BX DV (3")
191	LPH2 F/BX TO LPH1 F/BX DV (3")
192	RFWT DRN IV (1")
193	MAKE & DUMPING LINE IV (4")
194	5% DMN MU DRN IV (4")
195	GSC ETRBX DV (1/2")

196	WTR COND PRV (SET PRESSURE 207KPA) (1")
197	G STM COND IN PRV(SET PRESSURE 1150KPA) (1")
198	LP HEATER 1 SHELL SIDE SAFETY VALVE (SET PRESSURE 172.5KPA) (6")
199	LPH 1 CONDENSATE PRV(SET PRESSURE 1138.5KPA) (1")
200	LP HEATER 2 SHELLSIDE SAFETY VALVE(SET PRESSURE 172.5KPA) (6")
201	LPH 2 CONDENSATE PRV(SET PRESSURE 1138.5KPA) (1")
COOLING WATER AUXILIARY	
202	MCW STRAINER INLET ISOLATION VALVE (14")
203	MCW STRAINER OUTLET ISOLATION VALVE (12")
204	H2 BOOSTER PUMP A SUCTION ISOLATION VALVE (10")
205	H2 BOOSTER PUMP B SUCTION ISOLATION VALVE (10")
206	H2 BOOSTER PUMP A NRV (8")
207	H2 BOOSTER PUMP B NRV (8")
208	H2 BOOSTER PUMP A DISCHARGE ISOLATION VALVE (8")
209	H2 BOOSTER PUMP B DISCHARGE ISOLATION VALVE (8")
210	CW RETURN FROM COOLER TO HOT DUCT ISOLATION VALVE (4")
211	H2 COOLER BYPASS ISOLATION VALVE (2")
212	H2 COOLER BYPASS ISOLATION VALVE (2")
213	H2 COOLER BYPASS ISOLATION VALVE (2")
214	H2 COOLER BYPASS ISOLATION VALVE (2")
215	AUX STRAINER B DRAIN VALVE (1")
216	AUX STRAINER A DRAIN VALVE (1")
GENERATOR MECHANICAL & AUXILIARY	
217	H2 COOLERS CW CONTROL VALVE INLET & OUTLET IV (6")
218	H2 COOLERS CW CONTROL VALVE INLET & OUTLET IV (6")
219	H2 COOLERS CW CONTROL VALVE INLET & OUTLET IV (6")
220	H2 COOLERS CW CONTROL VALVE INLET & OUTLET IV (6")
221	H2 COOLERS CW CONTROL VALVE INLET & OUTLET IV (6")
222	H2 COOLERS CW CONTROL VALVE INLET & OUTLET IV (6")
223	H2 COOLERS CW CONTROL VALVE INLET & OUTLET IV (6")
224	H2 COOLERS CW CONTROL VALVE INLET & OUTLET IV (6")
225	H2 COOLERS CW BYPASS CONTROL VALVE & ACTUATOR (3")
226	H2 COOLERS CW BYPASS CONTROL VALVE & ACTUATOR (3")
227	H2 COOLERS CW BYPASS CONTROL VALVE & ACTUATOR (3")
228	H2 COOLERS CW BYPASS CONTROL VALVE & ACTUATOR (3")
229	H2 COOLERS CW INLET & OUTLET IV (3")
230	H2 COOLERS CW INLET & OUTLET IV (3")

231	H2 COOLERS CW INLET & OUTLET IV (3")
232	H2 COOLERS CW INLET & OUTLET IV (3")
233	H2 COOLERS CW INLET & OUTLET IV (3")
234	H2 COOLERS CW INLET & OUTLET IV (3")
235	H2 COOLERS CW INLET & OUTLET IV (3")
236	H2 COOLERS CW INLET & OUTLET IV (3")
237	COOLER OUTLET CW VALVE with actuator (10")
238	COOLER OUTLET CW VALVE with actuator (10")
239	COOLER INLET CW ISOLATION VALVE (10")
240	COOLER INLET CW ISOLATION VALVE (10")
241	AC PUMPS ISOLATION VALVE (4")
242	AC PUMPS ISOLATION VALVE (4")
243	AC PUMPS ISOLATION VALVE (4")
244	AC PUMPS ISOLATION VALVE (4")
245	AC PUMPS ISOLATION VALVE (4")
246	AC PUMPS ISOLATION VALVE (4")
247	AC SEAL OIL SUCTION IV (4")
248	AC SEAL OIL DISCHARGE IV (4")
249	DC SEAL SUCTION IV (4")
250	DC SEAL OIL DISCHARGE IV (4")
251	AC SEAL OIL DISCHARGE NRV (4")
252	DC SEAL OIL DISCHARGE NRV (4")
253	DC THROTTLE VALVE INLET ISOL (4")
254	COOLER INLET SEAL OIL ISOL V/V (4")
255	COOLER OUTLET SEAL OIL ISOL V/V (4")
256	COOLER INLET SEAL OIL ISOL V/V (4")
257	COOLER OUTLET SEAL OIL ISOL V/V (4")
258	MAIN LUBRICATION OIL COOLER A COOLING WATER INLET ISOLATING VALVE (150mm)
259	MAIN LUBRICATION OIL COOLER A COOLING WATER OUTLET ISOLATING VALVE (150mm)
260	MAIN LUBRICATION OIL COOLER B COOLING WATER INLET ISOLATING VALVE (150mm)
261	MAIN LUBRICATION OIL COOLER B COOLING WATER OUTLET ISOLATING VALVE (150mm)
262	SEAL OIL COOLER A COOLING WATER INLET ISOLATING VALVE (100mm)
263	SEAL OIL COOLER A COOLING WATER OUTLET ISOLATING VALVE (100mm)
264	SEAL OIL COOLER B COOLING WATER INLET ISOLATING VALVE (100mm)
265	SEAL OIL COOLER B COOLING WATER OUTLET ISOLATING VALVE (100mm)
266	CONTROL VALVE AND ACTUATOR ON CW DISCHARGE MANIFOLD (3")
267	CONTROL VALVE AND ACTUATOR ON CW DISCHARGE MANIFOLD (6")

268	AC PUMP INLET IV (4")
269	AC PUMP OUTLET IV (4")
270	DC PUMP INLET IV (4")
271	DC PUMP OUTLET IV (4")
272	AUX PUMP INLET IV (4")
273	AUX PUMP OUTLET IV (4")
274	LUBE OIL AC PUMP NRV (4")
275	LUBE OIL DC PUMP NRV (4")
276	LUBE OIL AUX PUMP NRV (4")

Drakensberg Pump Storage: Spherical Valve, guide vane servos refurbishment and trunnion bush replacement - strip, inspect, box and stroke. Estimate scope below (subject to change):

Drakensberg: Removal and replacement of Spherical valve upstream and downstream seal
Task Name
Auxiliaries
All C & I equipment to be removed
All components numbered
Removal of gratings and equipment
Spherical valve
Balancing line to be removed
Hydraulic valve to be removed
Removal of mechanical isolating valve
DE torque dismantling piece bolts and nuts
Removal of DE torque bolts and nuts
Bolt heating on dismantling piece heated bolts
Removal of heated bolts and nuts
Remove remaining 4 heated bolts and nuts
Removal of hydraulic pipes
Removal of indicator pin
Removal of 4 remaining bolts

Moving of flanges
Remove Johnson coupling seal
Rig out dismantling piece
Dismantling piece flanges removed and separated
Cleaning of components
Install servo bracing device
Bolt heating on intermediate piece heated bolts
Removal of servo top pin
Removal of catwalk support bracket and install scaffolding
Removal of intermediate piece heated bolts and nuts, 4 bolts to remain in position
Pulling of intermediate piece out of spigot
Preparation for rigging intermediate piece
Removal of remaining 4 bolts
Intermediate piece lifted and removed
Turning of spherical valve to open position
Floor bolts loosened
Bolt heating on upstream heated bolts
Upstream heated bolts loosened and removed
Body rigged out
Machining of parts draft tube side
Machining of parts spherical valve
Removal of upstream seal cover ring
Upstream seal removed
Cleaning of spherical valve flanges and components
Assembling of Intermediate piece, upstream seal and Spherical valve
Upstream seal fitted and tested
Preparation for rigging spherical valve
Install O-ring on upstream penstock flange
Spherical valve Body Rigged into place
Upstream heated bolts installed and tightened
Bolt heating on upstream bolts
Measurements for arc of turn
Bolt heating after arc of turn and cooling period
Floor bolts tightened
Turning of spherical valve to close position

Install servo pin
Removal of servo bracing device
Install O-ring on spherical valve body
Fit O-ring on intermediate piece
Assembly of intermediate piece and tested
Rigging of intermediate piece
Install intermediate piece
Fitting of heated bolts and tightening
Bolt heating on intermediate bolts
Install hydraulic pipes
Testing of upstream seal in-situ
Dismantling piece
Assemble dismantling piece
Fit downstream intermediate piece / dismantling piece O-ring
Dismantling piece flanges O-rings fitted
Rigging of dismantling piece
Install dismantling piece
Install bolt heating bolts and nuts and tighten(green)
Bolt heating on bolt heating bolts
Bolt heating after arc of turn and cooling period
Install indicating pin
Wedge seal fitted and tightened
Align all flanges and pull up to draft tube side
Install 1st section dismantling piece torque bolts and nuts and tighten
Install 2 nd section dismantling piece torque bolts and nuts and tighten
Dismantling piece bolts torqued
Auxiliaries
In-watering penstock
Replace gratings
Replace of catwalk support bracket and remove scaffolding
Testing of equipment
Operate and testing operating seal

Guide Vane Servo Refurbishment (Two Servos per Unit)
Drain Oil

Install platform
Remove GV Lock Mechanism
Measure distance between centers of Rod Pins and record on check sheet
Use Grinder to remove welding on Connecting Rod Bar Nut (M48 x 3 off)
Support Bottom Connecting Rod with Jacks
Loosen Nuts (M48 x 3 off)
Use Grinder and remove Rod Pin Stops welding (both sides of Connecting Rod bar)
Remove Rod Pin Stops (if tight use 50 Ton Hydraulic Jack)
Remove Connecting Rod Bar by means of Chain Block (if tight use 50 Ton Jack to release from Rod Pin)
Remove Rod Pin by means of 50 Ton Chain Block
Remove Bottom Connecting Rod Bar (and Bolts and Spacers)
Remove Servo Top Cover Bolts
Rig Rod through Rod Eye and around Rod
Remove Servo Rod/Piston Assembly from Barrel
Remove O-Ring and clean Barrel and Top Cover sealing surfaces
Rig Servo Rod/Piston Assembly and remove from Turbine Pit
Measure and note distance of Rod turned into Clevis
Remove Piston and Clevis from Rod
Clean Thread on Clevis
Install new Piston Rod into Clevis
Ensure that Piston Rod and Clevis is in correct orientation and note the dimensions
Drill and Tap Top Cover for Rod Bush Inside Cover Plate
Insert Rod Bush into Top Cover
Bolt Inside Cover Plate to Top Cover Use Thread Lock and torque to correct setting
Install Rod Seal Kit to Top Cover
Bolt Rod Seal Cover Plate to Top Cover, (compress to Seal Manufacturer specs)
Remove old Piston Rings from Piston and install New Piston Rings
Install Piston and Piston Washer to Piston Rod
Use Piston Lock Nut to lock Piston in place
Weld Piston Keeper Plate In Position on Piston Rod
Inspect Barrel for damage and repair by using abrasive wheel
Install O-Ring On Top Cover to seal against Barrel
Install Piston/Rod Assembly into Barrel taking care not to damage the Piston Rings
Tighten Barrel Cover Bolts and Torque to correct settings
Install GV Lock Mechanism
Ensure GV Lock is in Open position
Fill Servo with oil and bleed system to rid of air through Vent valves 5205, 5203 and 5202
Pressurize system and check for leaks
If any leaks visible from Rod Seal, tighten Keeper Plate Bolts until leaks cease

Use washers of Gap thickness around bolts between Keeper Plate and Top Cover and tighten to correct torque setting
Set Servo Motors into fully closed position. RH Servo Motor (with GV lock) must be fully extended and LH Servo Motor fully retracted
Check indicator on LH Servo Motor is reading 0% open and 0 mm
Operating Ring must be set to fully closed position
Check this fully closed position by measuring the distance between the vertical wear strip and the holding plate corner at the upstream location, when the operating ring is in the fully closed position the distance between the edge of the holding plate and the wear strip must be 21.03 mm
Place Bottom Connecting Rod Bar (and Bolts and Spacers) in position
Install Rod Pin at Servo Motor Head
Assemble Eccentric Rod Pin at the Operating Ring Holder. Rotate Pin until it fits the center of the Bottom Connecting Rod
Ensure Rod Pins are inserted into Bottom Connecting Rod Bar
Install Top Connecting Rod Bar
Bolt Top and Bottom Connecting Rods Together using 3 off M48 Bolts (torque to correct setting)
Remove Platform

Spherical Valve Trunion bush replacement
Drilling the holes – mounting the bush puller ring
Ensure that all the bush dowels have been pulled out.
Cut the seal lip of the bush with a grinder. Care must be taken that the shaft is not touched. To ensure this leave the old V-packing in place so that it will protect the shaft
Bolt the puller ring over the trunion. There are holes in the puller ring that correspond with holes in the valve body
Drill holes into the bush for pulling (ø32 x 90 long). 8 Equally spaced are all that is required. The holes are drill through the puller ring to ensure correct positioning. A sleeve should be put into the puller ring to ensure concentricity (OD 40, ID 32).
If the holes can't be drilled deep enough, the puller ring must be removed and then the holes drill to the correct depth.
Tap the holes for M36
Procedure for using the bush pulling ring
Ensure the trunion and plug are supported so that the trunion is not resting of the bush (Either with the dummy shaft or the jacks under the plug
Mount the bush pulling ring on the valve. Grade 12.9 threaded bar and grade 12 nuts should be used.
Use only 8 jacks. The jacks should be next to the threaded bar
Connect up the jacks to the pump
Set up a screen behind the bush puller. The screen is to catch bolts that might break and shoot off during the bush pulling.
Open all the ball valves to the jacks
Adhere to the safety guidelines in section 1 for using jacks.

Pressurize the jacks. Record the maximum jack pressure at which the bush comes loose.
When the jacks reach the end of there stroke, retract the jacks and install the spacers (see drawing 6262)
Repeat the procedure until the bushes have been pulled out completely. This is the distance required for disassembling the plug.
If the bush starts moving easily smaller longer stroke jacks can be used
Bush pulling with liquid nitrogen
This procedure is to be followed if the removal method stated in the previous section failed.
Drill holes in the bush for injecting the liquid nitrogen. Four holes are required, equally spaced around the circumference. Increase the clearance between the bush and the trunnion by using a jack before drilling. Insert a shim in to the clearance to protect the trunnion while drilling.
Seal the bush - trunnion gap by using grease. The grease will freeze when it comes into contact with the liquid nitrogen. Leave the bush trunnion gap on the inside of the valve open, as this is where the liquid nitrogen will escape.
The liquid nitrogen will be supplied by an external contractor. The contractor will have a trailer with a pump on it.
Mount the bush pulling ring. Use Grade 4.6 threaded bar, as the Grade 12.9 can't handle the cold temperatures.
Pump 250 kg of liquid nitrogen through the bush in approximately 20 minutes.
While the liquid nitrogen is being pump the jacks can be pressured to 250 bar. This produces the maximum force that the Grade 4.6 threaded bar can handle. Use the conveyor belt screen again as mentioned in the section above.
If the bush has not started moving by the end of the liquid nitrogen, replace the bolts with grade 12.9 bolts and try jacking again. Now it is safe to use maximum pressure. The change over of the bolts should be done with in 10 minutes so that the bush does not warm up to much. It is suggested that impact wrenches are used to speed up the process.
Keep pulling the bush until it is a minimum of 75 mm out. If it is moving easily pull it 150 mm out.
No cooled steel should be touched with naked hands. Be aware of the danger of the dangers of liquid nitrogen.
Bush pulling with 4 collapsing holes
This procedure is to be followed if the removal method stated in the previous section, failed
Remove the bush pulling ring
External contractors will drill 4 holes through the bush. The holes will be equally spaced around the circumference of the bush. The holes will be approximately $\varnothing 48 \times 500$ mm long. The holes will hopefully relive the stress in the bush.
Mount the bush pulling ring and proceed with steps in section 7.2
Procedure for bush pulling with 16 collapsing holes
This procedure is to be followed if the removal method stated in the previous section, failed
Remove the bush pulling ring
External contractors will an additional 12 holes through the bush. The holes will be equally spaced around the circumference of the bush. The holes will be approximately $\varnothing 48 \times 500$ mm long. The holes will hopefully relive the stress in the bush.
Mount the bush pulling ring and proceed with steps in section 7.2
ASSEMBLY OF THE NEW BUSH INTO THE SLEEVE
Gluing of the Bush

Roughen up the inner surface of the sleeve with some course sand paper.
Clean the sleeve and the Orkot bush. The surfaces must be dust and dirt free. A degreaser such as Acetone should be used. Do not expose the Orkot to the Acetone for a prolonged time (only use quick wipes).
Coat the inside of the sleeve with Araldite 2015 and the outside of the bush.
Prepare some threaded bar and cross bar to jack the Orkot bush down into the sleeve. The glue is quite sticky and the bush cannot be pushed in by itself.
Insert the bush into the sleeve – turn the bush as it is inserted so to spread the adhesive. Make sure the bush is completely in the sleeve and the shoulder has bottomed. Wipe excess adhesive off the sleeve / bush. [Witness point]
Allow the adhesive to cure for 24 hours before moving the sleeve / bush.
The sleeve will now be sent away to have the Orkot inner bore machined to the correct tolerance.
Fitting the Seals – after Bush ID has been bored
Fit the main seal and the grease seal (See drawing 18.48/6259) [Inspection point – See check sheet at the back of this document]
Fit the seal retaining ring and bolt into place. Use Loctite 277 on the bolts.
Fit the seals which seal the sleeve from the body (Item 5 on drawing 18.48/6259 rev 0b) [Inspection point]
Turn the sleeve over. Take care not to damage the seal retaining ring or the bolts.
Drill the grease supply / tell tail hole through the Orkot bush into the brass sleeve hole (see drawing 18.48/6259 rev 2d)
The sleeve / bush is now ready for fitting into the valve body.

ASSEMBLY OF THE SLEEVE / BUSH INTO THE BODY
The bush housing needs to be repaired before the bush can be fitted into the body. The trunnions should also be out of the body.
Coat the sleeve outside surface with nickel anti seize. Place the O-ring that seals the sleeve body interface in place (Item 11 on drawing 18.48/6259)
Rig the sleeve into place. Insert the sleeve into the body. It should be a sliding fit, but if needed the bush pulling ring (drawing 18.48 / 6262) can be bolted onto the bush. Using treaded bar the bush can be jacked into the body. Care should be taken that no pickup occurs. Ensure that the grease supply hole is positioned in-between 2 of the pressure ring holes. (see Error! Reference source not found.)
FINAL ASSEMBLY AFTER THE PLUG AND TRUNNIONS HAVE BEEN ASSEMBLED
This part can only be attempted once the plug and trunnions have been reassembled.
Push the sleeve completely into the body. The bush pulling ring can be used for this. It might be necessary to prop the pull as well so that it is not resting on the sleeve.
Drill the holes for the tapered dowel pins (See drawing 18.48/6283). Finish the holes with an H7 reamer. After the first hole is finished fit a dowel to prevent the sleeve moving while the rest are drilled /reamed. Do not fit the rest of the dowels at this stage.
Fit the dowel pins. Use nickel anti seize [Inspection point].

Fit the rubber V packings. [Hold point]
Fit the pressure rings. Line the access holes up for the grease supply and drain holes. Use Nickel anti seize on the mating surfaces.
Fit the thrust ring and the C ring. [Inspection point]
Fit the pipes and ball valves for the grease supply.

Duvha Power Station: Boiler Valves, Turbine Valves, Non Valve Activities and Commissioning - strip, inspect, blue, box and stroke. Estimate scope below for a GO/MGO/IR (subject to change):

DUVHA TURBINE VALVES GO/MGO/IR (758)		
QIP	MAIN CONDENSER	SIZE
1	CW DOORS (3 Off)	300mm
2	CW DOORS (3 Off)	300mm
3	MAIN CONDENSER	300mm
4	MAIN CONDENSER NECK	300mm
5	HOTWELL(2 OFF)	300mm
6	HOTWELL(2 OFF)	300mm
7	VACUUM BREAKER	300mm
8	HC DOG BONE FILLING IV	1"
9	CC DOG BONE FILLING IV	1"
10	NORMAL MU A HAND I/V	100mm
11	NORMAL MU B HAND I/V	100mm
12	DEMIN MAKE-UP B TO HOT COND	100mm
13	DEMIN MAKE-UP A TO HOT COND	100mm
14	DEMIN MAKE-UP EMERG TO COLD COND	300mm
15	CDV SPRAYWATER CONTR V	50mm
16	EXT P/P A 1ST STAGE DISCH NRV	300mm
17	EXT P/P B 1ST STAGE DISCH NRV	300mm
18	EXT P/P A 2ND STAGE DISCH NRV	300mm

19	EXT P/P B 2ND STAGE DISCH NRV	300mm
20	EXT P/P SUC LINE DRN V	150mm
21	EXT P/P 1ST STAGE RECIRC CNTR V	150mm
22	EXT P/P 1ST STAGE RECIRC DRN V	25mm
23	EXT P/P 1ST STAGE RECIRC VENT	25mm
24	EXT P/P 2ND STAGE RECIRC IV	300mm
25	EXT P/P 2ND STAGE RECIRC CNTR V	300mm
26	EXT P/P A 1ST STAGE SUCTION V/V	300mm
27	EXT P/P A 1ST STAGE SUC DRN V/V	300mm
28	EXT P/P B 1ST STAGE SUCTION V/V	300mm
29	EXT P/P B 1ST STAGE SUC DRN V/V	300mm
30	EXT P/P A 1ST STAGE DISCH I/V	300mm
31	EXT P/P A 1ST STAGE LEAK OFF TO CC IV	150mm
32	EXT P/P A 1ST STAGE STRAINER FILLING I/V	25mm
33	EXT P/P A 2ND STAGE DISCH ISOL BYP V	25mm
34	EXT P/P A 2ND STAGE DISCH IV	400mm
35	EXT P/P A 2ND STAGE SUCTION V	400mm
36	EXT P/P A 1ST STAGE DISCH STRAINER VENT V	25mm
37	EXT P/P A 1ST STAGE DRN V	25mm
38	EXT P/P A 1ST STAGE STRAINER DRN V	50mm
39	EXT P/P B 1ST STAGE DISCH IV	300mm
40	EXT P/P B 1ST STAGE LEAK OFF TO CC IV	150mm
41	EXT P/P B 2ND STAGE DISCH ISOL BYP V	300mm
42	EXT P/P B 2ND STAGE DISCH IV	300mm
43	EXT P/P B 2ND STAGE SUCTION V	300mm
44	EXT P/P B 1ST STAGE DISCH DRN V	300mm
45	EXT P/P B 1ST STAGE DISCH STRAINER VENT V	25mm
46	EXT P/P B 1ST STAGE STRAINER DRN V	25mm

47	CLC INLET I/V	400mm
48	CLC OUTL I/V	400mm
49	CLC BYPASS I/V	400mm
50	CLC(STROKE CHECK AND LEAK TEST TO BE WITNESS BY ENGINEER)	400mm
51	RFWT	300mm
52	EXT P/P STAGE 2 SUCTION TO RFWT V/V	300mm
53	GLAND STEAM CONDENSER	500mm
54	DRAIN TANK	500mm
55	GSC DRAIN TANK DRN TO COND V/V	50mm
56	GSC FAN A OUTLET CONTR V/V	250mm
57	GSC FAN A OUTLET V/V	250mm
58	GSC FAN B DRAIN DTR ISOL V/V	25mm
59	GSC FAN B OUTLET CONTR V/V	250mm
60	GSC FAN B OUTLET NRV	250mm
61	DRAIN COOLER	500mm
62	LP HEATER 1 & 2 (Condensate Side)	1.2m
63	LP HEATER 1 & 2 (Steam Side)	1.2m
64	LP HTR DRN COOLER INL IV BYP V	50mm
65	LP HTR DRN COOLER INL IV	300mm
66	LP HTR DRN COOLER OUTL IV BYP V	50mm
67	LP HTR DRN COOLER OUTL IV	300mm
68	LP HTR DRN COOLER BYP V	50mm
69	LP HTR DRN COOLER BYP V BYP V	300mm
70	DRAINS COOLER DRN V/V	25mm

71	LP HEATER 1 & 2 AND DRAINS COOLER CONTROL ARRANGEMENT	50mm
72	LP HEATER 1 & 2 AND DRAINS COOLER CONTROL ARRANGEMENT	50mm
73	LP HEATER 3 VESSEL (STEAM & FEEDWATER SIDE)	300mm
74	LP HEATER 3 CONTROL ARRANGEMENT	300mm
75	LP HTR 3 STM VENT TO COLD COND	50mm
76	LP HTR 3 EMERG DRN CNTRL V	250mm
77	LP HTR 3 B/S IV A	400mm
78	LP HTR 3 B/S A TO HOT COND DRN V/V	50mm
79	LP HTR 3 B/S IV B	400mm
80	LP HTR 3 B/S B TO HOT COND DRN V/V	50mm
81	LP HTR 3 EMERG DRN IV	50mm
82	LP HTR 3 CTRL ARGT 1 FLG IV	50mm
83	LP HTR 3 CTRL ARGT 1 IV	25mm
84	LP HTR 3 CTRL	50mm
85	LP HTR 3 CTRL ARGT 2 FLG IV	50mm
86	LP HTR 3 CTRL ARGT 2 IV	25mm
87	LP HTR 3 CTRL ARGT 2 IV	50mm
88	LP HTR 3 CTRL ARGT 3 FLG IV	50mm
89	LP HTR 3 CTRL ARGT 3 IV	25mm
90	LP HTR 3 CTRL ARGT 3 IV	50mm
91	LP HTR 3 LEVEL IV	50mm
92	LP HTR 3 LEVEL IV	50mm
93	LP HTR 3 LEVEL TX IV	50mm
94	LP HTR 3 LEVEL TX IV	50mm
95	LP HTR 3 CTRL ARGT DRN V	25mm
96	LP HTR 3 DRN P/P A SUCT IV	150mm

97	LP HTR 3 DRN P/P A DISCH NRV	100mm
98	LP HTR 3 DRN P/P A DISCH IV	80mm
99	LP HTR 3 DRN P/P A LEAK-OFF IV	25mm
100	LP HTR 3 DRN P/P A DISCH DRN V	25mm
101	LP HTR 3 DRN P/P B SUCT IV	150mm
102	LP HTR 3 DRN P/P B DISCH NRV	100mm
103	LP HTR 3 DRN P/P B DISCH IV	80mm
104	LP HTR 3 DRN P/P BLEAK-OFF IV	25mm
105	LP HTR 3 DRN P/P B DISCH DRN V	25mm
106	LP HTR 3 LEVEL CNTR V	100mm
107	LP HTR 3 LEVEL CNTR IV	100mm
108	LP HTR 3 INL FW IV	300mm
109	LP HTR 3 INL FW IV BYP IV	50mm
110	LP HTR 3 FW BYP IVDRN P/P A DISCH IV	250mm
111	LP HTR 3 FW BYP IV BYP IV	25mm
112	LP HTR 3 OUTL FW IV	300mm
113	LP HTR 3 OUTL FW IV BYP IV	50mm
114	LP HTR 3 OUTL FW NRV	400mm
115	LP HTR 3 OUTL CONDS DRN IV	25mm
116	LP HTR 3 OUTL VENT IV	25mm
117	DA FW INLET VENT V/V	25mm
118	LP HTR 3 OUTL FW IV	25mm
119	LP HTR 3 OUTL DRN V/V TO EXP VES	25mm
120	LP HTR 3 OUTL DRN V/V	25mm
121	LP HTR 3A BLED STM A PRESS TX IV	25mm
122	LP HTR 3A STM PRESS TP	15mm
123	LP HTR 3B STM PRESS TP	15mm
124	LP HTR 3B BLED STM A PRESS TX IV	15mm

125	LP HTR 3 PRESS TP	15mm
126	LP HTR 3 DRAIN PIPE DRAIN V/V	50mm
127	LP HTR 3 PRESS TP	15mm
128	DEAERATOR	300mm
129	DA CONTROL ARRANGEMENT	300mm
130	DLC	400mm
131	DLC INLET I/V	400mm
132	DLC OUTLET I/V	400mm
133	DLC BYPASS IV	400mm
134	DEAERATOR STORAGE TANK	300mm
135	B DA STM INLET V/V	400mm
136	B DA STM INLET MOT BYP V/V	50mm
137	B DA STM INLET HAND BYP V/V	50mm
138	A DA STM INLET V/V	400mm
139	A DA STM INLET MOT BYP V/V	50mm
140	A DA STM INLET HAND BYP V/V	50mm
141	B DA FEEDWATER INLET V/V	300mm
142	B DA FEEDWATER INLET BYP V/V	50mm
143	A DA FEEDWATER INLET V/V	300mm
144	A DA FEEDWATER INLET BYP V/V	50mm
145	DA VENT TO ATM V/V A	25mm
146	DA VENT TO ATM V/V B	25mm
147	DA VENT TO COND V/V	25mm
148	D/A LEVEL IND ISOL V/V	25mm
149	DA CTRL ARGV ISOL V/V	50mm
150	DA CTRL ARGV ISOL V/V	50mm
151	DLC INLET ISOL BYP V/V	50mm

152	DLC OUTLET ISOL BYP V/V	50mm
153	AUX STM TO DST ISOL V/V	250mm
154	AUX STM TO DST ISOL BYP V/V	25mm
154	DST WARM STM ISOL BYP HIV	25mm
155	AUX STM TO DST NRV	250mm
156	DST CTRL ARGT 1 BOTTOM IV	50mm
157	DST CTRL ARGT 1 DRN TO EV IV	50mm
158	DST CTRL ARGT 1 TOP IV	50mm
159	DST CTRL ARGT 1 VENT TO COND IV	25mm
160	DST CTRL ARGT 1 BOTTOM IV	50mm
161	DST CTRL ARGT 1 DRN TO EV IV	50mm
162	DST CTRL ARGT 1 TOP IV	25mm
163	DST CTRL ARGT 1 VENT TO COND IV	50mm
164	DST CTRL ARGT VENT V/V	25mm
165	DST CTRL ARGT 1 BOTTOM IV	50mm
166	DST CTRL ARGT 1 DRN TO EV IV	50mm
167	DST CTRL ARGT 1 TOP IV	50mm
168	DST CTRL ARGT 1 VENT TO COND IV	50mm
169	DST LTX IV	50mm
170	DST LTX IV	50mm
171	IP BLED STM PIPE DRN V TO COND	50mm
172	IP BLED STM IV	400mm
173	IP BLED STM IV MOT BYP V	50mm
174	IP BLED STM HAND BYP V	50mm
175	IP BLED STM DRAIN VESSEL DRN	25mm
176	IP BLED STM DRAIN VESSEL DRN TO COND	25mm
177	IP BLED STM DRAIN VESSEL DRN TO COND INL IV	25mm
178	DA LEVEL CTRL DRN V	25mm

179	IP BLED STM DRAIN VESSEL STM TRAP	50mm
180	IP BLED STM DRAIN VESSEL STM TRAP OUTL IV	50mm
181	IP BLED STM TO DA SUPPLY NRV	400mm
182	IP BLED STM PP ISOL V/V	15mm
183	IP BLED STM PP ISOL V/V	15mm
184	IP BLED STM PTX ISOL V/V	15mm
185	CRH STM TO DA IV	400mm
186	CRH STM TO DA IV MOT BYP V	50mm
187	CRH STM TO DA IV MOT BYP V	50mm
188	CRH STM TO DA IV HAND BYP V	50mm
189	CRH STM TO DA CNTR V	400mm
190	AUX STM TO DA CNTRL V/V	300mm
191	AUX STM TO DA CNTRL V/V	400mm
192	AUX STM TO DA IV MOT BYP V	50mm
193	AUX STM TO DA NRV	300mm
194	AUX STM TO DA IV HAND BYP V	50mm
195	AUX STM TO DA PS IV	25mm
196	DST PRESS IND IV	15mm
197	DST PRESS TX IV	50mm
198	DST PRESS TP	15mm
199	DST DOSING V/V	15mm
200	DST SAMPLING V/V	15mm
201	DST PRESS IND V/V	50mm
202	DST LEVEL IND TOP ISOL V/V	50mm
203	DST LEVEL CONTROL ARGV BOTM ISOL V/V	50mm
204	DST CONTROL ARGV	50mm
205	DST CONTROL ARRANGEMENT (9 OFF)	50mm
206	IP B/S DRAIN POCKET/VESSEL	800mm

207	IP B/S TO DA NRV	300mm
208	SAE B	200mm
209	SAE A	200mm
210	STM EJECT A AIR CNTR V/V	200mm
211	STM EJECT A AIR IV	200mm
212	STM EJECT A STM INL IV	200mm
213	STM EJECT B AIR CNTR V	200mm
214	STM EJECT A AIR IV	200mm
215	STM EJECT A STM INL IV	200mm
216	WAE A1	200mm
217	WAE A2	200mm
218	WAE B1	200mm
219	WAE B2	200mm
220	WAE A1 AIR CV	200mm
221	WAE A2 AIR CV	200mm
222	WAE B1 AIR CV	200mm
223	WAE B2 AIR CV	200mm
224	WAE A1 AIR IV	200mm
225	WAE A2 AIR IV	200mm
226	WAE B1 AIR IV	200mm
227	WAE B2 AIR IV	200mm
228	WAE A1 WTR INL V	200mm
229	WAE A2 WTR INL V	200mm
230	WAE B1 WTR INL V	200mm
231	WAE B2 WTR INL V	200mm

232	SEC CW (GEN) P/P A SUCTION V	300mm
233	SEC CW (GEN) P/P A DISCH NRV	300mm
234	SEC CW (GEN) P/P A DISCH IV	300mm
235	SEC CW (GEN) P/P B SUCTION V	300mm
236	SEC CW (GEN) P/P B DISCH NRV	300mm
237	SEC CW (GEN) P/P B DISCH IV	300mm
238	SEC CW (GEN) EXCESS RETURN V	300mm
239	SEC CW (GEN) EXCESS RETURN V IV	300mm
240	SEC CW (GEN) EXCESS RETURN V IV	300mm
241	SEC CW (GEN) SUMP TANK LOW LEVEL CNTR V/V	150mm
242	SEC CW (GEN) SUMP TANK HIGH LEVEL CNTR V/V	150mm
243	ATMOSPHERIC TANK	300mm
244	TAPROGGE SCREENS (LOWER & UPPER)	80mm
245	TAPROGGE SCREENS (LOWER & UPPER)	80mm
246	TAPROGGE A ACCUMULATOR INL ISOL V/V	80mm
247	TAPROGGE A ACCUMULATOR OUT ISOL V/V	80mm
248	TAPROGGE B ACCUMULATOR INL ISOL V/V	80mm
249	TAPROGGE B ACCUMULATOR OUT ISOL V/V	80mm
250	TAPROGGE P/P RECIRC ISOL V/V	80mm
251	TAPROGGE P/P RECIRC ISOL V/V	80mm
252	GLAND SEAL WATER PRESSURE REDUCING VALVE	80mm
253	GLAND SEAL WATER FILTER	80mm
254	HP HTR 5A (STEAM & FEEDWATER SIDE)	300mm
255	HP HTR 6A (STEAM & FEEDWATER SIDE)	300mm
256	HP HTR 6B (STEAM & FEEDWATER SIDE)	300mm

257	HP HTR 5B (STEAM & FEEDWATER SIDE)	300mm
257	HP HTR 5A BS I/V	400mm
258	HP HTR 5A BS I/V BYP	50mm
259	HP HTR 5A BS I/V BYP	50mm
260	HP HTR 5B BS I/V	400mm
261	HP HTR 5B BS I/V BYP	50mm
262	HP HTR 5B BS I/V BYP	50mm
263	HP HTR 6A C R/H STM INL I/V	300mm
264	HP HTR 6A C R/H STM INL IV BP	25mm
265	HP HTR 6A C R/H STM INL IV BP	25mm
266	HP HTR 6B C R/H INL I/V	300mm
267	HP HTR 6B C R/H INL IV BP	25mm
268	HP HTR 6B C R/H INL IV BP	25mm
269	HP HTR 6A DRN/HP 5A CNTRL V/V	100mm
270	HP HTR 5A DRN TO DST CTRL V/V	100mm
271	HP HTR 6B DRN/HPH 5B CTRL V/V	100mm
272	HP HTR 5B DRN TO DST CTRL V/V	100mm
273	HP HTR 5A VENT TO COLD CON CTRL AIR IV	25mm
274	HP HTR 6A VENT TO COLD COND CTRL AIR IV	25mm
275	HP HTR 5B VENT TO COLD COND CTRL AIR IV	25mm
276	HP HTR 6B VENT TO COLD COND CTRL AIR IV	25mm
277	HP HTR 5A EMERG DRN/HOT COND IV	150mm
278	HP HTR 5A EMERG DRN / HOT COND CTRL	150mm
279	HP HTR 6A EMERG DRN/HOT COND IV	350mm
280	HP HTR 6A EMERG DRN/HOT COND CTRL V/V	80mm
281	HP HTR 5B EMERG DRN/HOT COND IV	350mm
282	HP HTR 5B EMERG DRN/HOT COND CTRL V/V	350mm
283	HP HTR 6B EMERG DRN/HOT COND IV	350mm

284	HP HTR 6B EMERG DRN/HOT COND CTRL V/V	350mm
285	HP HEATER 5A DRN IV	200mm
286	HP HEATER 5A DRN/DTR IV	50mm
287	HP HEATER 6A DRN/HTR 5A DRN IV	250mm
288	HP HTR 5A FEEDWATER INL DRN/DTR IV	50mm
289	HP HTR 5A FW INL DRN IV	150mm
290	HP HTR 6A FW OUTL DRN IV	50mm
291	HP HTR 6A FW OUTL DRN/DTR IV	25mm
292	HP HTR 5A FW OUTL PP IV	25mm
293	HP HTR 5A DRN/EV IV	50mm
294	HP HTR 5A FW INL DRN/EV IV	25mm
295	HP HTR 6A DRN/HTR 5A IV	250mm
296	HP HTR 6A DRN/HTR 5A IV	250mm
297	HP HTR 6A CTRL ARG 1 IV	50mm
298	HP HTR 6A CTRL ARG 2 IV	50mm
299	HP HTR 6A CTRL ARG 3 IV	50mm
300	HP HTR 6A CTRL ARG 1 IV	25mm
301	HP HTR 6A CTRL ARG 2 IV	25mm
302	HP HTR 6A CTRL ARG 3 IV	25mm
303	HP HTR 5A CTRL ARG 1 IV	50mm
304	HP HTR 5A CTRL ARG 2 IV	50mm
305	HP HTR 5A CTRL ARG 3 IV	50mm
306	HP HTR 5A CTRL ARG 1 IV	50mm
307	HP HTR 5A CTRL ARG 2 IV	50mm
308	HP HTR 5A CTRL ARG 3 IV	50mm
309	HP HTR 5A EMERGENCY DRN LINE DRN IV	200mm
310	HP HTR 5A EMERGENCY DRN LINE DRN/DTR IV	50mm
311	HP HTR 5A DRN/DST IV	50mm

312	HP HTR 5A CTRL ARGV VENT/DTR IV	25mm
313	HP HTR 6A CTRL ARGV VENT/DTR IV	25mm
314	HP HTR 6A C R/H STM INL NRV TOP COVER PLUG REMOVED	250mm
315	HP HTR 6A DRN/HP 5A DRN IV	25mm
316	HP HTR 5A VENT/EV IV	25mm
317	HP HTR 5A VENT/DTR IV	25mm
318	HP HTR 6A VENT/EV IV	25mm
319	HP HTR 6A VENT/DTR IV	25mm
320	HP HTR 6A LEVEL TX IV	25mm
321	HP HTR 6A LEVEL TX IV	50mm
322	HP HTR 6A LEVEL CTRL IV	50mm
323	HP HTR 6A LEVEL CTRL IV	50mm
324	HP HTR 5A LEVEL TX IV	50mm
325	HP HTR 5A LEVEL TX IV	50mm
326	HP HTR 5A LEVEL CTRL IV	50mm
327	HP HTR 5A LEVEL CTRL IV	50mm
328	HP HTR 6A CTRL ARGV DRN IV	50mm
329	HP HTR 6A CTRL ARGV DRN IV	50mm
330	HP HTR 5A CTRL ARGV DRN IV	50mm
331	HP HTR 6A CTRL ARGV 1/COND IV	25mm
332	HP HTR 6A CTRL ARGV 2/COND IV	25mm
333	HP HTR 6A CTRL ARGV 3/COND IV	25mm
334	HP HTR 5A CTRL ARGV 1/COND IV	25mm
335	HP HTR 5A CTRL ARGV 2/COND IV	25mm
336	HP HTR 5A CTRL ARGV 3/COND IV	25mm
337	HP HTR 5A CTRL ARGV "1" LVL SW/IND DRN IV	15mm
338	HP HTR 5A CTRL ARGV "2" LVL SW/IND DRN IV	15mm
339	HP HTR 5A CTRL ARGV "3" LVL SW/IND DRN IV	15mm

340	HP HTR 6A CTRL ARGT "1" LVL SW/IND DRN IV	15mm
341	HP HTR 6A CTRL ARGT "2" LVL SW/IND DRN IV	15mm
342	HP HTR 6A CTRL ARGT "3" LVL SW/IND DRN IV	15mm
343	HP HTR 5A EMERGENCY DRN LINE DRN/DTR IV	25mm
344	HP HTR 5A EMERGENCY DRN LINE DRN/EV IV	25mm
345	HP HTR 5A EMERGENCY DRN LINE DRN/DTR IV	25mm
346	HP HTR 5A DRN/DST IV	25mm
347	HP HTR 5A VENT/COND IV	25mm
348	HP HTR 6A DRN/HTR 5A IV	25mm
349	HP HTR 6A DRN/HTR 5A IV BP	25mm
350	HP HTR 6A DRN/HTR 5A DRN/EV IV	25mm
351	HP HTR 6A DRN/HTR 5A DRN/DTR IV	25mm
352	HP HTR 6A EM DRN/HOT COND IV BP	25mm
353	HP HTR 6A VENT / COND IV	25mm
354	HP HTR 6A EMERGENCY DRN LINE DRN/EV IV	25mm
355	HP HTR 6A EMERGENCY DRN LINE DRN/DTR IV	25mm
356	HP HTR 6A PRESS DROP SUB COOLING ZONE DIFF IND IV	15mm
357	HP HTR PRESS DROP SUB-COOLING ZONE DIFF PRESS SW/IND IV	15mm
358	HP HTR 6A HTR 5A PP IV	15mm
359	HP HTR 5A FWT PP IV	15mm
360	HP HTR 6A BS PTX IV	15mm
361	HP HTR 6A BS PP IV	15mm
362	HP HTR 6A C R/H STM INL DIFF PRESS IND/SW IV	15mm
363	HP HTR 6A C R/H STM INL DIFF PRESS IND/SW IV	15mm
364	HP HTR 6A PI IV	15mm
365	HP HTR 6A PP IV	15mm
366	HP HTR 5A BS PTX IV	15mm
367	HP HTR 5A PP IV	15mm

368	HP HTR 5A PI IV	15mm
369	HP HTR 5A PP IV	15mm
370	HP HTR 6A DRN/DTR IV	25mm
371	HP HTR 6A C R/H STM INL NRV TOP COVER PLUG VENT/DTR IV	250mm
372	HP HTR 6A PI IV	15mm
373	HP HTR 6B EMERGENCY DRN LINE DRN IV	25mm
374	HP HTR 6B EMERGENCY DRN LINE DRN/DTR IV	25mm
375	HP HTR 6B DRN/HTR 5B IV	25mm
376	HP HTR 6B DRN/HTR 5B IV	25mm
377	HP HTR 5B EMERGENCY DRN LINE DRN IV	25mm
378	HP HTR 5B DRN IV	25mm
379	HP HTR 5B CTRL ARGV 1 IV	50mm
380	HP HTR 5B CTRL ARGV 2 IV	50mm
381	HP HTR 5B CTRL ARGV 3 IV	50mm
382	HP HTR 5B CTRL ARGV 1 IV	50mm
383	HP HTR 5B CTRL ARGV 2 IV	50mm
384	HP HTR 5B CTRL ARGV 3 IV	50mm
385	HP HTR 6B CTRL ARGV 1 IV	50mm
386	HP HTR 6B CTRL ARGV 2 IV	50mm
387	HP HTR 6B CTRL ARGV 3 IV	50mm
388	HP HTR 6B CTRL ARGV 1 IV	50mm
389	HP HTR 6B CTRL ARGV 2 IV	50mm
390	HP HTR 6B CTRL ARGV 3 IV	50mm
391	HP HTR 6B DRN/HTR 5B DRN IV	50mm
392	HP HTR 5B DRN/FWT IV	50mm
393	HP HTR 6B C R/H STM INL NRV TOP COVER PLUG REMOVED	250mm
394	HP HTR 5B EMERGENCY DRN LINE DRN/DTR IV	25mm
395	HP HTR 5B EMERGENCY DRN LINE DRN/DTR IV	25mm

396	HP HTR 5B DR/EV IV	25mm
397	HP HTR 5B DRN/DTR IV	25mm
398	HP HTR 5B DRN TO DST DRN IV	25mm
399	HP HTR 6B EMERGENCY DRN/HOT COND IV BP	25mm
400	HP HTR 6B DRN/HTR 5B DRN/DTR IV	25mm
401	HP HTR 6B DRN/HTR 5B DRN/EV IV	25mm
402	HP HTR 6B DRN/HTR 5B DRN/DTR IV	25mm
403	HP HTR 6B DRN/HTR 5B IV BP	25mm
404	HP HTR 6B DRN/HTR 5B IV BP	25mm
405	HP HTR 6B EMERGENCY DRN LINE DRN/EV IV	25mm
406	HP HTR 6B EMERGENCY DRN LINE DRN/DTR IV	25mm
407	HP HTR 5B VENT/COND IV	25mm
408	HP HTR 6B VENT/COND IV	25mm
409	HP HTR 6B LEVEL CTRL IV	25mm
410	HP HTR 6B LEVEL CTRL IV	25mm
411	HP HTR 6B LEVEL CTRL TX IV	25mm
412	HP HTR 6B LEVEL TX IV	25mm
413	HP HTR 6B CTRL ARG1/COND IV	25mm
414	HP HTR 6B CTRL ARG2/COND IV	25mm
415	HP HTR 6B CTRL ARG1 DRN/DTR IV	25mm
416	HP HTR 6B CTRL ARG3/COND IV	25mm
417	HP HTR 5B LEVEL TX IV	15mm
418	HP HTR 5B LEVEL TX IV	15mm
419	HP HTR 5B LEVEL CTRL IV	15mm
420	HP HTR 5B LEVEL CTRL IV	15mm
421	HP HTR 5B CTRL ARG1 LVL SW/IND DRN IV	15mm
422	HP HTR 5B CTRL ARG2 LVL SW/IND DRN IV	15mm
423	HP HTR 5B CTRL ARG3 LVL SW/IND DRN IV	15mm

424	HP HTR 6B CTRL ARG1 1 LVL SW/IND DRN IV	15mm
425	HP HTR 6B CTRL ARG1 2 LVL SW/IND DRN IV	15mm
426	HP HTR 6B CTRL ARG1 3 LVL SW/IND DRN IV	15mm
427	HP HTR 5B CTRL ARG1 DRN/DTR IV	15mm
428	HP HTR 5B CTRL ARG1 1/COND IV	15mm
429	HP HTR 5B CTRL ARG1 2/COND IV	15mm
430	HP HTR 5B CTRL ARG1 2/COND IV	15mm
431	HP HTR 6B/HP HTR PP IV	15mm
432	HP HTR 6B PRESS DROP SUB-COOLING ZONE DIFF	15mm
433	HP HTR 6B PRESS DROP SUB-COOLING ZONE DIFF	15mm
434	HP HTR 5B DRN TO DST PP IV	15mm
435	HP HTR 6B C R/H STM INL DIFF PRESS IND/SW IV	15mm
436	HP HTR 6B C R/H STM INL DIFF PRESS IND/SW IV	15mm
437	HP HTR 6B PI IV	15mm
438	HP HTR 6B C R/H STM INL PP IV	15mm
439	HP HTR 6B PP IV	15mm
440	HP HTR 6B C R/H STM INL PRESS TX IV	15mm
441	HP HTR 5B PP IV	15mm
442	HP HTR 5B PI IV	15mm
443	HP HTR 5B BS PP IV	15mm
444	HP HTR 5B BS PTX IV	15mm
445	HP HTR 5B VENT IEV IV	25mm
446	HP HTR 6B VENT IEV IV	25mm
447	HP HTR 6B VENT DTR IV	25mm
448	HP HTR 5B VENT DTR IV	25mm
449	HP HTR 5B CTRL ARG1 VENT/DTR IV	25mm
450	HP HTR 6B EMERGENCY DRN LINE DRN/DTR IV	25mm
451	HP HTR 6B FW OUTL P/P IV	15mm

452	HP HTR 5B FW	25mm
453	HP HTR 5B EMERGENCY DRN LINE DRN/EV IV	25mm
454	CONDENSATE POLISHER A	300mm
455	CONDENSATE POLISHER B	300mm
456	CONDENSATE POLISHER C	300mm
457	POLISHER A VENT BIN CNTRL V/V	50mm
458	CONDS POLISHER 1 A DRN WTR CTRL V/V	50mm
459	CONDS POLISHER 1A AIR & TRF WTR CTRLV/V	50mm
460	CONDS POLISHER 1 A FIL WTR INL CTRL V/V	300mm
461	Conds polisher 1A Inl isol bin ctrl v/v	300mm
462	POLISHER 1A OUTL ISOL BIN CTRL V/V	300mm
463	CONDS POLISHER 1 B VENT BIN CTRL V/V	50mm
464	CONDS POLISHER 1B RINSE WTR OUT LCTRL V/V	100mm
465	CONDS POLISHER 1B AIR & TRF WTR CTRL V/V	100mm
466	CONDS POLISHER 1B FIL WTR INLET CTRLV/V	300mm
467	Conds polisher 1B Inl isol bin ctrl v/v	300mm
468	CPP 1B OUTL ISOL BIN CTRL V/V	300mm
469	CONDS POLISHER 1 C VENT BIN CTRL V/V	50mm
470	CONDS POLISHER 1 C DRN WTR OUTL CTRL V/V	100mm
471	CONDS POLISHER 1C AIR & TRF WTR CTRL V/V	100mm
472	CONDS POLISHER 1 C FIL WTR INL CTRL V/V	300mm
473	Conds polisher 1C Inl isol bin ctrl v/v	300mm
474	CPP 1C OUTL BIN CTRL V/V (MOVB)	300mm
475	CPP EMERGENCY BYP BIN CNTRL VV	50mm
476	CPP BYPASS MOD CNTRL V/V	300mm
477	CPP RESIN MIXING AIR PRESS REG V/V	50mm
478	CPP DIRTY RESIN TRN FIL LINE VENT VLV	50mm

479	CPP DIRTY RESIN TRN WTR SEC LINE VENT VLV	50mm
480	CPP REFILL LINE VENT VLV	50mm
481	CPP DIRTY RESIN TRNS WTR SEC LINE VENT VLV	50mm
482	CONDENSATE POLISHER A OUTLET RESIN TRAP	300mm
483	CONDENSATE POLISHER B OUTLET RESIN TRAP	300mm
484	CONDENSATE POLISHER C OUTLET RESIN TRAP	300mm
485	BFPT EXTRACTION PUMP SUC STRAINER A	300mm
486	BFPT EXTRACTION PUMPS SUC STRAINER B	300mm
487	BFPT SAE AIR VALVES	200mm
488	BFPT SAE AIR VALVES	200mm
489	BFPT SAE AIR VALVES	200mm
490	BFPT SAE AIR VALVES	200mm
491	BFPT CONDENSER LEVEL CONTROL VALVE	250mm
492	BFPT VACUUM BREAKER I/V	80mm
493	BFPT CDV SPRAY VALVE	50mm
494	BFPT CONDENSER LEVEL CONTROL VALVE	250mm
495	BFPT EP A DISCH NRV	100mm
496	BFPT EP B DISCH NRV	100mm
497	BFPT EP A SUC IV	200mm
498	BFPT EP B SUC IV	200mm
499	BFPT EP A DISCH IV	150mm
500	BFPT EP B DISCH IV	150mm
501	BFPT EP A RECIRC IV	50mm
502	BFPT EP B RECIRC IV	50mm
503	BFPT COND CTRL ARGV IV	25mm
504	BFPT COND DRN/DTR IV	25mm
505	BFPT COND CTRL ARGV FLG IV	25mm

506	MC/BFPT INTERCONNECTOR	300mm
507	BFPT CONDENSER	300mm
508	BURSTING DISCS	100mm
509	BFPT PIPE DRN STM TRAP	100mm
510	BFPT PIPE DRN STM TRAP	100mm
511	OIL COOLERS CW INLET AND OUTLET ISOLATING VALVES	150mm
512	OIL COOLERS CW INLET AND OUTLET ISOLATING VALVES	150mm
513	OIL COOLERS CW INLET AND OUTLET ISOLATING VALVES	150mm
514	OIL COOLERS CW INLET AND OUTLET ISOLATING VALVES	150mm
515	EFP A LEAK OFF NRV	80mm
516	EFP B LEAK OFF NRV	80mm
517	SFP LEAK OFF NRV	80mm
518	BFPT BOOSTER P/P COOLING INLET I/V (25 mm)	25mm
519	BFPT BOOSTER P/P COOLING OUTLET I/V (25 mm)	25mm
520	BFPT A BOOSTER P/P COOLING INLET I/V (25 mm)	25mm
521	BFPT BOOSTER P/P COOLING OUTLET I/V (25 mm)	25mm
522	EFP B BOOSTER P/P COOLING INLET I/V (25 mm)	25mm
523	EFP B BOOSTER P/P COOLING OUTLET I/V (25 mm)	25mm
524	EFP A LEAK OFF CONTROL VALVE (100 mm)	100mm
525	EFP B LEAK OFF CONTROL VALVE (100 mm)	100mm
526	EFP A BALANCE LINE IV (100 mm)	100mm
527	EFP B BALANCE LINE IV (100 mm)	100mm
528	SFP BALANCE LINE IV (100 mm)	100mm

529	EFP A ATT. SPRAYWATER HIV (65 mm)	65mm
530	EFP B ATT. SPRAYWATER HIV (65 mm)	65mm
531	SFP ATT. SPRAYWATER HIV (80 mm)	80mm
532	SFP LEAK OFF VALVE (130 mm)	130mm
533	EFP A SUC DRN / EV V (100 mm)	100mm
534	EFP A SUC DRN / DTR V	25mm
535	EFP A SUC DRN IV (100 mm)	100mm
536	EFP A SUC DRN / DTR IV (25 mm)	25mm
537	EFP B SUC DRN / EV V (100 mm)	100mm
538	EFP B SUC DRN / DTR V (100 mm)	100mm
539	EFP B SUC DRN IV (100 mm)	100mm
540	EFP B SUC DRN / DTR IV (25 mm)	25mm
541	SFP SUC DRN / EV V (100 mm)	100mm
542	SFP SUC DRN / DTR V (100 mm)	100mm
543	SFP SUC DRN IV (100 mm)	100mm
544	SFP SUC DRN / DTR IV (25 mm)	25mm
545	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
546	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
547	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
548	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
549	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
550	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
551	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
552	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
553	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm

554	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
555	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
556	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
557	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
558	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
559	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
560	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
561	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
562	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
563	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
564	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
565	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
566	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
567	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
568	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
569	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
570	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
571	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
572	EFP A SUCTION VALVE (400 mm)	400mm
573	EFP B SUCTION VALVE (400 mm)	400mm
574	SFP SUCTION VALVE (500 mm)	500mm
575	MAIN FEED REG VALVE (400 mm)	400mm
576	MAIN FEED REG VALVE BYPASS (40 mm)	50mm

577	FEED REG CONTROL VALVE A (250 mm)	250mm
578	FEED REG CONTROL VALVE B (250 mm)	250mm
579	FEED REG MOTOR ISOLATING V/V A (250 mm)	250mm
580	FEED REG MOTOR ISOLATING V/V B (250 mm)	250mm
581	FEED REG MOTOR ISOLATING V/V A BYPASS (25mm)	25mm
582	FEED REG MOTOR ISOLATING V/V B BYPASS (25mm)	25mm
583	FEED REG HAND ISOLATING V/V A (250 mm)	250 mm
584	FEED REG HAND ISOLATING V/V B (250 mm)	250 mm
585	FEED REG HAND ISOLATING V/V A BYPASS (25mm)	25mm
586	FEED REG HAND ISOLATING V/V B BYPASS (25 mm)	25 mm
587	SEAL WATER ISO V/V 'A' (SUCTION) (125mm)	125mm
588	SEAL WATER ISO V/V 'B' (SUCTION) (125mm)	125mm
589	SEAL WATER ISO V/V 'A' (DISCH) (80mm)	80mm
590	SEAL WATER ISO V/V 'B' (DISCH) - (80mm)	80mm
591	SEAL WATER ISO V/V 100% BFP (50mm)	50mm
592	SEAL WATER ISO V/V 100% BFP (50mm)	50mm
593	SEAL WATER BYP ISO V/V 100% BFP (50mm)	50mm
594	SEAL WATER ISO V/V 100% EFP A (40 mm)	40mm
595	SEAL WATER ISO V/V 100% EFP A (40 mm)	40mm
596	SEAL WATER BYP ISO V/V 100% EFP (40 mm)	40mm
597	SEAL WATER ISO V/V 100% EFP B (40 mm)	40mm
598	SEAL WATER ISO V/V 100% EFP B (40 mm)	40mm
599	SEAL WATER BYP ISO V/V 100% EFP (40 mm)	40mm
600	GLAND DRAIN ISO V/V 'A' (SUCTION) - (80mm)	80mm
601	GLAND DRAIN ISO V/V 'B' (SUCTION) - (80mm)	80mm
602	GLAND DRAIN ISO V/V 'A' (DISCH) - (80mm)	80mm
603	GLAND DRAIN ISO V/V 'B' (DISCH) - (80mm)	80mm
605	SEAL WATER NON RETURN 'A' - (80mm)	80mm

606	SEAL WATER NON RETURN 'B' - (80mm)	80mm
607	GLAND DRAIN NON RETURN V/V 'A' - (80mm)	80mm
608	GLAND DRAIN NON RETURN V/V 'B' - (80mm)	80mm
609	SEAL WATER CNTRL V/V ON EFP A	80mm
610	SEAL WATER CNTRL V/V ON EFP B	80mm
611	SEAL WATER CNTRL V/V ON SFP	80mm
612	BLR AUX COOLING RETURN STRAINER MAIN	300mm
613	BLR AUX COOLING RETURN STRAINER STANDBY	250mm
614	BLR AUX COOLING TANK SUPPLY STRAINER	250mm
615	BLR AUX COOLING RETURN CONTROL V/V (150MM)	150mm
616	BLR AUX COOLING RETURN IV 1 (150MM)	150mm
617	BLR AUX COOLING RETURN IV 2 (150MM)	150mm
618	BLR AUX COOLING SUP IV 1	150mm
619	BLR AUX COOLING SUP IV 2 (150MM)	150mm
620	BLR AUX COOLING RETURN BYPASS V/V (150MM)	150mm
621	BLR AUX COOLING SUP BYPASS V/V (150NB)	150mm
622	BLR AUX COOLING RETURN BYPASS V/V (50MM)	50mm
623	BLR AUX CLG H/EXCH MAIN CW SUP IV (300MM)	300mm
624	BLR AUX CLG H/EXCH CW IV (300MM)	300mm
625	Blr Aux Clg H/EXCH A CW Supply IV (8")	200mm
626	Blr Aux Clg H/EXCH Supply IV (8")	200mm
627	BLR AUX CLG H/EXCH A CW RTN IV (250MM)	250mm
628	BLR AUX CLG H/EXCH B CW RTN IV (250MM)	250mm
629	Blr Aux Clg Wtr Heat A Outlet IV (8")	200mm
630	Blr Aux Clg Wtr Heat Exchanger A INL IV (8")	200mm
631	Blr Aux Clg Wtr Heat Exchanger B INL IV (8")	200mm
632	Blr Aux Clg Wtr Heat Exchanger B OUTL IV (8")	200mm

633	Blr Aux Clg Clg Rtn IV (10")	250mm
634	Blr Aux Clg Clg Rtn IV (10")	250mm
635	Blr Aux Clg Clg Rtn Byp IV (10")	250mm
636	Blr Aux Clg Clg Rtn Byp IV (10")	250mm
637	DEMIN WATER MAKE-UP TANK	400mm
638	COLD REHEAT SUPPLY IV	200mm
639	AUX STEAM SUPPLY NRV	200mm
640	AUX STEAM SUPPLY IV	200mm
641	AUX STEAM MANIFOLD DRN TRAP BYPASS V/V	25mm
642	AUX STEAM MANIFOLD DRN STEAM	50mm
643	AUX STEAM MANIFOLD DRAIN TRAP INLET IV	50mm
644	AUX STEAM MANIFOLD DRN TRAP OUTLET IV	50mm
645	HP/IP SUPPLY VLV	50mm
646	HP/IP DUMP VLV	300mm
647	HP/IP DUMP DESUPERHEATER SPRY WATER VLV	50mm
648	LP SUPPLY VALVE	50mm
649	LP DESUPERHEATER SPRAY WATER VLV	50mm
650	HP STEAM CHEST LH UPR DRN MARTYR IV	50mm
651	HP LWR LOOP PIPE DRAIN MARTYR ISOL V/V	50mm
652	HP CYL LH COLD REHEAT DRAIN MARTYR ISOL V/V	50mm
653	HP CYL RH COLD REHEAT DRAIN MARTYR ISOL V/V	50mm
654	IP STEAM CHEST LH UPR DRAIN MASTER ISOL V/V	50mm
655	IP STEAM CHEST RH UPR DRAIN MASTER ISOL V/V	50mm
656	IP LOWER LOOP PIPE DRAIN MARTYR ISOL V/V	50mm
657	LH COLD REHEAT EMERGENCY DRAIN NOZZLE TRAP ISOL V/V	50mm

658	GESTRA DRAIN FROM LH COLD REHEAT ISOL V/V	50mm
659	LH COLD REHEAT EMERGENCY DRAIN NOZZLE TRAP ISOL V/V	50mm
660	GESTRA DRAIN FROM RH COLD REHEAT ISOL V/V	50mm
661	GESTRA DRAIN FROM RH COLD REHEAT ISOL V/V	50mm
662	GESTRA DRAIN FROM LH COLD REHEAT ISOL V/V	50mm
663	LP HOOD SPRAY DUPLEX STRAINER	100mm
664	OVERHAUL LP TURBINE SPRAY SUPPLY ISOL V/V	100mm
665	OVERHAUL LP TURBINE EXHAUSTER SPRAY COOLING NOZZLE	25mm
666	OVERHAUL LP TURBINE SPRAY SUPPLY NON RETURN V/V	100mm
667	OVERHAUL LP TURBINE SPRAY PRESS SUSTAINING V/V	25mm
668	OVERHAUL LP TURBINE SPRAY CONTROL V/V	100mm
669	OVERHAUL LP TURBINE SPRAY CONTROL OUTLET ISOL V/V	100mm
670	OVERHAUL LP TURBINE SPRAY CONTROL BYPASS V/V	100mm
671	OVERHAUL DC EMERG SPRW P/P SUCT ISOL V/V	100mm
672	OVERHAUL DC EMERG SPRW P/P DISCHARGE ISOL V/V	100mm
673	OVERHAUL DC EMERGENCY SPRAY WATER PUMP DISCHARGE NON RETURN V/V	100mm
674	OVERHAUL LP EXHAUST SPRW FILTER DIFF PRESS IND ISOL V/V	25mm
675	OVERHAUL DC EMERG SWTR P/P DRAIN ISOL V/V	25mm
676	OVERHAUL CONDENSATE EXTRACTION P/P PRESS SW ISOL V/V	25mm
677	OVERHAUL CONDENSATE EXTRACTION P/P PRESS SW ISOL V/V	25mm
678	OVERHAUL LP EXHAUST SPRAY WTR SUPPLY STRAINER DIFF PRESS IND	100mm
679	OVERHAUL DUPLEX STRAINER VENT ISOL V/V	25mm
680	OVERHAUL LP SPRAY COOLING WTR FLOW IND	25mm
681	OVERHAUL DUPLEX STRAINER DRAIN ISOL V/V	25mm
682	OVERHAUL DUPLEX STRAINER VENT ISOL V/V	25mm

683	OVERHAUL LP TURB SPRAY INLET ISOL V/V	25mm
684	OVERHAUL DUPLEX STRAINER DRAIN ISOL V/V	25mm
685	OVERHAUL EMRG SWTR SUPPLY P/P DISCHARGE PRESS SW ISOL V/V	25mm
686	OVERHAUL LP EXHAUST SPRW FILTER DIFF PRESS IND ISOL V/V	25mm
687	OVERHAUL LP TURBINE SPRAY SUPPLY DRAIN ISOL V/V	25mm
688	OVERHAUL LP TURBINE SPRAY SUPPLY DRAIN ISOL V/V	25mm
689	OVERHAUL DC EMRG SPRW SUPPLY P/P DISCHARGE PRESS SW ISOL V/V	25mm
690	OVERHAUL CONDENSATE EXTRACTION P/P OUTLET PRESS SWITCH ISOL V/V	25mm
691	OVERHAUL DC EMRG SPRW SUPPLY P/P DISCHARGE PRESS SW ISOL V/V	25mm
692	LP DEMIN RANGE TO RFWT INLET V/V	300mm
693	LP HTR 3 CTRL ARGV VENT V/V	25mm
694	EFP A ATT SPRAYWATER NRV	80mm
695	EFP B ATT SPRAYWATER NRV	80mm
696	SFP REHEAT SPRAYWATER NRV	80mm
697	BLR AUX COOLING SUP CONTROL V/V (150MM)	150mm
698	BLR AUX COOLING SUP DRAIN CONTROL V/V (50MM)	50mm
699	BLR AUX COOLING SUP DRAIN V/V (50MM)	50mm
700	CPP RINSE WTR DRAIN BIN CTRL V/V	100mm
701	U4 CPP CLN RES TRF INLET BIN CTRL V/V	100mm
702	CLEAN RES TRF TO U5 TO 6 BIN CTRL V/V	100mm
703	DIRTY RES TRF FROM U5 TO 6 BIN CTRL V/V	100mm
704	U4 CPP DTY RES TRF OUTL BIN CTRL V/V	100mm
705	U4 CPP DTY RES TRF LINES FLUSH WTR CTRLV/V	100mm
706	U4 CPP CLN RESTRF LINES FLUSH WTR CTRLV/V	100mm
707	CPP MIXING AIR & DTY RESTRF CTRL V/V	100mm

708	CPP DTY RES TRF WTR SUPL BIN CTRL V/V	100mm
709	CPP MIXING & DTY RESTRF AIR SUPL CTRLV/V	100mm
710	CPP CLN RESTRF WTR TO RECOV WTR CTRLV/V	100mm
711	CPP DIRTY RES TRF LINE FIL BIN CTRL V/V	100mm
712	CLN RES TRF WTR TO WASTE BIN CTRL V/V	100mm
713	CPP REFILL BIN CONTROL V/V	100mm
714	CONDS POLISHER 4 A INL MOD CTRL V/V (replace)	50mm
715	CONDS POLISHER 4 A CLN RESIN CTRL V/V	50mm
716	CONDS POLISHER 4 A DTY RES OUTL CTRL V/V	50mm
717	CONDS POLISHER 4 A SEC RES TRF CTRL V/V	50mm
718	CONDS POLISHER 4 A OUTL MOD CONTROL V/V (replace	50mm
719	CONDS POLISHER 4 B INL MOD CTRL V/V (replace)	50mm
720	CONDS POLISHER 4 B CLN RESIN CTRL V/V	50mm
721	CONDS POLISHER 4 B DTY RES OUTL CTRL V/V	50mm
722	CONDS POLISHER 4 B SEC RES TRF CTRL V/V	50mm
723	CONDS POLISHER 4 B OUTL MOD CONTROL V/V (replace	50mm
724	CONDS POLISHER 4 C INL MOD CTRL V/V (replace)	50mm
725	CONDS POLISHER 4 C CLN RESIN CTRL V/V	50mm
726	CONDS POLISHER 4 C DTY RES OUTL CTRL V/V	50mm
727	CONDS POLISHER 4 C SEC RES TRF CTRL V/V	50mm
728	CONDS POLISHER 4 C OUTL MOD CONTROL V/V (replac	50mm
729	CLEAN RES TRF WTR OUTL LINE VENT V/V	50mm
730	CPP DIRTY RES TRF WTR SUPPLY LINE VNT V/V	50mm
731	CPP MIXNG AIR RES TRF SUPL LINE DRN V/V	50mm

732	CPP INLET SAMPLING LINE SECONDARY COOLER	50mm
733	CPP INL SMPLN LINE LP CAPLRY SMPLR CLR	50mm
734	CPP A SAMPLING LINE SECONDARY COOLER	50mm
735	CPP A SMPLN LINE LP CAPILLARY SMPLR CLR	50mm
736	CPP B SAMPLING LINE SECONDARY COOLER	50mm
737	CPP B SMPLN LINE LP CAPILLARY SMPLR CLR	50mm
738	CPP C SAMPLING LINE SECONDARY COOLER	50mm
739	CPP C SMPLN LINE LP CAPILLARY SMPLR CLR	50mm
740	CPP OUTL SAMPLING LINE SECONDARY COOLER	50mm
741	CPP OUTL SMPLN LINE LP CAPLRY SMPLR CLR	50mm
742	HOT COND SAMPLING LINE SECONDARY COOLER	50mm
743	CIRC WTR SMPLN LINE DISTRIBUTION MFLD	50mm
744	CIRC WTR SMPLN LINE DISTRIBUTION MFLD	50mm
745	CPP INL SMPLN LINE DISTRIBUTION MFLD	50mm
746	CPP OUTL SMPLN LINE DISTRIBUTION MFLD	50mm
747	HOT COND SMPLN LINE DISTRIBUTION MFLD	50mm
748	HP HTR 5B FW OUTL PP IV	25mm
749	HP HTR 5B FW INL DRN IV	25mm
750	HP HTR 5B FW INL DRN/DTR IV	25mm
751	HP HTR 6B FW OUTL DRN/DTR IV	25mm
752	HP HTR 6B FW OUTL DRN/DTR IV	25mm
753	HP HTR 5B FW INL DRN/EV IV	25mm
754	HP HTR 6B FW OUTL P/P IV	25mm
755	HP HTR 5B EMERGENCY DRN LINE DRN/EV IV	25mm
756	BLR AUX CLG P/P A NRV	25mm
757	BLR AUX CLG P/P B NRV	25mm
758	BLR AUX CLG P/P C NRV	25mm

DUVHA U1 IN TURBINE VALVES (72)		
QIP	TASK NAME	SIZE
MAIN CONDENSER		
1	CW DOORS (3 Off)	500mm
2	CW DOORS (3 Off)	500mm
3	MAIN CONDENSER	500mm
4	ATMOSPHERIC TANK	300mm
TAPROGGE SYSTEM		
5	TAPROGGE SCREEN _ LOWER	80mm
6	TAPROGGE SCREEN _ UPPER	80mm
7	T2 SUCTION VALVES	80mm
8	T2 SUCTION VALVES	80mm
9	T2 SUCTION VALVES	80mm
10	T2 SUCTION VALVES	80mm
11	T2 SUCTION VALVES	80mm
12	T2 SUCTION VALVES	80mm
13	T2 SUCTION VALVES	80mm
14	T2 SUCTION VALVES	80mm
15	TAPROGGE ACCUMULATOR INL IV	100mm
16	TAPROGGE ACCUMULATOR OUTL IV	100mm
LP HEATER 3		
17	LPH 3 DRN PMP SUC STRAINER	300mm
18	LPH 3 DRN PMP SUC STRAINER	300mm
CONDENSATE EXTRACTION PUMP (CEP)&DA		
19	CLC(STROKE CHECK AND LEAK TEST TO BE WITNESS BY ENGINEER)	300mm
20	DLC	300mm
HP HEATERS		
21	HP HTR 5A (STEAM SIDE)	300mm

22	HP HTR 6A (STEAM SIDE)	300mm
23	HP HTR 5B (STEAM SIDE)	300mm
24	HP HTR 6B (STEAM SIDE)	300mm
CONDENSATE EXTRACTION PUMPS		
25	EXT P/P A 1ST STAGE DISCH NRV	400mm
26	EXT P/P B 1ST STAGE DISCH NRV	400mm
27	EXT P/P 2ND STAGE DISCH NRV	400mm
28	EXT P/P 2ND STAGE DISCH NRV	400mm
GSC AND DRAINS TANK (Non Valve)		
29	GLAND STEAM CONDENSER	800mm
30	DRAIN TANK	800mm
31	GSC DRAIN TANK DRN TO COND V/V	25mm
SECONDARY CW SYSTEM (SCW)		
32	SEC CW (GEN)P/P B DISCH IV	400mm
33	SEC CW (GEN) EXCESS RETURN V	400mm
34	SEC CW (GEN) EXCESS RETURN V IV	400mm
35	SEC CW (GEN) P/P A DISCH NRV	400mm
36	SEC CW (GEN) P/P A DISCH IV	400mm
37	SEC CW (GEN) P/P B DISCH NRV	400mm
38	SEC CW (GEN)P/P B DISCH IV	400mm
BFPT SAE AIR VALVES		
39	BFPT SAE ISOLATING VALVE A	300mm
40	BFPT SAE AIR VALVES	300mm
41	BFPT SAE AIR VALVES	300mm
42	BFPT SAE AIR VALVES	300mm
43	MC/BFPT INTERCONNECTOR	300mm
44	BFPT CONDENSER LEVEL CONTROL VALVE	200mm
45	BFPT VACUUM BREAKER I/V	100mm

46	BFPT CDV SPRAY VALVE	50mm
47	BFPT CONDENSER LEVEL CONTROL VALVE	200mm
48	BFPT CONDENSER	400mm
SCW (EJECTOR SYSTEM)		
49	WAE A1 CW Inlet CTRL vlv	300mm
50	WAE B1 CW Inlet CTRL vlv	300mm
51	WAE B2 WTR INLET VALVE	300mm
52	WAE A2 CW Inlet CTRL vlv	300mm
53	WAE B2 CW Inlet CTRL vlv	300mm
54	WAE A1 CW INLET STRAINER	300mm
55	WAE B1 CW INLET STRAINER	300mm
56	WAE A2 CW INLET STRAINER	300mm
57	WAE B2 CW INLET STRAINER	300mm
58	WAE A1 SUCTION CNTRL V/V	250mm
59	WAE A2 SUCTION CONTROL V/V	250mm
60	WAE B1 SUCTION CONTROL V/V	250mm
61	WAE B2 SUCTION CNTRL VV	250mm
62	WAE A2 Bellow (2 off)	250mm
63	WAE A1 Bellow (2 off)	250mm
64	WAE B1 Bellow (2 off)	250mm
65	WAE B2 Bellow (2 off)	250mm
66	SEC CW (GEN) EXCESS RETURN VALVE	400mm
67	SEC CW (GEN) EXCESS RETURN ISOLATING VALVE	400mm
GLAND STEAM SYSTEM		
68	HP/IP DUMP VALVE	300mm
LP SPRAY COOLING SYSTEM		
69	LP SPRAY COOLING DUPLEX STRAINER	100mm
70	HP HTR 6A EMERG DRN/HOT COND CNTRL VALVE	300mm

71	HP HTR 6B EMERG DRN/HOT COND CNTRL VALVE	300mm
72	HP HTR 5B DRN TO DST CNTRL VALVE	300mm

Duvha Boiler Valves GO/MGO/IR (269)		
QIP	TOTAL VALVES	SIZE
	BOILER PRESSURE PARTS : SOOTBLOWER VALVE STATION	
1	S/H HAND ISOLATING VLV	200mm
2	R/H HAND ISOLATING VLV	200mm
3	R/H NRV	200mm
4	S/H MOT STOP VLV	50mm
5	R/H MOT STOP VLV	50mm
6	S/H STRAINER	200mm
7	R/H STRAINER	200mm
8	S/H REG VLV _cut out	200mm
9	S/H REG VLV _cut out	200mm
10	S/H BALANCE LINE VLV _cut out	25mm
11	R/H BALANCE LINE V/V _cut out	25mm
	SOOTBLOWER SECTION VALVE	
12	S/BLWR LHB MOT	150mm
13	S/BLWR LHB MOT	150mm
14	S/BLWR LHB MOT	150mm
15	S/BLWR LHB MOT	150mm
16	S/BLWR RHT MOT	150mm
17	A/H S/BLWR MOT	150mm

18	A/H S/BLWR MOT	150mm
19	A/H S/BLWR MOT	150mm
20	A/H S/BLWR MOT	150mm
	SOOTBLOWER DRAIN LINES	
21	S/BLWR LHB DRAIN	50mm
22	S/BLWR LHT DRAIN	50mm
23	S/BLWR RHB DRAIN	50mm
24	S/BLWR RHT DRAIN	50mm
25	S/BLWR LHB DRAIN	50mm
26	S/BLWR LHB DRAIN	50mm
27	S/BLWR S/H DRAIN	50mm
28	S/BLWR S/H DRAIN	50mm
	LP BYPASS VALVE SYSTEM	
29	LP BYPASS SW ISOL VV(150MM PEGLER & LOUDEN)	150mm
30	LP BYPASS WARNING DRN VALVE RH	50mm
31	LP BYPASS WARNING DRN VALVE LH	50mm
32	LP BYPASS WARNING LINE ISOL VALVE	50mm
33	LP BYPASS LH DRAIN TO CONDENSOR MASTER ISOL V/V	50mm
34	LP BYPASS LH DRAIN TO CONDENSOR MARTYR ISOL V/V	50mm
35	LP BYPASS RH ISOL V/V BYPASS WARNING LINE ISOL V/V	50mm
36	LP BYPASS RH DRAIN TO CONDENSOR MASTER ISOL V/V	50mm
	CIRCULATING VALVES SYSTEM	
37	CIRC P/P SUCTION MOT V/V	400mm
38	CIRC P/P SUCTION MOT V/V BYPASS(32MM VKS1 SEMPELL)	50mm

39	CIRC P/P "A" OUTLET REG MOT VALVE(250MM W&T)	250mm
40	CIRC P/P "B" OUTLET REG MOT V/V(250MM W&T)	250mm
41	CIRC P/P DISCHARGE MOT V/V	350mm
42	CIRC P/P DISCHARGE MOT V/V BYPASS(32mm sempell)	50mm
43	CIRC PMP A NON RET (250MM SEMPELL)	250mm
44	CIRC PMP B NON RET (250MM SEMPELL)	250mm
45	CIRC PMP STRAINER	400mm
46	CIRC PMP LEAK OFF(125MM SEMPELL GS2)	125mm
47	CIRC PMP LEAK OFF NRV (80MM SEMPELL)	80mm
48	CIRC PMP B LEAK OFF NRV	80mm
	AUXILIARY STEAM RANGE SYSTEM	
49	CR MAIN ISOLATING MOT VALVE	250mm
50	AUX STM REG V/V SEMPELL (200MM) 2off Motaflex	200mm
51	AUX ISOLATING VALVE (350MM SEMPELL)	350mm
52	STM TRAP ISOL VALVE	25mm
53	AUX STM TRAP BYPASS MOT VALVE (25MM SEMPELL)	25mm
54	STM TRAP ISOL VALVE	25mm
55	STM TRAP ISOL VALVE	25mm
56	STM TRAP	25mm
57	AUX STM NRV	200mm
58	AUX STM MAIN MOT ISOL VALVE (250MM SEMPELL)	250mm
59	AUX BTR COMMON ISOL VALVE (15MM SEMPELL)	15mm
60	AUX STM TRAP BYPASS MOT VALVE (25MM SEMPELL)	25mm
61	STM TRAP	25mm

62	STM TRAP ISOL VALVE	25mm
	BOILER WARMING SYSTEM	
63	BLR WARM UP	200mm
64	BLR WARM UP	200mm
65	BLR WARM UP NRV	150mm
	MAIN STEAM SYSTEM	
66	ISOLATING VALVE	25mm
67	ISOLATING VALVE	25mm
68	ISOLATING VALVE	25mm
	COLLECTING VESSEL DRAIN AND BLOWDOWN SYSTEM	
69	BLOW DOWN VESSEL REG MOT ISOL "A" (200MM SEMPELL)	200mm
70	BLOW DOWN REG ISOL MOT VALVE "A" BYPASS(25MM SEMPELL VKS 1)	25mm
71	BLOW DOWN VESSEL REG ISOL V "B"(200 SEMPELL GS 2)	200mm
72	BLOW DOWN REG ISOL MOT VALVE "B" BYPASS (25MM SEMPELL)	25mm
	57ML BOILER RHS VENT STATION	
73	ECON INLET VENT	50mm
74	ECON INLET VENT	50mm
75	DIV WALL OUTLET VENT	50mm
76	DIV WALL OUTLET VENT I/V	50mm
77	EVAP OUTLET VENT	50mm
78	EVAP OUTLET VENT I/V	50mm
79	SH 1 LHS VENT	50mm
80	SH 1 LHS VENT AND ISOLATION	50mm
81	SH 1 RHS VENT AND ISOL	50mm

82	SH 1 RHS VENT V/V	50mm
83	SH 2 INLET 1 AND 2 VENT	50mm
84	SH2 INLET 3 AND 4 VENT	50mm
85	SH 2 INLET 1 AND 2 VENT AND ISOLATION	50mm
86	SH 2 INLET 3 AND 4 VENT AND ISOLATION	50mm
87	SH ATT 3.1 AND 3.2 VENT	50mm
88	SH ATT 3.3 AND 3.4 VENT	50mm
89	SH ATT 3.1 AND 3.2 VENT AND ISOLATION	50mm
90	SH ATT 3.3 AND 3.4 VENT AND ISOLATION	50mm
91	SH 4 OUTLET HEADER 1 VENT	50mm
92	SH 4 OUTLET HEADER 2 VENT	50mm
93	SH 4 OUTLET HEADER 1 VENT AND ISOLATION	50mm
94	SH 4 OUTLET HEADER 2 VENT AND ISOLATION	50mm
95	RH 1 INLET LHS VENT	50mm
96	RH 1 INLET RHS VENT	50mm
97	RH 1 INLET LHS VENT AND ISOLATION	50mm
98	RH 1 INLET RHS VENT AND ISOLATION	50mm
	16 ML BOILER RHS DRAIN STATION	
99	S/H 1.1 OUTLET HDR DRAIN VV	50mm
100	S/H 1.1 OUTLET HDR DRAIN ISOL VV	50mm
101	S/H 1.2 OUTLET HDR DRAIN VV	50mm
102	S/H 1.2 OUTLET HDR DRAIN ISOL VV	50mm
103	S/H ATT 2.1 + 2 DRAIN VV	50mm
104	S/H ATT 2.1 + 2 DRAIN ISOL VV	50mm

105	S/H ATT 2.3 + 4 DRAIN VV	50mm
106	S/H ATT 2.3 + 4 DRAIN ISOL VV	50mm
107	S/H 3.1 INL HDR DRAIN VV	50mm
108	S/H 3.1 INL HDR DRAIN ISOL VV	50mm
109	S/H 3.2 INL HDR DRAIN VV	50mm
110	S/H ATT 3.1 + 2 DRN V/V	50mm
111	S/H ATT 3.1 + 2 DRN ISOL V/V	50mm
112	S/H ATT 3.3 + 4 DRN V/V	50mm
113	S/H ATT 3.3 + 4 DRN ISOL V/V	50mm
114	RH OUT HDR 1 DRAIN ISOL VV	50mm
115	RH OUT HDR 2 DRAIN ISOL VV	50mm
116	RH OUT HDR 1 DRAIN VV	50mm
117	RH 2 OUT HDR 2 DRAIN VV	50mm
118	SH COLLECTION DRAIN VV	50mm
119	SH COLL ISOL AND DRAIN V/V	50mm
120	RH COLLECTION DRAIN	50mm
	2 ML BOILER FRONT DRAIN STATION	
121	HP BYPASS SPR WATER DRAIN V/V	50mm
122	HP BYPASS SPR WATER DRAIN I/V	50mm
123	EVAP COIL DRN ISOL V/V	50mm
124	EVAP COIL DRN ISOL V/V	50mm
125	FEEDWATER DRAIN HIV(25MM VKS1)	50mm
126	FEEDWATER DRAIN ISOL HIV	50mm
127	DIV WALL DRAIN V/V	50mm

128	DIV WALL DRAIN I/V	50mm
129	F.INLET HELICAL EVAP DRAIN V/V LH	50mm
130	F.INLET HELICAL EVAP DRAIN V/V LH	50mm
131	F.INLET HELICAL EVAP DRAIN V/V RH	50mm
132	R.INLET HELICAL EVAP DRAIN V/V LH	50mm
133	R.INLET HELICAL EVAP DRAIN ISOL V/VLH	50mm
134	R.INLET HELICAL EVAP DRAIN V/V RH	50mm
135	R.INLET HELICAL EVAP DRAIN ISOL V/V RH	50mm
136	UPPER EVAP INLET DRAIN V/V LH	50mm
137	UPPER EVAP INLET DRAIN I/V LH	50mm
138	UPPER EVAP INLET DRAIN VV RH(25MM SEMPELL VKS1)	50mm
139	UPPER EVAP INLET DRAIN ISOL VV RH(25MM SEMPELL VKS1)	50mm
140	CIRC PUMP A DRAIN V/V	50mm
141	CIRC PUMP A DRAIN V/V	50mm
142	CIRC PUMP B DRAIN V/V	50mm
	BLOWDOWN VESSEL MANIFOLD DRAIN STATION	
143	CR LEG DRAIN 1 NRV	50mm
144	CR LEG DRAIN 1 ISOL VALVE	50mm
145	CR LEG DRAIN 2 NRV	50mm
146	CR LEG DRAIN 2 ISOL VALVE	50mm
147	HR LEG DRAIN 2 ISOL VV	50mm
148	HR TURB LEG 1 DRAIN NRV	50mm
149	HR TURB LEG 2 DRAIN NRV	50mm
150	HR TURB LEG 3 DRAIN NRV	50mm

151	HR TURB LEG 4 DRAIN NRV	50mm
152	HR LRG DRAIN 1 ISOL VV	50mm
153	LP BYPASS 1 AND 2 DRAIN NRV	50mm
154	LP BYPASS 1 AND 2 DRAIN ISOL VALVE	50mm
155	HR/LP BYPASS 1 AND 2 WARMING NRV	50mm
156	HR AND LP BYPASS WARM ISOL VV	50mm
157	HR/LP BYPASS 3 AND 4 WARMING NRV	50mm
158	LP BYPASS 3 AND 4 WARMING NRV	50mm
159	LP BYPASS 3 AND 4 NRV	50mm
160	LP BYPASS 3 AND 4 DRAIN	50mm
161	HR LEG DRAIN 4 ISOL V/V	50mm
162	HR LEG DRAIN 4 ISOL V/V	50mm
163	MS TURB LEG 1 ISOL VALVE	50mm
164	MS LEG 2 DRAIN 1 NRV	50mm
165	MS TURB LEG 2 ISOL VALVE	50mm
166	MS LEG DRAIN 1 NRV	50mm
167	MS LEG 3 DRAIN NRV	50mm
168	MS TURB LEG 3 ISOL VALVE	50mm
169	MS LEG 4 NRV	50mm
170	MS TURB LEG 4 ISOL VALVE	50mm
171	MS TURB LEG WARM NRV	50mm
172	MS TURB LEG ISOL VALVE	50mm
173	LP BYPASS 1 AND 2 DRAIN MOT	50mm
174	LP BYPASS 3 AND 4 DRAIN MOT	50mm

175	GLND WARMING LINE ISOL V/V	50mm
176	MS TURB LEG WARM MOT ISOL VV	50mm
177	AUX STEAM NRV	50mm
178	R/H SAFETY V/V NRV	50mm
179	R/H VENT TUNDISH NRV	50mm
180	AUX RING DRAIN V/V	50mm
181	FEEDWATER NRV	50mm
182	RH ATT 1 RESIDUAL DRAIN	50mm
183	RH ATT 2 RESIDUAL DRAIN	50mm
184	RH ATT 3 RESIDUAL DRAIN	50mm
185	RH ATT 4 RESIDUAL DRAIN	50mm
186	RH ATT 1 RESIDUAL DRAIN AND ISOLATION	50mm
187	RH ATT 2 RESIDUAL DRAIN AND ISOLATION	50mm
188	RH ATT 3 RESIDUAL DRAIN AND ISOLATION	50mm
189	RH ATT 4 RESIDUAL DRAIN AND ISOLATION	50mm
190	RH FILLER	50mm
191	RH FILLER NON RET	50mm
192	HP BYPASS DRAIN VALVE	50mm
193	REHEATER INLET (SWEEPING / AIR ADMISSION VALVES)	50mm
	CIRCULATING SYSTEM	
194	CIRCULATING PUMP A	500mm
195	CIRCULATING PUMP B	500mm
	S/H SPRAYWATER VALVE SYSTEM	
196	S/H 1.1 SPRAY WTR ISOL MOT V/V A	150mm

197	S/H 1.1 SPRAY WTR ISOL MOT V/V B	150mm
198	S/H 1.1 SPRAY WTR ISOL V/V A	150mm
199	S/H 1.1 SPRAY WTR ISOL V/V B	150mm
200	S/H 1.2 SPRAY WTR ISOL MOT V/V A	150mm
201	S/H 1.2 SPRAY WTR ISOL MOT V/V B	150mm
202	S/H 1.2 SPRAY WTR ISOL V/V A	150mm
203	S/H 1.2 SPRAY WTR ISOL V/V B	150mm
204	S/H 2.1 SPRAY WTR ISOL MOT V/V A	150mm
205	S/H 2.1 SPRAYWATER ISOL MOT V/V B	150mm
206	S/H 2.1 SPRAYWATER ISOL V/V A	150mm
207	S/H 2.1 SPRAYWATER ISOL V/V B	150mm
208	S/H 2.2 SPRAYWATER ISOL MOT V/V A	150mm
209	S/H 2.2 SPRAYWATER ISOL MOT V/V B	150mm
210	S/H 2.2 SPRAYWATER ISOL V/V A	150mm
211	S/H 2.2 SPRAYWATER ISOL V/V B	150mm
212	S/H 2.3 SPRAYWATER ISOL MOT V/V A	150mm
213	S/H 2.3 SPRAYWATER ISOL MOT V/V B	150mm
214	S/H 2.3 SPRAYWATER ISOL V/V A	150mm
215	S/H 2.3 SPRAYWATER ISOL V/V B	150mm
216	S/H 2.4 SPRAY WTR ISOL MOT V/V A	150mm
217	S/H 2.4 SPRAYWATER ISOL MOT V/V B	150mm
218	S/H 2.4 SPRAY WTR ISOL MOT V/V A	150mm
219	S/H 2.4 SPRAY WTR ISOL MOT V/V B	150mm
220	S/H 3.1 SPRAYWATER ISOL MOT V/V A	150mm

221	S/H 3.1 SPRAYWATER ISOL MOT V/V B	150mm
222	S/H 3.1 SPRAYWATER ISOL V/V A	150mm
223	S/H 3.1 SPRAYWATER ISOL V/V B	150mm
224	S/H 3.2 SPRAYWATER ISOL MOT V/V A	150mm
225	S/H 3.2 SPRAYWATER ISOL MOT V/V B	150mm
226	S/H 3.2 SPRAYWATER ISOL V/V A	150mm
227	S/H 3.2 SPRAYWATER ISOL V/V B	150mm
228	S/H 3.3 SPRAYWATER ISOL MOT V/V A	150mm
229	S/H 3.3 SPRAYWATER ISOL MOT V/V B	150mm
230	S/H 3.3 SPRAYWATER ISOL V/V A	150mm
231	S/H 3.3 SPRAYWATER ISOL V/V B	150mm
232	S/H 3.4 SPRAYWATER ISOL MOT V/V A	150mm
233	S/H 3.4 SPRAYWATER ISOL MOT V/V B	150mm
234	S/H 3.4 SPRAYWATER ISOL V/V A	150mm
235	S/H 3.4 SPRAYWATER ISOL V/V B	150mm
	R/H SPRAYWATER VALVE SYSTEM	
236	R/H ATT 1 SPRAY WTR ISOL MOT V/V "A"	50mm
237	R/H ATT 1 SPRAY WTR ISOL MOT V/V "B"	50mm
238	R/H ATT 1 SPR WTR ISOL V/V "A"	50mm
239	R/H ATT 1 SPR WTR ISOL V/V "B"	50mm
240	R/H ATT 2 SPR WTR ISOL MOT V/V "A"	50mm
241	R/H ATT 2 SPR WTR ISOL MOT V/V "B"	50mm
242	R/H ATT 2 SPR WTR ISOL V/V "A"	50mm
243	R/H ATT 2 SPR WTR ISOL V/V "B"	50mm

244	R/H ATT 3 SPR WTR ISOL MOT V/V "A"	50mm
245	R/H ATT 3 SPR WTR ISOL MOT V/V "B"	50mm
246	R/H ATT 3 SPR WTR ISOL V/V "A"	50mm
247	R/H ATT 3 SPR WTR ISOL V/V "B"	50mm
248	R/H ATT 4 SPR WTR ISOL MOT V/V "A"	50mm
249	R/H ATT 4 SPR WTR ISOL MOT V/V "B"	50mm
250	R/H ATT 4 SPR WTR ISOL V/V "A"	50mm
251	R/H ATT 4 SPR WTR ISOL V/V "B"	50mm
	ADDITIONAL SCOPE	
252	HP BYPASS SW STOP VALVE	200mm
253	ISOLATING VALVE	25mm
254	ISOLATING VALVE	25mm
255	ISOLATING VALVE	25mm
256	ISOLATING VALVE	25mm
257	ISOLATING VALVE	25mm
258	HP BYPASS VALVE MONOSTAT ISOL VALVE 1	50mm
259	HP BYPASS VALVE MONOSTAT ISOL VALVE 2	50mm
260	HP BYPASS VALVE MONOSTAT ISOL VALVE 3	50mm
261	REHEAT SAFETY VALVE MONOSTAT ISOL VALVE 1	50mm
262	REHEAT SAFETY VALVE MONOSTAT ISOL VALVE 2	50mm
263	REHEAT SAFETY VALVE MONOSTAT ISOL VALVE 3	50mm
264	CIRC PUMP WARMING MASTER VALVE	25mm
265	CIRC PUMP WARMING MASTER CNTR VALVE	25mm
266	CIRC A WARMING NRV	25mm

267	CIRC B WARMING NRV	25mm
268	CIRC PUMP INJ ISOL	150mm
269	CIRC PUMP INJ MOT	50mm

Duvha U1 IN Boiler Valves (21)		
QIP NO	Task Name	Size
1	MS LEG 1 MOT ISOL VV(50MM SEMPELL VKS1)	50mm
2	MS LEG 2 MOT ISOL VV(50MM SEMPELL VKS1)	50mm
3	MS LEG 3 MOT ISOL VV(50MM SEMPELL VKS1)	50mm
4	ME LEG 4 MOT ISOL VV(50MM SEMPELL VKS1)	50mm
5	HR LEG DRAIN 1 MOT ISOL VALVE(50MM SEMPELL VKS1)	50mm
6	HR LEG DRAIN 2 MOT ISOL VALVE(50MM SEMPELL VKS1)	50mm
7	HR LEG DRAIN 3 MOT ISOL VALVE(50MM SEMPELL VKS1)	50mm
8	HR LEG DRAIN 4 MOT ISOL VALVE(50MM SEMPELL VKS1)	50mm
9	TURB CR LEG DRN 1 MOT ISOL(50MM SEMPELL VKS1)	50mm
10	TURB CR LEG DRN 2 MOT ISOL(50MM SEMPELL VKS1)	50mm
CIRCULATING PUMPS		
11	CIRCULATING PUMP A	500mm
12	CIRCULATING PUMP B	500mm
AUX RANGE SYSTEM		
13	AUX STM REG V/V SEMPELL (200MM)	200mm
14	AUX STM MAIN MOT ISOL VALVE (250MM SEMPELL)	250mm
BLOWDOWN SYSTEM		
15	BLOW DOWN VESSEL REG 50% MOT VALVE A	25mm

16	BLOW DOWN VESSEL REG MOT ISOL "A" (200MM SEMPELL)	200mm
17	BLOW DOWN REG MOT ISOL "A" BYPASS (25MM SEMPELL)	25mm
18	BLOW DOWN REG MOT ISOL "B"	250mm
19	BLOW DOWN REG 50% MOT VALVE B	250mm
20	BLOW DOWN REG MOT ISOL "B" BYPASS	250mm
21	BLOW DOWN VESSEL MOT REG VALVE	250mm

Duvha Non-Valve activities are as follows for ALL outages:

Installation of blank flanges/spades on main condenser CW system

- T1 & T2 CW Isolation
- Gen Loop System Isolation
- Turbine Loop System Isolation
- BFPT Condenser CW Isolation

1	VACUUM BREAKER CC
2	HOT COND DOG BONE DRAIN VALVE
3	COLD COND DOG BONE DRAIN IV
4	COLD COND DRN/DTR IV
5	HOT COND DRN/DTR IV
6	COLD COND DRAIN VALVE
CONDENSATE EXTRACTION PUMPS	
7	CPP DISCHARGE OUTLET NRV
8	EMERG SUPPLY FROM COND NRV
9	LP DEMIN RANGE TO RFWT INLET VALVE
10	M/C EMERG SUPPLY TO BLR FEED P/P IV
11	CPP EMERG BYPASS IV
12	EXT P/P A STAGE 1 SUCTION BELLOW
13	EXT P/P B STAGE 1 SUCTION BELLOW
GSC AND DRAIN TANK	
14	GSC FEEDWATER INLET IV
15	GSC FEEDWATER INLET BYPASS VALVE
16	GSC FEEDWATER OUTLET VALVE

17	GSC FEEDWATER OUTLET BYPASS VALVE
18	GSC FEEDWATER BYPASS VALVE
19	GSC FEEDWATER BYPASS BYPASS VALVE
WATER AIR EJECTOR SYSTEM (WAE)	
20	WAE CULVERT A CW INLET IV
21	WAE CULVERT B CW INLET IV
22	WAE A1 CW INLET STRAINER
23	WAE B1 CW INLET STRAINER
24	WAE A2 CW INLET STRAINER
25	WAE B2 CW INLET STRAINER
SECONDARY CW SYSTEM (SCW)	
26	RECIRC P INLET IV BYP CNTRL IV
27	RECIRC P INLET IV BYP CNTRL IV
28	CULVERT B/SEC CW SUMP INL CNTRL IV
29	CULVERT B/SEC CW SUMP OUTLET CNTRL IV
30	CULVERT B/SEC CW SUMP INL IV
31	B/SEC CW SUMP OUTL CNTRL IV
TAPROGGE SYSTEM	
32	TAPROGGE INLET TO CW A PASS IV
33	TAPROGGE INLET TO CW A PASS IV
34	TAPROGGE INLET TO CW A PASS IV
35	TAPROGGE INLET TO CW A PASS IV
36	TAPROGGE INLET TO CW B PASS IV
37	TAPROGGE INLET TO CW B PASS IV
38	TAPROGGE INLET TO CW B PASS IV
39	TAPROGGE INLET TO CW B PASS IV
40	TAPROGGE 2A SCREEN OUTLET IV
41	TAPROGGE 2B SCREEN OUTLET IV
42	TAPROGGE 2A SCREEN OUTLET IV
43	TAPROGGE 2B SCREEN OUTLET IV
GLAND SEALING WATER SYSTEM	
44	LP GLAND SEAL MANIFOLD INLET IV
45	GLAND SEAL IV
46	GLAND SEAL NRV
FEED PUMP CRITICAL VALVES	
47	EFP A SUC DRN / DTR IV (25mm)
SEALING WATER SYSTEM	

48	DRAIN WATER TO GLAND DRAIN TANK-(50mm)
BOILER U2 MGO BLOCKING DEVICES LIST	
49	MAIN STEAM PIPING 63ML FRONT BOILER OUTLET
50	MAIN STEAM PIPING 63ML FRONT BOILER OUTLET
51	MAIN STEAM PIPING 63ML FRONT BOILER OUTLET
52	MAIN STEAM PIPING 63ML FRONT BOILER OUTLET
53	HOT REHEAT PIPING 63ML REAR BOILER OUTLET
54	HOT REHEAT PIPING 63ML REAR BOILER OUTLET
55	HOT REHEAT PIPING 63ML REAR BOILER OUTLET
56	HOT REHEAT PIPING 63ML REAR BOILER OUTLET
57	COLD REHEAT PIPING 76ML REAR BOILER INLET
58	COLD REHEAT PIPING 76ML REAR BOILER INLET

Grootvlei Power Station: Boiler Valves, Turbine Valves and Commissioning - strip, inspect, blue, box and stroke. Estimate scope below for a GO/MGO/IR (subject to change):

Grootvlei GO/MGO/IR Turbiner Valves (283)	
QIP	Task Name
1	ELECTRIC FEED PUMP A LEAK OFF ISOLATING V/V (100MM)
2	ELECTRIC FEED PUMP B LEAK OFF ISOLATING V/V (100MM)
3	EFP B E/O DISCHARGE EQUALISING V/V (25MM)
4	EFP A E/O DISCHARGE EQUALISING V/V (25MM)
5	HP HEATER 3 TO DEAERATOR DISTILLATE CONTROL V/V (150MM)
6	HP HEATER 1 HYDRAULIC TRIP V/V (OIL AND STEAM SYSTEMS) (300MM)
7	HP HEATER 2 HYDRAULIC TRIP V/V (OIL AND STEAM SYSTEMS) (250MM)
8	HP HEATER 3 HYDRAULIC TRIP V/V (OIL AND STEAM SYSTEMS) (200MM)
9	HPH 1 BLED STEAM ISOLATING V/V (OIL AND STEAM SYSTEMS)
10	HPH 2 BLED STEAM ISOLATING V/V (200MM)
11	HPH 3 BLED STEAM ISOLATING V/V
12	HPH 1 TO DA DISTILLATE CONTROL VALVE
13	HPH 2 TO DA DISTALLATE CONTROL VALVE
14	HPH 2 TO HPH 1 DISTILLATE CONTROL VALVE
15	HPH 3 TO HPH 2 DISTILLATE CONTROL V/V (100MM)
16	HPH 1 TO FLASH BOX DISTILLATE CONTOL V/V (150MM)
17	HPH 2 TO FLASH BOX DISTILLATE CONTROL V/V (150MM)
18	HPH 3 TO FLASH BOX DISTILLATE CONTROL V/V (100MM)
19	DA LOW LOAD BLED STEAM CONTROL VALVE
20	DA LOW LOAD BLED STEAM INLET ISOLATING VALVE
21	DA LOW LOAD BLED STEAM OUTLET ISOLATING VALVE
22	HPH 1 FW INLET E/O ISOLATING V/V (200MM)

23	HPH 1 FW OUTLET E/O ISOLATING V/V (200MM)
24	HPH 2 FW INLET E/O ISOLATING V/V (200MM)
25	HPH 2 FW OUTLET E/O ISOLATING V/V (200MM)
26	HPH 3 FW INLET E/O ISOLATING V/V (200MM)
27	HPH 3 FW OUTLET E/O ISOLATING V/V (200MM)
28	LP HEATER 2 HYDRAULIC TRIP V/V (OIL AND STEAM SYSTEMS) (600MM)
29	BLED STEAM TO DEAERATOR HYDRAULIC TRIP V/V (OIL AND STEAM SYSTEMS) (400MM)
30	WATER SEPERATOR HYDRAULIC TRIP V/V (OIL AND STEAM SYSTEMS) (400MM)
31	HPH 1 FW INLET EQUALISING V/V (25MM)
32	HPH 1 FW OUTLET EQUALISING V/V (25MM)
30	HPH 2 FW INLET EQUALISING V/V (25MM)
31	HPH 2 FW OUTLET EQUALISING V/V (25MM)
32	HPH 3 FW INLET EQUALISING V/V (25MM)
33	HPH 3 FW OUTLET EQUALISING V/V (25MM)
34	HPH 1 TO DA INLET ISOLATING VALVE
35	HPH 1 TO OUTLET ISOLATING V/V
36	HPH 1 TO DA NRV
37	HPH TO DA CV INLET IV
38	HPH 2 TO DA NRV
39	HPH2 TO HPH 1 INLET ISOLATING V/V
40	HPH2 TO HPH 1 OUTLET ISOLATING V/V
41	HPH3 TO HPH2 INLET ISOLATING V/V
42	HPH3 TO HPH2 OUTLET ISOLATING V/V
43	HPH3 TO HPH1 INLET ISOLATING V/V
44	HPH3 TO DA ISOLATING V/V
45	HPH3 TO DA NRV
46	EFP A SUCTION ISOLATING V/V
47	EFP B SUCTION ISOLATING V/V
48	DA LOW LOAD BLED STEAM CONTROL VALVE
49	DA LOW BLED STEAM INLET ISOLATING V/V
50	DA LOW LOAD BLED STEAM OUTLET ISOLATING VALVE
51	DA LOW BYPASS V/V
52	HPH3 BLED STEAM BYPASS V/V
54	HPH1 BLED STEAM BYPASS V/V
53	HPH2 BLED STEAM BYPASS V/V
55	BLED STEAM TO DA ISOLATING V/V
56	BLED STEAM TO DA EQUALISING V/V
57	BLED STEAM TO DA NRV
58	HPH1 TO RH CONDENSER FLASHBOX EO
59	HPH1 TO RH CONDENSER FLASHBOX ISOLATING
60	HPH 2 TO RH CONDENSER FLASHBOX EO
61	HPH2 TO RH CONDENSER FLASHBOX ISOLATING
62	HPH3 TO RH CONDENSER FLASHBOX EO ISOLATING V/V
63	HPH3 TO RH CONDENSER FLASHBOX ISOLATING V/V
64	LHP2 TO RH CONDENSER FLASHBOX EO ISOLATING V/V

65	LPH2 TO RH CONDENSER FLASHBOX ISOLATING V/V
66	LPH2 TO RH CONDENSER FLASHBOX EO ISOLATING V/V
67	LPH1 TO RH CONDENSER FLASHBOX ISOLATING V/V
68	HPH1 TO LPH1 DISTILLATE CONTROL V/V
69	HPH1 TO LPH1 ISOLATING V/V
70	HPH1 TO LPH2 DISTILLATE CONTROL V/V
71	HPH1 TO LPH2 DISTILLATE ISOLATING V/V
72	LPH2 TO LPH1 DISTALLATE CONTROL V/V
73	LHP2 TO LPH1 DISTILLATE ISOLATING V/V
74	LPH2 TO MIDDLE CONDENSER FLASHBOX INLET ISOLATING V/V
75	LPH2 TO MIDDLE CONDENSER FLASHBOX OUTLET ISOLATING V/V
76	LPH2 TO MIDDLE CONDENSER FLASHBOX CONTROL V/V
77	LPH1 TO MIDDLE CONDENSER FLASHBOX INLET ISOLATING V/V
78	LPH1 TO MIDDLE CONDENSER FLASHBOX OUTLET ISOLATING V/V
79	LPH1 TO MIDDLE CONDENSER FLASHBOX CONTROL V/V
80	HPH1 DISTILLATE DRAIN V/V
81	HPH2 DISTILLATE DRAIN V/V
82	HPH3 DISTALLATE DRAIN V/V
83	LPH1 DISTILLATE DRAIN V/V
84	LPH2 DISTILLATE DRAIN V/V
85	MAIN CONDENSER CONDENSATE LEVEL CONTROL BYPASS V/V
86	MAIN CONDENSER CONDENSATE LEVEL CONTROL VALVE
87	MAIN CONDENSER RE-CIRCULATION V/V
88	MAIN CONDENSER 4% MAKE UP V/V
89	MAIN CONDENSER 10% MAKE UP V/V
90	MAIN CONDENSER DUMPING VALVE
91	MAIN CONDENSER OVERRIDING VALVE
92	MAIN CONDENSER VACUUM BREAKER
93	MAIN CONDENSER VACUUM REDUCER
94	MAIN CONDENSER ATMOSPHERIC V/V
95	MAIN CONDENSER RUPTURE V/V
96	MAIN CONDENSER RUPTURE V/V
97	MAIN CONDENSER QUICK START AIR EJECTOR AUXILIARY STEAM CPONTROL V/V
98	MAIN CONDENSER AIR EJECTOR A PRIMARY VENTURI AUXILIARY STEAM CONTROL V/V
99	MAIN CONDENSER AIR EJECTOR A SECONDARY VENTURI AUXILIARY STEAM CONTROL V/V
100	MAIN CONDENSER AIR EJECTOR B PRIMARY VENTURI AUXILIARY STEAM CONTROL V/V
101	MAIN CONDENSER AIR EJECTOR A PRIMARY COOLER DISTALLATE CONTROL V/V
102	MAIN CONDENSER AIR EJECTOR B PRIMARY COOLER DISTILLATE CONTROL VALVE
103	MAIN CONDENSER AIR LINE TO QUICK START AIR EJECTOR CONTROL V/V
104	MAIN CONDENSER AIR LINE TO AIR EJECTOR A PRIMARY VENTURI CONTROL V/V

105	MAIN CONDENSER AIR LINE TO AIR LINE TO AIR EJECTOR B PRIMARY VENTURI CONTROL V/V
106	CLEAN DRAINS TANK CONTROL VALVE
107	MAIN CONDENSER AIR EJECTOR A SECONDARY COOLER DISTILLATE TO CLEAN DRAINS TANK
108	MAIN CONDENSER AIR EJECTOR B SECONDARY COOLER DISTILLATE TO CLEAN DRAIN TANK
109	GSVC HP CATCH POT TO CLEAN DRAINS TANK
110	GSVC LP CATCH POT TO CLEAN DRAINS TANK
111	AUXILIARY STEAM SUPPLY TO TURBINE GLANDS DRAIN TO CLEAN DRAINS TANK
112	AUXILIARY STEAM SUPPLY TO TURBINE GLANDS DRAIN TO CLEAN DRAINS TANK
113	CLEAN DRAINS TANK MAKE UP
114	CLEAN DRAIN TANK MAKE UP
115	CLEAN DRAIN TANK MAKE UP
116	CLEAN DRAINS TANK FLOAT V/V
117	CLEAN DRAIN TANK OVERFLOW TO STATION DRAINS V/V
118	SFPT CONDENSER CONDENSATE LEVEL CONTROL V/V
119	SFPT CONDENSER RE-CIRCULATION V/V
120	SFPT CONDENSER 4% MAKE-UP V/V
121	SFPT CONDENSER ATMOSPHERIC V/V
122	SFPT CONDENSER QUICK START AIR EJECTOR AUXILIARY STEAM CONTROL V/V
123	SFPT CONDENSER AIR EJECTOR A PRIMARY & SECONDARY VENTURIS AUXILIARY STEAM CONTROL V/V
124	SFPT CONDENSER AIR EJECTOR B PRIMARY & SECONDARY VENTURIS AUXILIARY STEAM CONTROL V/V
125	SFPT AIR EJECTOR A PRIMARY COOLER DISTILLATE CONTROL V/V
126	SFPT AIR EJECTOR B PRIMARY COOLER DISTILLATE CONTROL V/V
127	SFPT CONDENSER AIR LINE TO QUICK START AIR EJECTOR CONTROL V/V
128	SFPT CONDENSER AIR LINE TO AIR EJECTOR B PRIMARY VENTURI CONTROL V/V
129	SFPT CONDENSER AIR LINE TO AIR EJECTOR B PRIMARY VENTURI CONTROL V/V
130	SFPT CONDENSER AIR EJECTOR A SECONDARY COOLER DISTILLATE TO CLEAN DRAINS TANK
131	SFPT CONDENSER AIR EJECTOR B SECONDARY COOLER DISTILLATE TO CLEAN DRAINS TANK
132	HP JOP SUCTION IV
133	LP JOP SUCTION IV
134	GEN JOB SUNCTION IV
135	JACKING OIL SUPPLY TO BRG 1 IV
136	JACKING OIL SUPPLY BRG 2 IV
137	JACKLING OIL SUPPLY BRG 3 IV
138	JACKING OIL SUPPLY BRG 4 IV
139	JACKING OIL SUPPLY TO BRG 1 FLEXI HOSE
140	JACKING OIL SUPPLY TO BRG 2 FLEXI HOSE
141	JACKING OIL TO SUPPLY BRG 3 FLEXI HOSE
142	JACKING OIL SUPPLY TO BRG 4 FLEXI HOSE
143	JACKING OIL SUPPLY TO BRG 5 FLEXI HOSE

144	JACKING OIL SUPPLY TO BRG 6 FLEXI HOSE
145	DC OIL PUMP SUCTION IV
146	AC BEARING OIL PUMP SUCTION IV
147	AC BOOSTER OIL PUMP SUCTION IV
148	MECHANICAL PUMP SUCTION IV
149	OIL TURBINE SUCTION IV
150	CONTROL OIL PUMP SUCTION IV
151	DC OIL PUMP DISCHARGE NRV
152	AC BEARING OIL PUMP DISCHARGE NRV (200MM)
153	AC BOOSTER OIL PUMP DISCH. NRV
154	MECHANICAL PUMP DISCHARGE NRV
155	CONTROL OIL PUMP DISCHARGE NRV
156	CONTROL OIL FROM MOP NRV
157	OIL TURBINE DISCHARGE NRV
158	MOC OUTLET NRV
159	FRONT PEDESTAL DC NRV
160	BEARING 1 JOP NRV
161	BEARING 2 JOP NRV
162	BEARING 3 JOP NRV
163	BEARING 4 JOP NRV
164	DC OIL PUMP DISCHARGE IV
165	AC BEARING OIL DISCHARGE
166	AC BOOSTER OIL PUMP DISCHARGE IV
167	MECHANICAL PUMP DISCAHRGE IV
168	CONTROL OIL PUMP DISCHARGE IV
169	OIL TURBINE DISCHARGE IV
170	SEAL OIL AC PUMP A DISCHARGE IV
171	SEAL OIL AC PUMP B DISCHARGE IV
172	SEAL OIL DC PUMP MECHANICAL SEAL SUPPLY IV
173	SEAL OIL AC PUMP A MECHANICAL SEAL SUPPLY IV
174	SEAL OIL AC PUMP B MECHANICAL SEAL SUPPLY
175	SEAL OIL TO PUMP MECHANICAL SEAL SUPPLY
176	SEAL OIL PRESSURE CONTROL VALVE INLET IV
177	SEAL OIL PRESSURE CONTROL VALVE
178	SEAL OIL PRESSURE CONTROL VALVE OUTLET
179	SEAL OIL NRV
180	SEAL DIFF PRESSURE LINE NRV
181	SEAL OIL FILLING IV
182	SEAL OIL FILLING NRV
183	SEAL OIL FILLING IV
184	SEAL OIL DIFF PRESSURE LINE IV
185	AIR DE-FOAMING TANK RETURN IV
186	AIR DE-FOAMING TANK RETURN IV
187	H2 DE-FOAMING TANK RETURN IV
188	H2 DE-FOAMING TANK RETURN IV
189	STATOR COOLANT HEAD TANK H2 RETURN IV

190	SEAL OIL VACUUM PUMP A SUCTION IV
191	SEAL OIL VACUUM PUMP DISCHARGE IV
192	SEAL OIL VACUUM PUMP B SUCTION IV
193	SEAL OIL VACUUM PUMP B
194	SEAL OIL DIFF PRESSURE ORIFICE
195	BOILER MAIN AUX STEAM ISOLATING V/V
196	BYPASS FOR BOILER MAIN AUX STEAM ISOLATING V/V
197	MAIN BOILER AUX STEAM PRESSURE REDUCING VALVE (14-8 Mpa)
198	AUX STEAM ATTEMPERATOR
199	FEED WATER ATTEMPERATOR
200	COMMON AUX STEAM TO THE UNIT ISOLATING V/V
201	BYPASS FOR COMMON AUX STEAM TO THE UNIT ISOLATING VALVE
202	AUX STEAM TO GLAND STEAM PRESSURE REDUCING VALVE (8-1.3 Mpa)
203	PRV ISOLATING V/V
204	AUX STEAM STRAINER
205	AUX STEAM NRV
206	AUX STEAM TO GLAND STEAM EO BYPASS
207	COMMON AUX STEAM TO THE UNIT ISOLATING V/V
208	AUX STEAM NRV
209	GLAND STEAM 3 WAY V/V
210	AUX STEAM DRAIN I/S V/V
211	AUX STEAM DRAIN I/S V/V
212	AUX STEAM DRAIN I/S V/V
213	AUX STEAM DRAIN I/S V/V
214	AUX STEAM DRAIN I/S V/V
215	AUX STEAM DRAIN LINE STRAINER
216	SFPT AUX-GLAND STEAM I/S VALVE
217	SEPT GLAND STEAM CONTROL V/V
218	SEPT GLAND STEAM I/S V/V
219	SFPT GLAND STEAM I/S V/V
220	SFPT GLAND STEAM CONTROL V/V
221	SFPT GLAND STEAM BYPASS I/S
222	AUX STEAM TO SFP CONDENSER FLASHBOX I/S V/V
223	AUX STEAM TO SFP CONDENSER FLASHBOX I/S V/V
224	AUX STEAM TO SFP CONDENSER FLASHBOX CONTROL I/S V/V
225	SFPT - SFP CONDENSER FLASHBOX I/S V/V
226	SFPT -SFP CONDENSER FLASHBOX I/S V/V
227	SFPT - SFP CONDENSER FLASHBOX CONTROL V/V
228	GLAND STEAM TO CONDENSER FLASHBOX I/S V/V
229	GLAND STEAM TO CONDENSER FLASHBOX I/S V/V
230	GLAND STEAM TO CONDENSER FLASHBOX CONTROL V/V
231	
232	HPH1 SHELLSIDE SAFETY V/V
233	HPH1 TUBESIDE SAFETY V/V
234	HPH2 SHELLSIDE SAFETY V/V

235	HPH2 TUBESIDE SAFETY V/V
236	HPH3 SHELLSIDE SAFETY V/V
237	HPH3 TUBESIDE SAFETY V/V
238	LPH1 SHELLSIDE SAFETY V/V
239	LPH1 TUBESIDE SAFETY V/V
240	LPH2 TUBESIDE SAFETY V/V
241	LPH2 TUBESIDE SAFETY V/V
242	DA A SAFETY V/V
243	DA A SAFETY V/V
244	DA C SAFETY V/V
245	DA C SAFETY V/V
246	AUX STEAM SAFETY V/V
247	FEEDWATER SUCTION SAFETY V/V
248	EFP A LEAK-OFF SAFETY V/V
269	EFP B LEAK OFF VALVE SAFETY V/V
270	LP DRAINS COOLER CONDENSATE SAFETY V/V
271	GLAND STEAM CONDENSOR CONDENSATE SAFETY V/V
272	AUX STEAM SAFETY VALVE
273	SFPT SAFETY V/V
274	HPH3 TO DA DISTILLATE CONTROL V/V
275	HPH1 TO DA DISTILLATE CONTROL V/V
276	HPH2 TO DA DISTALLATE CONTROL V/V
277	HP2 TO HPH1 DISTILLATE CONTROL V/V
278	HP3 TO HPH2 DISTILLATE CONTROL V/V
279	HPH1 TO FLASH BOX DISTILLATE CONTROL V/V
280	HPH2 TO FLASH BOX DISTILLATE CONTROL V/V
281	HPH3 TO FLASH BOX DISTILLATE CONTROL V/V
282	EFP A LEAK-OFF ISOLATING V/V
283	EFP B LEAK-OFF ISOLATING V/V

Grootvlei GO/MGO/IR Boiler valves (101)	
QIP	Task Name
1	Feed water reg station quick closing v/v A 225MM
2	Feed water reg station quick closing v/v B 225MM
3	Feed water reg station quick closing v/v C 225MM
4	Feed water reg station quick closing v/v A pressure equalising valve 20MM
5	Feed water reg station quick closing v/v B pressure equalising valve 20MM
6	Feed water reg station quick closing v/v C pressure equalising valve 20MM
7	Feed reg line A drain isol. valve 32MM
8	Feed reg line A drain isol. valve 32MM
9	Feed reg line B drain isol. valve 32MM
10	Feed reg line B drain isol. valve 32MM
11	Feed reg line A vent isol. valve 20MM
12	Feed reg line A vent isol. valve 20MM
13	Feed reg line B vent isol. valve 20MM

14	Feed reg line B vent isol. valve 20MM
15	Feed reg line C vent isol. Valve 20MM
16	Feed reg line C vent isol. valve 20MM
17	LH Economiser inlet isolating valve 225MM
18	RH Economiser inlet isolating valve 225MM
19	LH Economiser inlet isolating pressure equalising valve 20MM
20	RH Economiser inlet isolating pressure equalising valve 20MM
21	LH Economiser inlet NRV 225MM
22	RH Economiser inlet NRV 225MM
23	LH Economiser Recirc isol. valve
24	RH Economiser Recirc isol. valve 80MM
25	LH Economiser Recirc NRV 80MM
26	RH Economiser Recirc NRV 80MM
27	RH Attemporator Spraywater control v/v 75MM
28	LH Attemporator Spraywater control v/v 75MM
29	LH Attemporator Spraywater E/O isol. v/v 80MM
30	RH Attemporator Spraywater E/O isol. v/v 80MM
31	LH Attemporator Spraywater manual isol. v/v 80MM
32	RH Attemporator Spraywater manual isol. v/v 80MM
33	LH Attemporator Spraywater bypass manual isol. v/v 80MM
34	RH Attemporator Spraywater bypass manual isol. v/v
35	LH Attemporator Spraywater bypass manual isol. v/v
36	RH Attemporator Spraywater bypass manual isol. v/v
37	LH Attemporator Spraywater NRV 75MM
38	RH Attemporator Spraywater NRV 100MM
39	Attemporator spraywater inlet isolating E/O valve 10MM
40	Attemporator spraywater inlet isolating E/O valve (DC valve) 10MM
41	Attemporator spraywater inlet NRV 75MM
42	LH Attemporator spraywater vent isolating valve 20MM
43	RH Attemporator spraywater vent isolating valve 20MM
44	Drum blow down valve E/O isol. valve 32MM
45	Drum blow down valve E/O isol. Valve 32MM
46	Drum blow down valve manual isol. valve 32MM
47	Drum blow down valve manual isol. valve 32MM
48	LH Primary SH outlet header E/O drain v/v 50MM
49	LH Primary SH outlet header E/O drain v/v 50MM
50	RH Primary SH outlet header E/O drain v/v 50MM
51	RH Primary SH outlet header E/O drain v/v 50MM
52	LH Attemporator E/O drain v/v 32MM
53	LH Attemporator E/O drain v/v 32MM
54	LH Attemporator E/O drain v/v
55	LH Attemporator Manual drain v/v
56	RH Attemporator E/O drain v/v 32MM
57	RH Attemporator E/O drain v/v 32MM
58	RH Attemporator E/O drain v/v

59	RH Attemporator Manual drain v/v
60	LH Economiser header drain manual valve
61	LH Economiser header drain manual valve
62	RH Economiser header drain manual valve
63	RH Economiser header drain manual valve
64	Main downcomer isolating E/O valve 32MM
65	Main downcomer isolating E/O valve 32MM
66	Main bottom header manual isol valve
67	LH Crown Valve
68	RH Crown Valve 300MM
69	RH Crown Valve E/ O pressure equalising bypass v/v 25MM
70	LH Crown Valve manual pressure equalising bypass v/v
71	LH Final Steam Drain E/O isol. Valve 80MM
72	LH Final Steam Drain E/O isol. valve 80MM
73	RH Final Steam Drain E/O isol. control valve 80MM
74	RH Final Steam Drain E/O isol. control valve 80MM
75	Final Steam to Blowdown Vessel Drain E/O isol. Valve 125MM
76	LH main steam drain E/O isol. v/v 50MM
77	RH main steam drain E/O isol. v/v 50MM
78	LH main steam drain manual isol. v/v 50MM
79	RH main steam drain manual isol. v/v 50MM
80	LH main steam drain NRV 50MM
81	RH main steam drain NRV 50MM
82	LH Main steam drains steam strainer
83	RH Main steam drains steam strainer
84	LH Steam leg start up warming control valve 80MM
85	LH Steam leg start up warming isol. Valve 80MM
86	RH Steam leg start up warming control valve 80MM
87	RH Steam leg start up warming isol valve 80MM
88	Furnace sootblowers steam supply E/O isol. v/v 50MM
89	Air heater sootblowers steam supply E/O isol. Valve 50MM
90	Air heater sootblowers drain valve 20MM
91	Sootblower steam supply E/O isol. v/v 50MM
92	Sootblower steam supply manual isol. v/v 50MM
93	Air heater sootblowers drain valve 20MM
94	LH Furnace sootblower drain valve 20MM
95	RH Furnace sootblower drain valve 20MM
96	RH Furnace sootblower drain valve 20MM
97	Air heater sootblowers drain valve 20MM
98	LH Furnace sootblower drain valve 20MM
99	RH Furnace sootblower drain valve 20MM
100	Air heater sootblowers drain valve 20MM
101	LH Furnace sootblower drain valve 20MM

Hendrina Power Station: Boiler Valves, Turbine Valves and Commissioning - strip, inspect, blue, box and stroke. Estimate scope below for a GO/MGO/IR (subject to change):

Hendrina GO/MGO Turbine Valves	
QIP	DESCRIPTION
CONTROL VALVES(23)	
1	Deaerator Filling Control valve 200 mm
2	Dumping Control Valve B336 300 mm
3	Condensate Make up Control valve B334 300 mm
4	Condenser level Control valve 300 mm
5	Condenser recirculating Control Valve 200 mm
6	Condenser overrider control valve (CV 188) 200 mm
7	Deaerator overrider control valve 300 mm
8	HP Heater 1A Distillate drain control valve to deaerator south 125 mm
9	HP Heater 1B Distillate drain control valve to deaerator north 125 mm
10	HP Heater 2A Distillate drain control valve 100 mm
11	HP Heater 2B Distillate drain control valve 100 mm
12	HP Heater 3A Distillate drain control valve 80 mm
13	HP Heater 3B Distillate drain control valve 80 mm
14	LP Heater 1 Control valve 300 mm
15	LP Heater 2 Control valve 300 mm
16	HP Heater A Bank pitch load control valve 125 mm
17	HP Heater B Bank pitch load control valve 125 mm
18	H2 Coolant CW fine control valve 125 mm
19	H2 Coolant CW coarse control valve 200 mm
20	Stator Coolant CW fine control valve 125 mm
21	Stator Coolant CW coarse control valve 150 mm
22	MWF A Auto blow down control valve 50 mm
23	MWF B Auto blow down control valve 50 mm
EXTRACTION VALVE'S 5 & 6 (2)	
24	Extraction valve 6 812.8 mm
25	Extraction valve 5 914,4mm
FEEDSIDE ISOLATING VALVES (81)	
26	RFT Drain valves 100 mm
27	RFT filling pipe drain valve 40 mm
28	RFT filling isolating valve 300 mm
29	RFT supply valve for condensate make-up system 300 mm
30	RFT feed water to cooling water make-up tank isolating valve 100 mm
31	Deaerator filling isolating valve 150 mm
32	Deaerator storage tank north filling isolating valve 80 mm
33	Deaerator storage tank south filling isolating valve 80 mm
34	Deaerator storage tank drain valve 80 mm
35	East microwire filter drain valve 50 mm
36	West microwire filter drain valve 50 mm
37	East microwire filters auto blow down isolating valve 50 mm
38	West microwire filters auto blow down isolating valve 50 mm

39	A EFP inlet isolating valve 250 mm
40	A EFP inlet isolating valve 200 mm
41	A EFP leak-off isolating valve 100 mm
42	B EFP inlet isolating valve 250 mm
43	B EFP discharge isolating valve 200 mm
44	B EFP leak-off isolating valve 100 mm
45	Steam feed pump suction isolating valve 400 mm
46	Steam feed pump discharge isolating valve 300 mm
47	Steam feed pump discharge isolating valve bypass valve 20 mm
48	Steam feed pump leak off deaerator isolating valve 80 mm
49	A bank feed inlet isolating valve 250 mm
50	A bank feed outlet isolating valves 250 mm
51	A bank feed inlet by-pass isolating valve 20 mm
52	A bank feed outlet by-pass isolating valve 20 mm
53	A bank HPH filling isolating valve 25 mm
54	A bank HPH filling isolating valve 25 mm
55	A bank HPH 3 way valve actuator drain valve 25 mm
56	A bank HPH 2 way valve actuator drain valve 25 mm
57	B bank feed inlet isolating valve 250 mm
58	B bank feed outlet isolating valve 250 mm
59	B bank feed inlet by-pass isolating valve 20 mm
60	B bank feed outlet by-pass isolating valve 20 mm
61	B bank HPH filling isolating valve 25 mm
62	B bank HPH filling isolating valve 25 mm
63	B bank HPH 3 way valve actuator drain valve 25 mm
64	B bank HPH 2 way valve actuator drain valve 25 mm
65	SFP gland sealing water pump A suction isolating valve 80 mm
66	SFP gland sealing water pump B discharge isolating valve 80 mm
67	SFP gland sealing water pump A discharge isolating valve 65 mm
68	SFP gland sealing water pump B discharge isolating valve 65 mm
69	SFP seal water supply isolating valve from RFT 65 mm
70	Dumping control valve inlet isolating valve 300 mm
71	Dumping control valve outlet isolating valve 300 mm
72	Dumping control by-pass valve 300 mm
73	Dumping station drain valve 80 mm
74	Condensate make-up control valve inlet isolating valve 300 mm
75	Condensate make-up control valve outlet isolating valve 200 mm
76	Condensate make-up control valve by-pass isolating valve 200 mm
77	5% Make up isolation valve 80 mm
78	Final feed isolating valve (ELDIDOR PSV) 300 mm
79	A EFP Leak-off NRV at deaerator 80 mm
80	B EFP Leak-off NRV at deaerator 80 mm
81	SFP Leak-off NRV at deaerator 80 mm
82	Main feed suction NRV before microwire filters 400 mm
83	A EFP discharge NRV 200 mm
84	B EFP discharge NRV 200 mm
85	Steam feed pump discharge NRV 300 mm
86	SFP gland sealing water pump A discharge NRV 65 mm
87	SFP gland sealing water pump B discharge NRV 65 mm

88	Condensate dumping NRV 300 mm
89	SFP seal water supply NRV from RFT 65 mm
90	SFP seal water supply NRV from extraction pump 65 mm
91	A bank HPH 3 way valve 250 mm
92	A bank HPH 2 way valve 250 mm
93	B bank HPH 3 way valve 250 mm
94	B bank HPH 2 way valve 250 mm
95	A EFP inlet isolating valve gearboxes 250 mm
96	A EFP discharge isolating valve gearbox 250 mm
97	B EFP inlet isolating valve gearboxes 250 mm
98	B EFP discharge isolating valve gearbox 250 mm
99	Steam feed pump inlet I/V gearbox 250 mm
100	Steam feed pump discharge I/V gearbox 250 mm
101	A Bank feed inlet I/V gearbox 250 mm
102	A Bank feed outlet I/V gearbox 250 mm
103	B Bank feed inlet I/V gearbox 250 mm
104	B Bank feed outlet I/V gearbox 250 mm
105	A Bank HPH Feedwater Bypass Orifice Joint Replacement 50 mm
106	B Bank HPH Feedwater Bypass Orifice Joint Replacement 50 mm
bled steam isolating V/V(25)	
107	SFP turbine exhaust steam supply to deaerator drain valve 25 mm
108	SFP turbine exhaust steam drain valve 50 mm
109	Steam feed pump exhaust steam to deaerator isolating valve 400 mm
110	Steam feed pump exhaust steam to deaerator by-pass isolating valve 20 mm
111	Steam feed pump exhaust steam to atmosphere isolating valve 65 mm
112	HPH 1A Bled steam isolating valve 250 mm
113	HPH 1A Bled steam isolating valve bypass 25 mm
114	HPH 1B Bled steam isolating valve 250 mm
115	HPH 1B Bled steam isolating valve bypass 25 mm
116	HPH 2A Bled steam isolating valve 200 mm
117	HPH 2A Bled steam isolating valve bypass 25 mm
118	HPH 2B Bled steam isolating valve 200 mm
119	HPH 2B Bled steam isolating valve bypass 25 mm
120	HPH 3A Bled steam isolating valve 150 mm
121	HPH 3A Bled steam isolating valves bypass 25 mm
122	HPH 3B Bled steam isolating valve & bypass 150 mm
123	HPH 3B Bled steam isolating valves bypass 25 mm
124	Bled steam supply to steam feed pump isolating valve 200 mm
125	Bled steam supply to steam feed pump by-pass isolating valve 20 mm
126	Bled steam supply to steam feed pump NRV by-pass isolating valve 20 mm
127	North bled steam supply to deaerator ball float NRV 300 mm
128	South bled steam supply to deaerator ball float NRV 300 mm
129	Bled steam supply to steam feed pump NRV 200 mm
130	North bled steam NRV's at deaerator 300 mm
131	South bled steam NRV's at deaerator 300 mm
LIVE/AUXILIARY STEAM ISOLATING VALVES(23)	
132	Turbine gland auxiliary live steam supply pipe steam trap inlet isolating valve 20 mm
133	Turbine gland auxiliary live steam supply pipe steam trap bypass isolating valve 20 mm

134	Turbine gland auxiliary live stm supply pipe steam trap outlet isolating valve 20 mm
135	Live steam supply pipe steam trap top inlet isolating valve 20 mm
136	Live steam supply pipe steam trap bottom inlet isolating valve 20 mm
137	Live steam supply pipe steam trap bypass isolating valve 20 mm
138	Live steam supply pipe steam trap outlet isolating valve 20 mm
139	Live steam pipe to deaerator drain steam trap top inlet isolating valve 20 mm
140	Live steam pipe to deaerator drain steam trap bottom inlet isolating valve 20 mm
141	Live steam supply pipe to deaerator drain steam trap bypass isolating valve 20 mm
142	Live steam pipe to deaerator drain steam trap outlet isolating valve 20 mm
143	Turbine steam leg drain blow down vessel drain valve 50 mm
144	Deaerator warming steam supply control valve 50 mm
145	Deaerator warming steam supply isolating valve 50 mm
146	Deaerator warming steam control valve outlet isolating valve (93 ft) 50 mm
147	Deaerator warming up steam NRV 50 mm
148	Deaerator storage tank warming up NRV 50 mm
149	Turbine gland auxiliary live steam supply pipe steam trap 50 mm
150	Live steam supply pipe drain steam trap 50 mm
151	Live steam supply pipe to deaerator drain steam trap 50 mm
152	Turbine gland auxiliary live steam supply pipe steam trap orifice 50 mm
153	Live steam supply pipe steam trap orifice 50 mm
154	Live steam supply pipe to deaerator drain steam trap orifice 50 mm
	CONDENSATE ISOLATING VALVES(37)
155	Clean drains tank to condenser isolating valve 100 mm
156	Condensate extraction pump A discharge pipe drain valve 150 mm
157	Clean drains tank drain valve 50 mm
158	Condensate extraction pump B discharge pipe drain valve 150 mm
159	North deaerator vent condenser drain valve 20 mm
160	North deaerator vent condenser drain valve 20 mm
161	South deaerator vent condenser drain valve 20 mm
162	South deaerator vent condenser drain valve 20 mm
163	Main condensate supply pipe to deaerator drain valve 80 mm
164	Overhaul extraction pump A casing filling isolating valves 65 mm
165	Condensate extraction pump A discharge isolating valve 300 mm
166	Overhaul extraction pump B casing filling isolating valves 65 mm
167	Condensate extraction pump B discharge isolating valve 300 mm
168	Clean drains tank filling i/v 100 mm
169	Clean drains tank float outlet control valve isolating valve 50 mm
170	LPH 1 Condensate bypass I/V 300 mm
171	LPH 2 Condensate bypass I/V 300 mm
172	Condenser recirculating valve by-pass isolating valve 150 mm
173	Condenser level control valve by-pass isolating valve 300 mm
174	Condensate supply to deaerator isolating valve inlet valve 300 mm
175	Condensate supply to deaerator isolating valve outlet valve 300 mm
176	Condensate supply to deaerator isolating valve by-pass valve 300 mm
177	Clean drains tank filling isolating valve 100 mm
178	Ejector A primary & secondary stage cooler 300 mm
179	Ejector A primary & secondary stage cooler condensate outlet isolating valve 300 mm
180	Ejector B primary & secondary stage cooler condensate outlet isolating valve 300 mm
181	Ejector B primary & secondary stage cooler condensate outlet isolating valve 300 mm

182	Clean drains tank mae up ball valve 50mm
183	Condensate extraction pump A discharge non return valve 300 mm
184	Condensate extraction pump B discharge NRV 300 mm
185	North DA vent condensor condensate outlet NRV 250 mm
186	South DA vent condensor condensatoutlet NRV 250 mm
187	Condensate dumping NRV 300 mm
188	Atmospheric valve sealing water supply isolating valve
189	Condenser vacuum breaker sealing supply isolating valve
190	North primary cooler drain valve
191	South primary cooler drain valve
	DISTILLATE ISOLATING SYSTEM(86)
192	HP Heater 1A distillate drain to storage tank south isolating valve 200 mm
193	HP Heater 1A distillate outlet isolating valve 150 mm
194	HP Heater 1B distillate drain to storage tank north isolating valve 200 mm
195	HP Heater 1B distillate outlet isolating valve 150 mm
196	HP Heater 2A distillate outlet isolating valve 100 mm
197	HP Heater 2A distillate outlet by-pass isolating valve 100 mm
198	HP Heater 2A distillate outlet control isolating valve 100 mm
199	HP Heater 2B distillate outlet isolating valve 100 mm
200	HP Heater 2B distillate outlet by-pass isolating valve 100 mm
201	HP Heater 2B distillate drain control isolating valve 100 mm
202	HP Heater 3A distillate drain by-pass isolating valve 80 mm
203	HP Heater 3A distillate control isolating valve 80 mm
204	HP Heater 3B distillate drain by-pass isolating valve 80 mm
205	HP Heater 3B distillate control isolating valve 80 mm
206	HP Heater 1A pitch load distillate control isolating valve 125 mm
207	HP Heater 1B pitch load distillate control isolating valve 125 mm
208	HP heater 3B level limit switch top isolating valve SFP 20 mm
209	HP heater 3B level limit switch bottom isolating valve SFP 20 mm
210	HP heater 3B level limit switch bottom isolating valve 20 mm
211	HP heater 3B level limit switch top isolating valve 20 mm
212	HP heater 3A level limit switch bottom isolating valve SFP 20 mm
213	HP heater 3A level limit switch top isolating valve SFP 20 mm
214	HP heater 3A level limit switch top isolating valve 20 mm
215	HP heater 3A level limit switch to bottom isolating valve 20 mm
216	HP heater 2B level limit switch bottom isolating valve 20 mm
217	HP heater 2B level limit switch top isolating valve 20 mm
218	HP heater 2A level limit switch bottom isolating valve 20 mm
219	HP heater 2A level limit switch top isolating valve 20 mm
220	HP heater 1B level limit switch bottom isolating valve 20 mm
221	HP heater 1B level limit switch top isolating valve 20 mm
222	HP heater 1A level limit switch bottom isolating valve 20 mm
223	HP heater 1A level limit switch top isolating valve 20 mm
224	LP heater 1 high level limit switch top isolating valve 20 mm
225	LP heater 1 level limit switch bottom isolating valve 20 mm
226	LP heater 2 level limit switch top isolating valve 20 mm
227	LP heater 2 level limit switch bottom isolating valve 20 mm
228	HP heater 1A distillate outlet drain valve 50 mm
229	HP heater 2A distillate outlet drain valve 50 mm

230	HP heater 3A distillate outlet drain valve 50 mm
231	HP heater 1B distillate outlet drain valve 50 mm
232	HP heater 2B distillate outlet drain valve 50 mm
233	HP heater 3B distillate outlet drain valve 50 mm
234	HP heater 1A witness drain valve 25 mm
235	HP heater 2A witness drain valve 25 mm
236	HP heater 3A witness drain valve 25 mm
237	HP heater 1B witness drain valve 25 mm
238	HP heater 2B witness drain valve 25 mm
239	HP heater 3B witness drain valve 25 mm
240	LPH nr 1 drain isolating valve 50 mm
241	LPH nr 2 drain isolating valve 50 mm
242	HPH 1A main vent to condenser isol. Valve 50 mm
243	HPH 2A main vent to condenser isol. Valve 50 mm
244	HPH 3A main vent to condenser isol. Valve 50 mm
245	HPH 1B main vent to condenser isol. Valve 50 mm
246	HPH 2B main vent to condenser isol. Valve 50 mm
247	HPH 3B main vent to condenser isol. Valve 50 mm
248	HPH 1A water level transmitter valve (Top) 50 mm
249	HPH 1A water level transmitter valve (Bottom) 50 mm
250	HPH 2A water level transmitter valve (Top) 50 mm
251	HPH 2A water level transmitter valve (Bottom) 50 mm
252	HPH 3A water level transmitter valve (Top) 50 mm
253	HPH 3A water level transmitter valve (Bottom) 50 mm
254	HPH 1B water level transmitter valve (Top) 50 mm
255	HPH 1B water level transmitter valve (Bottom) 50 mm
256	HPH 2B water level transmitter valve (Top) 50 mm
257	HPH 2B water level transmitter valve (Bottom) 50 mm
258	HPH 3B water level transmitter valve (Top) 50 mm
259	HPH 3B water level transmitter valve (Bottom) 50 mm
260	LPH 1 water level transmitter valve (Top) 50 mm
261	LPH 1 water level transmitter valve (Bottom) 50 mm
262	LPH 2 water level transmitter valve (Top) 50 mm
263	LPH 2 water level transmitter valve (Bottom) 50 mm
264	Deaerator storage tank level transmitter isol.valve (Top) 50 mm
265	Deaerator storage tank level transmitter isol.valve (Bottom) 50 mm
266	Deaerator storage tank level switch isol. valve (Top) 50 mm
267	Deaerator storage tank level switch isol. valve (Bottom) 20 mm
268	Deaerator storage tank overrider level switch isol. Valve (Top) 20 mm
269	Deaerator storage tank overrider level switch isol. Valve (Bottom) 20 mm
270	LPH 1 Distillate Lvl Ctrl v/v Outlet Isolating valve 350 mm
271	LPH 1 Distillate Lvl Ctrl v/v Outlet Bypass v/v 25 mm
272	LPH 1 Distillate Lvl Ctrl v/v Inlet Isolating valve 350 mm
273	LPH 1 Distillate Lvl Ctrl v/v Inlet Isolating valve BYPASS 25 mm
274	LPH 1 Distillate Station Bypass Isolating v/v 350 mm
275	LPH 1 Distillate Station Bypass Isolating v/v BYPASS 25 mm
276	HP Heater 1A distillate to deaerator storage tank NRV 150 mm
277	HP Heater 1B distillate to deaerator storage tank NRV 150 mm
	AUXILLARRY CW VALVES(20)

278	Gen H2 cooler CW pump A discharge NRV 200 mm
279	Gen H2 cooler CW pump B discharge NRV 200 mm
280	Gen H2 cooler CW return NRV 150 mm
281	Gen stator cooler CW return NRV 150 mm
282	Gen stator cooler CW pump re-circulating NRV 150 mm
283	Gen stator cooler CW pump suction NRV 250 mm
284	Gen seal oil cooler CW supply NRV 80 mm
285	Condenser north cooling water inlet air release 150 mm
286	Condenser north cooling water outlet air release 150 mm
287	Condenser south cooling water outlet air release 150 mm
288	Condenser south cooling water inlet air release 150 mm
289	Make-up tank ball valve (112) 25 mm
290	Condenser north cooling water inlet air release isolating valve 150 mm
291	Condenser north cooling water outlet air release isolating valve 150 mm
292	Condenser south cooling water inlet air release isolating valve 150 mm
293	Condenser south cooling water inlet air release isolating valve 150 mm
294	Turbogenerator and SFP Coolers CW 300 mm
295	CW Filling isolating valve north 150 mm
296	CW Filling isolating valve south 150 mm
297	CW Filling I/V 150 mm
AIR EJECTOR VALVES(7)	
298	Ejector cooler A condensate air release v/v 25 mm
299	Ejector cooler B condensate air release v/v 25 mm
300	Secondary ejector A 3-way valve 25 mm
301	Secondary ejector B 3-way valve 25 mm
302	Ejector A suction isolating valve 100 mm
303	Ejector B suction isolating valve 100 mm
304	Quick start air ejector suction isolating valve 150 mm
CW VALVES(67)	
305	Gen H2 cooler 1 cw inlet i/v 150 mm
306	Gen H2 cooler 2 cw inlet i/v 150 mm
307	Gen H2 cooler 3 cw inlet i/v 150 mm
308	Gen H2 cooler 4 cw inlet i/v 150 mm
309	Gen H2 cooler 1 cw outlet i/v 150 mm
310	Gen H2 cooler 2 cw outlet i/v 150 mm
311	Gen H2 cooler 3 cw outlet i/v 150 mm
312	Gen H2 cooler 4 cw outlet i/v 150 mm
313	Seal oil cooler A cw inlet i/v 80 mm
314	Seal oil cooler B cw inlet i/v 80 mm
315	Seal oil cooler A cw outlet i/v 80 mm
316	Seal oil cooler B cw outlet i/v 80 mm
317	Stator coolant cooler A cw inlet i/v 150 mm
318	Stator coolant cooler B cw inlet i/v 150 mm
319	Stator coolant cooler C cw inlet i/v 150 mm
320	Stator coolant A cw outlet i/v 150 mm
321	Stator coolant B cw outlet i/v 150 mm
322	Stator coolant C cw outlet i/v 150 mm
323	SFP L/oil clr B cw drain v/v 100 mm

324	SFP L/oil cw drain supply pipe drain v/v 100 mm
325	SFP L/oil cooler A cw supply i/v 100 mm
326	SFP L/oil cooler B cw supply i/v 100 mm
327	SFP L/oil cooler cw supply i/v 100 mm
328	SFP L/oil clr A cw return i/v 100 mm
329	SFP L/oil clr B cw return i/v 100 mm
330	SFP L/oil clr cw return i/v 100 mm
331	T/Gen L/Oil clr A cw inlet i/v 200 mm
332	T/Gen L/Oil clr B cw inlet i/v 200 mm
333	T/Gen L/Oil clr A cw outlet i/v 200 mm
334	T/Gen L/Oil clr B cw outlet i/v 200 mm
335	Gen H2 cooler cw return i/v 200 mm
336	Gen H2 cooler cw pump A suction v/+C365 200 mm
337	Gen H2 cooler cw pump B suction v/v 200 mm
338	Gen H2 cooler cw pump A discharge v/v 200 mm
339	Gen H2 cooler cw pump B discharge v/v 200 mm
340	Gen stator cw pump suction v/v 150 mm
341	Gen stator cw pump discharge v/v 150 mm
342	Gen stator cw pump recirc i/v 150 mm
343	Gen stator cooler cw return i/v 150 mm
344	Aux CW pump B discharge valve 150 mm
345	AUX CW PUMP A DISCHARGE VALVE 150 mm
346	AUX CW PUMP A SUCTION VALVE 150 mm
347	AUX CW PUMP B SUCTION VALVE 125 mm
348	AUX CW HEAT EXCHANGER A AUX CW OUTLET I/V 125 mm
349	AUX CW HEAT EXCHANGER B AUX CW OUTLET I/V 125 mm
350	AUX CW HEAT EXCHANGER A INLET I/V 125 mm
351	AUX CW HEAT EXCHANGER B INLET I/V 125 mm
352	AUX CW HEAT EXCHANGER B CW INLET I/V 200 mm
353	AUX CW HEAT EXCHANGER A CW INLET I/V 200 mm
354	AUX CW HEAT EXCHANGER B CW OUTLET I/V 200 mm
355	AUX CW HEAT EXCHANGER A CW OUTLET I/V 200 mm
356	AUX CW HEAT EXCHANGER CW STRAINER B OUTLET I/V 200 mm
357	AUX CW HEAT EXCHANGER CW STRAINER A OUTLET I/V 200 mm
358	North deaerator vent condenser vent valve to atmosphere 20 mm
359	North deaerator vent condenser vent non return valve to atmosphere 20 mm
360	Sorth deaerator vent condenser vent valve to atmosphere 20 mm
361	Sorth deaerator vent condenser vent non return valve to atmosphere 20 mm
362	North deaerator vent condenser vent valve to atmosphere 20 mm
363	Sorth deaerator vent condenser vent valve to atmosphere 20 mm
364	North deaerator vent condenser inlet vent valve from deaerator tanks 100 mm
365	North deaerator vent condenser inlet vent valve from deaerator tanks 25 mm
366	Sorth deaerator vent condenser vent inlet valve from deaerator tanks 25 mm
367	Sorth deaerator vent condenser inlet vent valve from deaerators 25 mm
368	North deaerator vent condenser vent drain valve 25 mm
369	North deaerator vent condenser vent drain valve 25 mm
370	North deaerator vent condenser vent drain valve 25 mm
371	Sorth deaerator vent condenser vent drain valve 25 mm

Kendal Power Station: Boiler Valves, Turbine Valves and Commissioning - strip, inspect, blue, box and stroke. Estimate scope below for a GO/MGO/IR (subject to change). Supply of resources to assist MMD (1 supervisor, 2 fitters, 2 general workers):

KENDAL GO/MGO BOILER VALVES (391)	
QIP	Valve description
1	S/BLOWER S/HEAT SOURCE MASTER V/V.(100mm)
2	S/BLOWER S/HEAT SOURCE MASTER V/V.(50MM)
3	S/BLOWER W/BLOWER SECTION V/V.(80MM)
4	S/BLOWER L/BLOWER SECTION V/V.(100MM)
5	S/BLOWER HP STEAM SOURCE ISOL. V/V.(80MM)
6	S/BLOWER M/STEAM SOURCE MASTER V/V.(50MM)
7	S/HTR ATT.BLOWOFF ISOL. V/V.(20MM)
8	S/HTR ATT.BLOWOFF ISOL. V/V.(20MM)
9	S/HTR ATT.BLOWOFF ISOL. V/V.(20MM)
10	S/HTR ATT.BLOWOFF ISOL. V/V.(20MM)
11	L/H S/HTR.SP/WATER CONTROL V/V.(100MM)
12	L/H S/HTR.SP/WATER BLOCK V/V.(100 mm)
13	L/H S/HTR.SP/WATER BLOCK V/V.(100MM)
14	L/H S/HTR.SP/WATER CONTROL V/V.(100MM)
15	L/H S/HTR.SP/WATER BLOCK V/V.(100 mm)
16	L/H S/HTR.SP/WATER BLOCK V/V.(100MM)
17	L/H S/HTR.SP/WATER CONTROL V/V.(80MM)
18	L/H S/HTR.SP/WATER BLOCK V/V.(80MM)
19	L/H S/HTR.SP/WATER BLOCK V/V.(80MM)
20	L/H S/HTR.SP/WATER CONTROL V/V.(80MM)
21	L/H S/HTR.SP/WATER BLOCK V/V.(80MM)
22	L/H S/HTR.SP/WATER BLOCK V/V.(80MM)
23	R/H S/HTR.SP/WATER CONTROL V/V.(100 mm)
24	R/H S/HTR.SP/WATER BLOCK V/V.(100MM)
25	R/H S/HTR.SP/WATER BLOCK V/V.(100MM)
26	R/H S/HTR.SP/WATER CONTROL V/V.(100MM)
27	R/H S/HTR.SP/WATER BLOCK V/V.(100MM)
28	R/H S/HTR.SP/WATER BLOCK V/V.(100MM)
29	R/H S/HTR.SP/WATER CONTROL V/V.(80MM)
30	R/H S/HTR.SP/WATER BLOCK V/V.(80MM)
31	R/H S/HTR.SP/WATER BLOCK V/V.(80MM)
32	R/H S/HTR.SP/WATER CONTROL V/V.(80MM)
33	R/H S/HTR.SP/WATER BLOCK V/V.(80MM)
34	R/H S/HTR.SP/WATER BLOCK V/V.(80MM)
35	L/H MAIN STEAM STOP DRAIN V/V. (50MM)
36	R/H MAIN STEAM STOP DRAIN V/V. (50MM)
37	SUPER HEATER SP/WATER BLOCK V/V.(150MM)
38	S/BLOWER REHEAT SOURCE ISOL. V/V.(100MM)
39	L/H RE/HTR.SP/WATER STN.VENT ISOL.V/V.(20MM)

40	R/H RE/HTR.SP/WATER STN.VENT ISOL.V/V(20MM).
41	L/H RE/HTR.SP/WATER STN.VENT ISOL.V/V.(20MM)
42	R/H RE/HTR.SP/WATER STN.VENT ISOL.V/V.(20MM)
43	L/H RE/HTR.SP/WATER STN.CONTROL V/V.(80MM)
44	L/H RE/HTR.SP/WATER STN.BLOCK V/V.(100 mm)
45	L/H RE/HTR.SP/WATER STN.BLOCK V/V.(100MM)
46	R/H RE/HTR.SP/WATER STN.CONTROL V/V.(80MM)
47	R/H RE/HTR.SP/WATER STN.BLOCK V/V.(100MM)
48	R/H RE/HTR.SP/WATER STN.BLOCK V/V.(100MM)
49	L/H RE/HTR.SP/WATER STN.CONTROL V/V.(80MM)
50	L/H RE/HTR.SP/WATER STN.BLOCK V/V.(100MM)
51	L/H RE/HTR.SP/WATER STN.BLOCK V/V.(100MM)
52	R/H RE/HTR.SP/WATER STN.CONTROL V/V.(80MM)
53	R/H RE/HTR.SP/WATER STN.BLOCK V/V.(100 mm)
54	R/H RE/HTR.SP/WATER STN.BLOCK V/V.(100MM)
55	L/H AUX STEAM SUPPLY BLOCK V/V.(200 mm)
56	L/H AUX STEAM SUPPLY BLOCK BYPASS V/V..(20MM)
57	R/H AUX STEAM SUPPLY BLOCK V/V.(200 mm)
58	R/H AUX STEAM SUPPLY BLOCK BYPASS V/V.(20MM)
59	REHEAT SP/WATER SUPPLY BLOCK V/V.(150 mm)
60	ECON.INLET STOP V/V.(500MM)
61	ECON.INLET STOP BYPASS V/V.(20MM)
62	ECON.INLET DRAIN V/V.(32MM)
63	ECON.RECIRC.V/V.(80 mm)
64	3" BLOWDOWN REGULATING V/V.(75MM)
65	FURNACE LOWER REAR DRUM ISOL. V/V.(80MM)
66	FURNACE LOWER REAR DRUM DRAIN NRV.(80MM)
67	S/BLOWER REHEAT SOURCE STM.PRESS.ISOL.V/V.(15MM)
68	S/BLOWER REHEAT SOURCE STM.PRESS.ISOL.V/V.(15MM)
69	S/BLOWER COMMON SOURCE STM.PRESS.ISOL.V/V.(15MM)
70	S/BLOW.S/HTR.SOURCE PRESS. SENSOR V/V.(15MM)
71	S/BLOW.MAIN STM.SOURCE P/SW.ISOL.V/V.(15MM)
72	L/H MAIN STEAM VENT V/V.(L/H V/V)(15MM)
73	L/H HOT REHEAT VENT V/V.(R/H V/V)(15MM)
74	L/H STEAM DRUM VENT V/V.(TOPV/V)(15MM)
75	STEAM DRUM PRESS.TRANSMITTER V/V(BOTT.V/V.)(15MM)
76	STEAM DRUM VENT ISOL.V/V(TOP V/V)(32MM)
77	STEAM DRUM VENT ISOL.V/V(BOTT.V/V)(32MM)
78	S/HTR.DIV.PANEL OUTLET LINK VENT V/V(TOPV/V)(32MM)
79	S/HTR.DIV.PANEL OUTLET LINK VENT V/V(BOTT.V/V).(32MM)
80	STM.DRUM PURGE&BLED VENT V/V(TOP.V/V)(32MM)
81	STM.DRUM PURGE&BLED VENT V/V(BOTT.V/V)(32MM)
82	S/HTR.DIV.PANEL INLET LINK VENT V/V(TOP.V/V)(32MM)
83	S/HTR.DIV.PANEL INLET LINK VENT V/V(BOTT.V/V)(32MM)
84	HOT REHEAT L/H VENT ISOL.V/V(TOPV/V)(32MM)
85	HOT REHEAT L/H VENT ISOL.V/V(BOTT.V/V)(32MM)

86	S/HTR.DIV.PANEL INLET LINK VENT V/V(TOP.V/V(32MM)
87	S/HTR.DIV.PANEL INLET LINK VENT V/V(BOTT.V/V(32MM)
88	L/H MAIN STEAM VENT V/V.(TOP V/V(32MM)
89	L/H MAIN STEAM VENT V/V (BOTT.V/V(32MM)
90	LOW TEMP S/HTR.PEND.OUTLET HDR.VENT(TOPV/V(32MM)
91	LOW TEMP S/HTR.PEND.OUTLET HDR.VENT(BOTTV/V(32MM)
92	ECONOM.OUTLET LINK VENT V/V(TOPV/V(20MM)
93	ECONOM.OUTLET LINK VENT V/V(BOTT.V/V(20MM)
94	MAIN STEAM L/H PRESS. TRANSM.ISOL.V/V.(15MM)
95	MAIN STEAM L/H PRESS. TRANSM.ISOL.V/V.(15MM)
96	S/HTR.OUTLET L/H PRESS.TRANS.M.ISOL.V/V.(15MM)
97	ANTI-SIMMER DEVICE ISOL.V/V.(15MM)
98	R/H MAIN STEAM PRESS.TRANS.M.ISOL.V/V.(15MM)
99	R/H MAIN STEAM PRESS.TRANS.M.ISOL.V/V.(15MM)
100	SATURATED STEAM ISOL.V/V.(15MM)
101	S/BLOWER M/STEAM PRESS.SW.ISOL.V/V.(15MM)
102	R/H S/HTR.OUTLET PRESS.TRANS.M.ISOL.V/V.(15MM)
103	STEAM DRUM PRESS.TRANS.MITTER V/V.(15MM)
104	STEAM DRUM VENT ISOL.V/V.(TOP V/V(32MM)
105	STEAM DRUM VENT ISOL. V/V(BOTT.V/V(32MM)
106	S/HTR.DIV.PANEL INLET LINK VENT V/V(TOP.V/V(32MM)
107	S/HTR.DIV.PANEL INLET LINK VENT V/V(BOTT.V/V(32MM)
108	ST./DRUM PURGE &BLED ST.VENT V/V(TOP.V/V(32MM)
109	ST./DRUM PURGE &BLED ST.VENT V/V(BOTT.V/V(32MM)
110	R/H HOT REHEAT VENT V/V (TOP V/V(32MM)
111	R/H HOT REHEAT VENT V/V (BOTT.V/V(32MM)
112	L/TEMP.S/HTR.PEND.INLET HEADER VENT(TOPV/V(32MM)
113	L/TEMP.S/HTR.PEND.INLET HEADER VENT(BOTT.V/V(32MM)
114	S/HTR.DIV.PANEL INLET LINK VENT(TOP V/V(32MM)
115	S/HTR.DIV.PANEL INLET LINK VENT(BOTT.V/V(32MM)
116	R/H MAIN STEAM VENT.(TOP V/V(32MM)
117	R/H MAIN STEAM VENT.(BOTT.V/V(32MM)
118	L/TEMP.S/HTR.PEND.OUTL.HEADER VENT(TOP V/V(32MM)
119	L/TEMP.S/HTR.PEND.OUTL.HEADER VENT(BOTT.V/V(32MM)
120	ECON.OUTLET LINK VENT (TOP V/V(20MM)
121	ECON.OUTLET LINK VENT (BOTT.V/V(20MM)
122	L/H FRONT HYDRASTEP VENT V/V(MID.V/V(15MM)
123	L/H FRONT HYDRASTEP VENT V/V(TOP.V/V(15MM)
124	L/H FRONT HYDRASTEP VENT V/V(BOTT.V/V(15MM)
125	L/H FRONT HYDRASTEP DRAIN V/V(R/H V/V(15MM)
126	L/H FRONT HYDRASTEP DRAIN V/V(L/H V/V(15MM)
127	L/H FRONT HYDRASTEP W/ISOL.V/V(R/H V/V(20MM)
128	L/H FRONT HYDRASTEP W/ISOL.V/V(L/H V/V(32MM)
129	L/H FRONT HYDRASTEP S/ISOL.V/V(R/H V/V(20MM)
130	L/H FRONT HYDRASTEP S/ISOL.V/V(L/H V/V(32MM)
131	L/H STEAM DRUM LEVEL TRANSM.ISOL.V/V.(32MM)

132	L/H STEAM DRUM LEVEL TRANSM.ISOL.V/V.32mm
133	L/H STEAM DRUM LEVEL TRANSM.ISOL.V/V.(32mm)
134	L/H BACK HYDRASTEP STEAM ISOL.(R/H V/V(32MM))
135	L/H BACK HYDRASTEP WATER ISOL.(R/H V/V(32MM))
136	L/H BACK HYDRASTEP WATER ISOL.(L/H V/V(20MM))
137	L/H BACK HYDRASTEP STEAM ISOL.(L/H V/V(20MM))
138	L/H BACK HYDRASTEP VENT V/V.(TOP V/V(15MM))
139	L/H BACK HYDRASTEP VENT V/V.(MID. V/V(15MM))
140	L/H BACK HYDRASTEP VENT V/V(BOTT.V/V(15MM))
141	L/H BACK HYDRASTEP DRAIN V/V(R/H V/V(15MM))
142	L/H BACK HYDRASTEP DRAIN V/V(L/H V/V(15MM))
143	S/HTR.ATEMP.2 SPRAY WTR.SUPPLY TRANSM. V/V(15MM)
144	S/HTR.ATEMP.2 SPRAY WTR.SUPPLY TRANSM. V/V(15MM)
145	R/H FRONT HYDRASTEP VENT V/V.(TOP V/V(15MM))
146	R/H FRONT HYDRASTEP VENT V/V.(BOTT. V/V(15MM))
147	R/H FRONT HYDRASTEP VENT V/V.(MID.V/V(15MM))
148	R/H FRONT HYDRASTEP DRAIN V/V(L/H V/V(15MM))
149	R/H FRONT HYDRASTEP DRAIN V/V(R/H V/V(15MM))
150	R/H FRONT HYDRASTEP WATER ISOL.V/V(L/H V/V(20MM))
151	R/H FRONT HYDRASTEP WATER ISOL.V/V(R/H V/V(32MM))
152	R/H FRONT HYDRASTEP STEAM ISOL.V/V(L/H V/V(20MM))
153	R/H FRONT HYDRASTEP STEAM ISOL.V/V(R/H V/V(32MM))
154	R/H DRUM LEVEL TRANSM.ISOL.V/V.(32MM)
155	R/H DRUM LEVEL TRANSM.ISOL.V/V.(32MM)
156	R/H DRUM LEVEL TRANSM.ISOL.V/V(32MM)
157	R/H DRUM LEVEL TRANSM.ISOL.V/V.(32MM)
158	R/H BACK HYDRASTEP WATER ISOL.V/V(L/H V/V(32MM))
159	R/H BACK HYDRASTEP WATER ISOL.V/V(R/H V/V(20MM))
160	R/H BACK HYDRASTEP STEAM ISOL.V/V(L/H V/V(32MM))
161	R/H BACK HYDRASTEP STEAM ISOL.V/V(R/H V/V(20MM))
162	R/H BACK HYDRASTEP VENT ISOL.V/V(TOP V/V(15MM))
163	R/H BACK HYDRASTEP VENT ISOL.V/V(BOTT. V/V(15MM))
164	R/H BACK HYDRASTEP VENT ISOL.V/V(MID.V/V(15MM))
165	R/H BACK HYDRASTEP DRAIN ISOL.V/V(L/H V/V(15MM))
166	R/H BACK HYDRASTEP DRAIN ISOL.V/V(R/H V/V(15MM))
167	S/HTR.ATEMP.2 SPRAY WTR.SUPPLY TRANSM. V/V(15MM)
168	S/HTR.ATEMP.2 SPRAY WTR.SUPPLY TRANSM. V/V(15MM)
169	S/HTR.ATEMP.CONTROL MANIFOLD DRAIN V/V(20MM)
170	S/HTR.ATEMP.2 ISOL.V/V.(R/H TOP V/V(32MM))
171	S/HTR.ATEMP.2 ISOL.V/V.(R/H BOTT. V/V(32MM))
172	S/HTR.ATEMP.2 ISOL.V/V.(L/H TOP.V/V(32MM))
173	S/HTR.ATEMP.2 ISOL.V/V.(L/H BOTT.V/V(32MM))
174	S/HTR.ATEMP.2 ISOL.V/V.(L/H TOP.V/V(32MM))
175	S/HTR.ATEMP.2 ISOL.V/V.(L/H BOTT.V/V(32MM))
176	S/HTR.ATEMP.2 ISOL.V/V.(R/H TOP V/V(32MM))
177	S/HTR.ATEMP.2 ISOL.V/V.(R/H BOTT. V/V(32MM))

178	STEAM DRUM CONTINUOUS B/DOWN(TOP V/V(32MM)
179	BLOW DOWN HAND REG.V/V(BOTT.V/V(32MM)
180	B/PASS ROOF INLET HEADER DRAIN ISOL.V/V(32MM)
181	R/H HOT REHEAT BLOCK ISOL DRAIN V/V(20MM)
182	L/H HOT REHEAT BLOCK ISOL.DRAIN V/V.(20MM)
183	H.P.BYPASS ATEMP.SPRAY WTR.ISOL.V/V.(20MM)
184	H.P.BYPASS ATEMP.SPRAY WTR.ISOL.V/V.(20MM)
185	H.P.BYPASS ATEMP.SPRAY WTR.ISOL.V/V.(20MM)
186	H.P.BYPASS ATEMP.SPRAY WTR.ISOL.V/V.(20MM)
187	H.P.BYPASS ATEMP.SPRAY WTR.ISOL.V/V.(20MM)
188	L/H COLD REHEAT BLOCK V/V,DRAIN(20MM)
189	REHEAT INLET HEADERS DRAIN ISOL.V/V,(65MM)
190	R/H COLD REHEAT BLOCK V/V,DRAIN.(20MM)
191	L/H REHEATER ATEMP CTRL.STN.DRAIN.V/V.(20MM)
192	S/HTR.RADIANT INLET HEADER ISOL.V/V.(65MM)
193	H.P.BYPASS SPRAY WARMING ISOL.V/V.(40 mm)
194	H.P.BYPASS SPRAY WARMING NRV.ISOL.V/V.(50MM)
195	H.P.BYPASS SPRAY WARMING ISOL.V/V.(50MM)
196	R/H S/BLOWER LANCE BLOWERS DRAIN V/V.(20 mm)
197	L/H S/BLOWER LANCE BLOWERS DRAIN V/V.(20 mm)
198	REHEAT ATEMP.S/WTR.SUPPLY TRANSM.V/V.(15MM)
199	REHEAT ATEMP.S/WTR.SUPPLY TRANSM.V/V.(15MM)
200	L/H S/BLOWER LANCE BLOWERS DRAIN V/V.(20MM)
201	ECONOMISER PRESS.TRANS.M.ISOL.V/V.(15MM)
202	R/H S/BLOWER LANCE BLOWERS DRAIN V/V.(20MM)
203	S/BLOWER SEC/AIR HTR. AUX.STEAM.MASTER V/V.(100MM)
204	S/BLOWER SEC/AIR HTR. AUX.STEAM.SCR/D NRV.(100MM)
205	BWCP.1 L/H DISCHARGE V/V 16mm (Repack gland only).
206	BWCP.1 R/H DISCHARGE 16mm V/V (Repack gland only).
207	BWCP.2 L/H DISCHARGE 16mmV/V (Repack gland only).
208	BWCP.2 R/H DISCHARGE V/V (Repack gland only).(16 mm)
209	BWCP.3 L/H DISCHARGE 16mm V/V (Repack gland only).
210	BWCP.3 R/H DISCHARGE 16mmV/V (Repack gland only).
211	BWCP.1 SUCTION DRAIN ISOL. V/V(L/H V/V(20MM)
212	BWCP.1 SUCTION DRAIN ISOL. V/V(R/H V/V(20MM)
213	BWCP.1 L/H DIF.PRESS.TRANS.M.ISOL.V/V(L/H V/V(20MM)
214	BWCP.1 L/H DIF.PRESS.TRANS.M.ISOL.V/V(R/H V/V(20MM)
215	H.P.PURGE+FILL PUMP SUPPLY ISOL.V/V(R/H V/V(20MM)
216	H.P.PURGE+FILL PUMP SUPPLY ISOL.V/V(L/H V/V(20MM)
217	H.P.PURGE+FILL PUMP SUPPLY PRESS/G.N.R.V(20MM)
218	H.P.PURGE+FILL PUMP STRAINER ISOL. V/V.(20MM)
219	H.P.PURGE+FILL PUMP STRAINER DRAIN V/V.(20MM)
220	H.P.PURGE+FILL PUMP STRAINER OUTLET V/V.(20MM)
221	H.P.PURGE+FILL PUMP INLET PRESS/G.ISOL.V/V.(20MM)
222	H.P.PURGE+FILL PUMP INLET PRESS/G.ISOL.V/V.(20MM)
223	BWCP.SUCTION MANIFOLD DRAIN V/V.(20MM)

224	BWCP.2 WARMUP ISOL.V/V.(20MM)
225	BWCP.2 SUCTION DRAIN ISOL.V/V.(L/H V/V(20MM)
226	BWCP.2 SUCTION DRAIN ISOL.V/V.(R/H V/V(20MM)
227	BWCP.2 L/H DIFF.PRESS.TRASM.HP.V/V.(L/H V/V(20MM)
228	BWCP.2 L/H DIFF.PRESS.TRASM.LP.V/V.(R/H V/V(20MM)
229	H.P.PURGE+FILL PUMP SUPPLY ISOL.V/V.(R/H V/V(20MM)
230	H.P.PURGE+FILL PUMP PRESS/G.ISOL.(L/H V/V(20MM)
231	H.P.PURGE+FILL PUMP PRESS/G.NRV.(20MM)
232	H.P.PURGE+FILL PUMP STRAINER ISOL. V/V(20MM)
233	H.P.PURGE+FILL PUMP STRAINER DRAIN V/V.(20MM)
234	H.P.PURGE+FILL PUMP STRAINER NRV.(20MM)
235	H.P.PURGE+FILL PUMP STRAINER OUTLET V/V.(20MM)
236	H.P.PURGE+FILL PUMP INLET PRESS/G.ISOL.V/V.(20MM)
237	H.P.PURGE+FILL PUMP INLET PRESS/G.ISOL.V/V.(20MM)
238	H.P.PURGE+FILL PUMP HP.SUPPLY ISOL.V/V.(20MM)
239	BWCP.3 SUCTION DRAIN ISOL.V/V.(L/H V/V(20MM)
240	BWCP.3 SUCTION DRAIN ISOL.V/V.(R/H V/V(20MM)
241	BWCP.3 L/H DIFF.PRESS.TRASM.HP.V/V(L/H V/V(20MM)
242	BWCP.3 L/H DIFF.PRESS.TRASM.HP.V/V(R/H V/V(20MM)
243	H.P.PURGE+FILL LP.TEMP.SUPPLY ISOL.V/V.(20MM)
244	H.P.PURGE+FILL PUMP SUPPLY ISOL,V/V(R/H V/V(20MM)
245	H.P. PURGE+FILL PUMP SUPPLY PRESS/G.(20MM)
246	H.P.PURGE+FILL PUMP SUPPLY PRESS/G.(L/H V/V(20MM)
247	H.P.PURGE=FILL PUMP STRAINER ISOL.V/V.(20MM)
248	H.P.PURGE+FILL PUMP STRAINER DRAIN V/V.(20MM)
249	H.P.PURGE+FILL PUMP STRAINER NRV.(20MM)
250	H.P.PURGE=FILL PUMP STRAINER ISOL.V/V.(OUTL.)(20MM)
251	H.P.PURGE+FILL PRESS/G.ISOL.V/V(BOTT.V/V(20MM)
252	H.P.PURGE+FILL PRESS/G.ISOL.V/V(TOP.V/V(20MM)
253	H.P.PURGE+FILL LP.TEMP.SUPPLY NRV.(20MM)
254	H.P.PURGE+FILL LP.TEMP.SUPPLY ISOL.V/V(R/H V/V(20MM)
255	H.P.PURGE+FILL HP.SUPPLY ISOL.(BOTT.V/V(20MM)
256	H.P.PURGE+FILL LP.TEMP SUPPLY ISOL.(L/H TOP V/V(20MM)
257	H.P.PURGE+FILL HP.SUPPLY ISOL.NRV.(20MM)
258	H.P.PURGE+FILL STRAINER INLET ISOL.(TOP V/V(20MM)
259	H.P.PURGE+FILL STRAINER OUTLET ISOL.(BOTT. V/V(20MM)
260	H.P.PURGE+FILL STRAINER DRAIN V/V.(L/H V/V(20MM)
261	H.P.PURGE+FILL STRAINER DRAIN V/V.(R/H V/V(20MM)
262	H.P.FEED WTR.LINE VENT V/V.(TOP V/V(25MM)
263	H.P.FEED WTR.LINE VENT V/V.(BOTT. V/V(25MM)
264	BWCP.3 DISCHARGE BYPASS V/V(R/H V/V(20MM)
265	BWCP.3 DISCHARGE BYPASS V/V(MID. V/V(20MM)
266	BWCP.3 DISCHARGE DRAIN V/V(L/H V/V(20MM)
267	H.P.PURGE+FILL STR.DRAIN BYPASS.(BOTT.R/H V/V(20MM)
268	H.P.PURGE+FILL PUMP INLET DRAIN.(BOTT.L/H V/V(20MM)
269	BWCP.2 DISCHARGE BYPASS V/V(R/H V/V(20MM)

270	BWCP.2 DISCHARGE BYPASS V/V(MID. V/V(20MM)
271	BWCP.2 DISCHARGE DRAIN V/V(L/H V/V(20MM)
272	H.P.PURGE+FILL STR. BYPASS V/V(BOTT.R/H V/V(20MM)
273	H.P.PURGE+FILL PUMP INLET DRAIN.(BOTT.L/H V/V(20MM)
274	BWCP.1 DISCHARGE V/V BYPASS V/V.(R/H V/V(20MM)
275	BWCP.1 DISCHARGE V/V BYPASS V/V.(MID. V/V(20MM)
276	BWCP.1 DISCHARGE V/V DRAIN V/V.(L/H V/V(20MM)
277	H.P.PURGE+FILL PUMP STRAINER V/V(BOTT. R/H V/V(20MM)
278	H.P.PURGE+FILL PUMP INLET DRAIN.(BOTT.L/H V/V(20MM)
279	BACKPASS LOWER HEADERS DRAIN REG.V/V.(150MM)
280	BACKPASS LOWER HEADERS DRAIN NRV.(150MM)
281	REHEATER INLET HEADER DRAIN ISOL. V/V.(65MM)
282	REHEATER INLET HEADER DRAIN NRV.(65MM)
283	S/BLOWER FRONT WALL BLOWERS DRAIN V/V.(20MM)
284	S/BLOWER R/H WALL BLOWERS DRAIN V/V.(20MM)
285	S/BLOWERS REAR WALL BLOWERS DRAIN V/V.(20MM)
286	S/BLOWERS L/H WALL BLOWERS DRAIN V/V.(20MM)
287	AIR HEATER S/BLOWERS DRAIN V/V.(20MM)
288	R/H COLD REHEAT DRAIN POT DRAIN V/V.(65MM)
289	R/H DRAIN POT WATER LEVEL ISOL.V/V.(25MM)
290	R/H DRAIN POT WATER LEVEL ISOL.V/V.(25MM)
291	L/H COLD REHEAT DRAIN POT DRAIN V/V.(65MM)
292	L/H DRAIN POT WATER LEVEL ISOL.V/V.(25MM)
293	L/H DRAIN POT WATER LEVEL ISOL.V/V.(25MM)
294	S/BLOWER AIR/HTR.DRAIN ISOL.V/V.(32MM)
295	S/BLOWER AIR/HTR.DRAIN NRV.(32MM)
296	STEAM COIL AIR/HTR.COMM.STEAM TRAP DRAIN.(50MM)
297	STEAM COIL AIR/HTR.L/H ST/TRAP ISOL. V/V.(32MM)
298	STEAM COIL AIR/HTR.L/H ST/TRAP ISOL. V/V.(32MM)
299	STEAM COIL AIR/HTR.R/H ST/TRAP ISOL.V/V.(32MM)
300	STEAM COIL AIR/HTR.R/H ST/TRAP ISOL.V/V.(32MM)
301	STEAM COIL AIR/HTR.COMM.STEAM TRAP DRAIN(50MM)
302	STEAM COIL AIR/HTR.L/H ST/TRAP ISOL. V/V.(32MM)
303	STEAM COIL AIR/HTR.L/H ST/TRAP ISOL. V/V.(32MM)
304	STEAM COIL AIR/HTR.R/H ST/TRAP ISOL.V/V.(32MM)
305	STEAM COIL AIR/HTR.R/H ST/TRAP ISOL.V/V.(32MM)
306	STEAM COIL AIR/HTR.VENT V/V. 20mm
307	R/H ST/COIL AIR/HTR.SUPPLY ISOL.V/V. 125mm
308	L/H ST/COIL AIR/HTR.SUPPLY ISOL.V/V.(125MM)
309	S/BLOWER DRAIN LINE ISOL. V/V.(32MM)
310	S/BLOWER DRAIN LINE NRV.(32MM)
311	S/BLOWER DRAIN LINE ISOL. V/V.(32MM)
312	S/BLOWER DRAIN LINE NRV.(32MM)
313	BACKPASS ROOF INLET HEADERS DRAIN ISOL.V/V.(32MM)
314	BACKPASS ROOF INLET HEADERS DRAIN NRV.(32MM)
315	HYDRATEST WATER GAUGE DRAIN LINE NRV.(65MM)

316	S/HTR.RADIANT WALL INLET DRAIN ISOL.V/V.(65MM)
317	S/HTR.RADIANT WALL INLET DRAIN NRV.(65MM)
318	CONTINUOUS BLOWDOWN VALVE(32MM)
319	BOILER DRAIN LINE NRV.(32MM)
320	HOT REHEAT PRESS.BLOCK ISOL.DRAIN V/V.(32MM)
321	HOT REHEAT PRESS.BLOCK ISOL.DRAIN NRV.(32MM)
322	REHEAT CHECK V/V NRV.(32MM)
323	H.P.BYPASS CHECK V/V NRV.(32MM)
324	S/BLOWER DRAIN LINE ISOL. V/V.(20MM)
325	S/BLOWERS DRAIN LINE ISOL.V/V.NRV.(20MM)
326	BWCP. SUCTION MANIFOLD DRAIN V/V.(20MM)
327	BWCP. SUCTION MANIFOLD DRAIN NRV.(20MM)
328	REHEAT CHECK V/V NRV.(20MM)
329	S/BLOWER DRAIN LINE ISOL. V/V.(20MM)
330	S/BLOWER DRAIN LINE ISOL.NRV(20MM)
331	COLD REHEAT BLOCK ISOL.DRAIN V/V.(32MM)
332	COLD REHEAT BLOCK ISOL.DRAIN NRV.(32MM)
333	ECONOMISER INLET DRAIN ISOL.V/V.(32MM)
334	ECONOMISER INLET DRAIN ISOL.NRV.(32MM)
335	S/BLOWER DRAIN LINE ISOL.V/V.(32MM)
336	S/BLOWER DRAIN LINE ISOL.NRV.(32MM)
337	L/H AUX.STEAM DRAIN V/V.(20MM)
338	R/H AUX STEAM DRAIN V/V.(20MM)
339	R/H COLD REHEAT DRAIN POT DRAIN V/V.(80MM)
340	L/H COLD REHEAT DRAIN POT DRAIN V/V.(65MM)
341	MAIN STEAM STOP V/V.DRAIN ISOL.V/V.(50MM)
342	R/H COLD REHEAT DRAIN POT DRAIN V/V.NRV.(50MM)
343	L/H COLD REHEAT DRAIN POT DRAIN V/V.NRV.(50MM)
344	MAIN STEAM STOP V/V.DRAIN ISOL.NRV.(50MM)
345	R/H LP.BYPASS DRAIN ISOL.V/V.(65MM)
346	R/H LP.BYPASS DRAIN ISOL.V/V.NRV.(50MM)
347	L/H HOT REHEAT STRAINER ISOL.V/V.(65MM)
348	L/H HOT REHEAT STRAINER ISOL.V/V.NRV.(65MM)
349	L/H LP.BYPASS DRAIN ISOL.V/V.(80MM)
350	L/H LP.BYPASS DRAIN ISOL.V/V.NRV.(50MM)
351	R/H HOT REHEAT STRAINER ISOL.V/V.(65MM)
352	R/H HOT REHEAT STRAINER ISOL.V/V.NRV.(65MM)
353	L/H MAIN STEAM WARMING ISOL.V/V.(32MM)
354	L/H MAIN STEAM WARMING ISOL.V/V.NRV.(32MM)
355	R/H MAIN STEAM STRAINERS DRAIN ISOL.V/V.(65MM)
356	R/H MAIN STEAM STRAINERS DRAIN ISOL.V/V.NRV.(65MM)
357	R/H MAIN STEAM WARMING ISOL.V/V.(32MM)
358	R/H MAIN STEAM WARMING ISOL.V/V.NRV.(32MM)
359	L/H MAIN STEAM STRAINERS DRAIN ISOL.V/V.(80MM)
360	L/H MAIN STEAM STRAINERS DRAIN ISOL.V/V.NRV.(80MM)
361	L/H HOT REHEAT DRAIN AT STRAINER ISOL.V/V.(80MM)

362	L/H HOT REHEAT DRAIN AT STRAINER ISOL.V/V.NRV.(80MM)
363	R/H HOT REHEAT DRAIN AT STRAINER ISOL. V/V.(80MM)
364	R/H HOT REHEAT DRAIN AT STRAINER ISOL. V/V.NRV.(80MM)
365	L/H MAIN STEAM AT STRAINER ISOL.V/V.(80MM)
366	L/H MAIN STEAM AT STRAINER ISOL.V/V.NRV.(80MM)
367	R/H MAIN STEAM AT STRAINER ISOL. V/V.(80MM)
368	R/H MAIN STEAM AT STRAINER ISOL. V/V.NRV.(80MM)
369	ADDITIONAL COLD REHEAT DRAIN ISOL.V/V.(80MM)
370	ADDITIONAL COLD REHEAT DRAIN ISOL.V/V.NRV.(80MM)
371	STEAM COIL A/HTR COMMON DRAIN V/V.(80MM)
372	STEAM COIL A/HTR COMMON DRAIN V/V.NRV.(50MM)
373	FURNACE LOWER FRONT DRUM DRAIN V/V.(150M,M)
374	FURNACE LOWER FRONT DRUM DRAIN V/V.NRV.(150MM)
375	FURNACE LOWER FRONT DRUM DRAIN V/V.NRV.(150MM)
376	DRAIN VESSEL DRAIN.V/V.(32MM)
377	CHEMICAL DOZING ISOL.V/V.(20MM)
378	SAH S/BLOWING AUX STEAM SUPPLY NRV (350MM)
379	SAH S/BLOWING AUX STEAM SUPPLY MOT. ISOL.V/V (100MM)
380	FURNACE LOWER REAR DRUM BLOWDOWN I/V (150MM)
381	MAIN STEAM STOP VALVE (450mm)
382	MAIN STEAM STOP VALVE (450mm)
383	MAIN STEAM STOP VALVE BYPASS VALVE (250MM)
384	MAIN STEAM STOP VALVE BYPASS VALVE (250MM)
385	MAIN STEAM STOP VALVE BYPASS VALVE (250MM)
386	MAIN STEAM STOP VALVE BYPASS VALVE (250MM)
387	AUX STEAM COMMON RANGE V/V (50MM)
388	AUX STEAM COMMON RANGE V/V (50MM)
389	AUX STEAM COMMON RANGE V/V (50MM)
390	AUX STEAM COMMON RANGE V/V (50MM)
391	AUX STEAM DRAIN V/V (20MM)

KENDAL GO/MGO TURBINE VALVES (351)		
QIP	Task Name	Size(mm)
1	Deaerator Warming Steam Control Valve	150
2	Deaerator connection to Condensate system Isolating Valve	50
3	Deaerator Drain To Sampling System Isolating Valve	15
4	Deaerator Drain To Recovered Water Isolating Valve	150
5	Deaerator Drain To Recovered Water Isolating Valve Bypass Valve	25
6	Deaerator Vent To Atmosphere Isolating Valve	50
7	Deaerator Vent To Atmosphere Isolating Valve	50
8	Deaerator Vent To Atmosphere Isolating Valve	50
9	Deaerator Vent To Atmosphere Isolating Valve	50
10	Deaerator Vent To Atmosphere Isolating Valve	100
11	Deaerator Vent To Atmosphere Isolating Valve	50

12	Deaerator Vent To Atmosphere Isolating Valve	25
13	Deaerator Vent To Atmosphere Isolating Valve	25
14	B F P A Discharge Isolating Valve	300
15	B F P A Discharge Isolating Valve Bypass Valve	25
16	B F P A Discharge Isolating Valve Bypass Valve	25
17	B F P B Discharge Isolating Valve	300
18	B F P B Discharge Isolating Valve Bypass Valve	25
19	B F P B Discharge Isolating Valve Bypass Valve	25
20	B F P C Discharge Isolating Valve	300
21	B F P C Discharge Isolating Valve Bypass Valve	25
22	B F P C Discharge Isolating Valve Bypass Valve	25
23	Feedwater Control Valve No 1	300
24	Feedwater Control Valve No1 Inlet Isolating Valve	300
25	Feedwater Control Valve No1 Outlet Isolating Valve	300
26	Feedwater Control Valve No 2	300
27	Feedwater Control Valve No2 Inlet Isolating Valve	300
28	Feedwater Control Valve No2 Outlet Isolating Valve	300
29	Feedwater Control Valve No 3	300
30	Feedwater Control Valve No3 Inlet Isolating Valve	300
31	Feedwater Control Valve No3 Outlet Isolating Valve	300
32	H P Heater 5,1 Feedwater Inlet Isolating valve	300
33	H P Heater 5,1 Feedwater Inlet Isolating valve Bypass Valve	25
34	H P Heater 5,1 Feedwater Inlet Isolating valve Bypass Valve	25
35	H P Heater 5,1 Feedwater outlet Isolating valve	300
36	H P Heater 5,1 Feedwater outlet Isolating valve Bypass Valve	25
37	H P Heater 5,1 Feedwater outlet Isolating valve Bypass Valve	25
38	H P Heater 5,1 Feedwater Saftey Valve No1 Inlet Isolating valve	25
39	H P Heater 5,1 Feedwater Saftey Valve No2 Inlet Isolating valve	25
40	H P Heater 5,2 Feedwater Inlet Isolating valve	300
41	H P Heater 5,2 Feedwater Inlet Isolating valve Bypass Valve	25
42	H P Heater 5,2 Feedwater Inlet Isolating valve Bypass Valve	25
43	H P Heater 5,2 Feedwater outlet Isolating valve	300
44	H P Heater 5,2 Feedwater outlet Isolating valve Bypass Valve	25
45	H P Heater 5,2 Feedwater outlet Isolating valve Bypass Valve	25
46	H P Heater 5,2 Feedwater Saftey Valve No1 Inlet Isolating valve	25
47	H P Heater 5,2 Feedwater Saftey Valve No1 Inlet Isolating valve	25
48	H P Heater 5,1 Feedwater Drain Isolating valve	25
49	H P Heater 5,1 Feedwater Drain Isolating valve	25
50	H P Heater 5,1 Feedwater Drain Isolating valve	25
51	H P Heater 5,1 Feedwater Drain Isolating valve	25
52	H P Heater 5,1 Feedwater Drain Isolating valve	25
53	H P Heater 5,1 Vent To Recovered Water Isolating Valve	25
54	H P Heater 5,1 Vent To Recovered Water Isolating Valve	25
55	H P Heater 5,1 Vent To Recovered Water Isolating Valve	25
56	H P Heater 5,1 Vent To Recovered Water Isolating Valve	25
57	H P Heater 5,2 Steam Side Pressure Gauge Isolating Valve	15

58	H P Heater 5,2 Vent To Recovered Water Isolating Valve	25
59	H P Heater 5,2 Vent To Recovered Water Isolating Valve	25
60	H P Heater 5,2 Vent To Recovered Water Isolating Valve	25
61	H P Heater 5,2 Vent To Recovered Water Isolating Valve	25
62	H P Heater 6,1 Vent To Recovered Water Isolating Valve	25
63	H P Heater 6,1 Vent To Recovered Water Isolating Valve	25
64	H P Heater 6,1 Vent To Recovered Water Isolating Valve	25
65	H P Heater 6,1 Vent To Recovered Water Isolating Valve	25
66	H P Heater 6,2 Steam Side Pressure Gauge Isolating Valve	15
67	H P Heater 6,2 Vent To Recovered Water Isolating Valve	25
68	H P Heater 6,2 Vent To Recovered Water Isolating Valve	25
69	H P Heater 6,2 Vent To Recovered Water Isolating Valve	25
70	H P Heater 6,2 Vent To Recovered Water Isolating Valve	25
71	I p Attemperature Spraywater N R V	65
72	I p Attemperature Spraywater Isolating Valve	80
73	I p Attemperature Spraywater N R V	65
74	I p Attemperature Spraywater Isolating Valve	80
75	I p Attemperature Spraywater N R V	65
76	I p Attemperature Spraywater Isolating Valve	80
77	Cold Re-Heat Drains To Condenser Control Valve	250
78	Cold Re-Heat Drains To Recovered Water Isolating Valve	20
79	Cold Re-Heat Drains To Recovered Water Isolating Valve	20
80	Cold Re-Heat Drains To Condenser Control Valve	250
81	Cold Re-Heat Drains To Recovered Water Isolating Valve	20
82	Cold Re-Heat Drains To Recovered Water Isolating Valve	20
83	Extraction 5 N R V No 1	15
84	Extraction 5 N R V No 2	250
85	H P Heater 5,1 Steam Inlet Isolating Valve	25
86	H P Heater 5,1 Steam Inlet Isolating Valve Bypass Valve	25
87	H P Heater 5,1 Steam Inlet Isolating Valve Bypass Valve	15
88	H P Heater 5,2 Steam Inlet Isolating Valve	250
89	H P Heater 5,2 Steam Inlet Isolating Valve Bypass Valve	25
90	H P Heater 5,2 Steam Inlet Isolating Valve Bypass Valve	25
91	Extraction 5 Pressure Gauge Isolating valve	500
92	H P Heater 6,1 Steam Inlet Isolating Valve	500
93	H P Heater 6,1 Steam Inlet Isolating Valve Bypass Valve	25
94	H P Heater 6,1 Steam Inlet Isolating Valve Bypass Valve	25
95	Extraction 6 Pressure Gauge Isolating valve	25
96	H P Heater 6,2 Steam Inlet Isolating Valve	25
97	H P Heater 6,2 Steam Inlet Isolating Valve Bypass Valve	400
98	H P Heater 6,2 Steam Inlet Isolating Valve Bypass Valve	350
99	Extraction 2 To L P Heater 1 NRV	300
100	Extraction 2 Drain To Recoverd Water Isolating Valve	300
101	Extraction 2 Drain To Recoverd Water Isolating Valve	400
102	Extraction 3 To L P Heater 3 Inlet Isolating Valve	50
103	Extraction 3 Condensate Drain To Condenser Isolating Valve	50

104	Extraction 3 Condensate Drain To Condenser Isolating Valve	50
105	Aux Steam To D S T Control Valve	50
106	Aux-Steam to Deaerator Isolating Valve	350
107	Aux Steam H P Feed From Bypass N R V	350
108	Aux Steam H P Feed From Bypass Isolating Valve	32
109	Aux Steam H P Feed Pressure Reducing Valve	80
110	Aux Steam To Unit - Isolating Valve	400
111	Aux Steam To Unit - Isolating Valve	32
112	Aux Steam To Unit - Isolating Valve Bypass Valve	32
113	Aux Steam Pressure Reducing Control Valve	32
114	Aux-Steam to Deaerator Isolating Valve	150
115	Aux-Steam to Deaerator Isolating Valve Bypass Valve	20
116	Aux-Steam to Deaerator Isolating Valve Bypass Valve	20
117	Aux-Steam to Deaerator Isolating Valve	50
118	Aux-Steam to Deaerator Isolating Valve Bypass Valve	50
119	Aux-Steam to Deaerator Isolating Valve Bypass Valve	800
120	Aux-Steam to Deaerator Isolating Valve	800
121	CEP A Suction Isolation Valve	500
122	CEP B Suction Isolation Valve	500
123	Condensate A Extraction Pump Non-Return Valve	500
124	Condensate B Extraction Pump Non-Return Valve	500
125	Condenser Level Control Valve	500
126	CLC Bypass Valve	500
127	Drain Cooler Condensate Inlet Isolating Valve	32
128	Drain Cooler Condensate Inlet Isolating Valve Bypass Valve	500
129	L P Heater 1 Condensate Outlet Isolating Valve	32
130	L P Heater 1 Condensate Outlet Isolating Valve Bypass Valve	500
131	L P Heater 2 Condensate Inlet Isolating Valve	32
132	L P Heater 2 Condensate Inlet Isolating Valve Bypass Valve	500
133	L P Heater 2 Condensate Outlet Isolating Valve	32
134	L P Heater 2 Condensate Outlet Isolating Valve Bypass Valve	500
135	L P Heater 3 Condensate Inlet Isolating Valve e	32
136	L P Heater 3 Condensate Inlet Isolating Valve Bypass Valve	500
137	L P Heater 3 Outlet Isolating Valve	32
138	L P Heater 3 Outlet Isolating Valve Bypass Valve	300
139	L P Heater 1 Condensate Bypass Isolating Valve	400
140	L P Heater 1 Condensate Bypass Isolating Valve Bypass Valve	500
141	CRH Non Return Valve	32
142	CRH Non Return Valve	500
143	L P Heater 2 Condensate Bypass Isolating Valve	32
144	L P Heater 2 Condensate Bypass Isolating Valve Bypass Valve	25
145	L P Heater 1 Vent To Clean Drains Isolating Valve	25
146	L P Heater 1 Vent To Clean Drains Isolating Valve	80
147	L P Heater 1 Vent To Clean Drains Isolating Valve	25
148	L P Heater 2 Vent To Clean Drains Isolating Valve	25
149	L P Heater 2 Vent To Clean Drains Isolating Valve	80

150	L P Heater 2 Vent To Clean Drains Isolating Valve	25
151	L P Heater 3 Vent To Clean Drains Isolating Valve	25
152	L P Heater 3 Vent To Clean Drains Isolating Valve	80
153	L P Heater 3 Vent To Clean Drains Isolating Valve	125
154	B F P - A - I P Spraywater N R V	125
155	B F P - A - I P Spraywater Isolating Valve	125
156	B F P - B - I P Spraywater N R V	125
157	B F P - B - I P Spraywater Isolating Valve	125
158	B F P - C - I P Spraywater N R V	125
159	B F P - C - I P Spraywater Isolating Valve	150
160	H P Heater 5,1 Condensate To Deaerator Inlet Isolating valve	20
161	H P Heater 5,1 Condensate To Deaerator Inlet Isolating valve Bypass Valve	150
162	H P Heater 5,1 Condensate To Condenser Inlet Isolating valve	20
163	H P Heater 5,1 Condensate To Condenser Inlet Isolating valve Bypass Valve	150
164	H P Heater 5,1 Condensate to Deaerator Isolating Valve	20
165	H P Heater 5,1 Condensate to Deaerator Isolating Valve Bypass Valve	15
166	H P Heater 5,1 Condensate To Chemical Analyser Isolating valve	25
167	H P Heater 5,1 Condensate Drain Isolating valve	25
168	H P Heater 5,1 Condensate Drain Isolating valve	25
169	H P Heater 5,1 Condensate Drain To Recovered Water Isolating Valve	25
170	H P Heater 5,1 Condensate Drain Isolating valve	25
171	H P Heater 5,1 Condensate Drain Isolating valve	25
172	H P Heater 5,1 Condensate Drain Isolating valve	25
173	H P Heater 5,1 Condensate Drain Isolating valve	25
174	H P Heater 5,1 Condensate Drain Isolating valve	150
175	H P Heater 5,2 Distillate to DST Non Return Valve	150
176	H P Heater 5,2 Condensate To Deaerator Inlet Isolating valve	20
177	H P Heater 5,2 Condensate To Deaerator Inlet Isolating valve Bypass Valve	150
178	H P Heater 5,2 Condensate To Condenser Inlet Isolating valve	20
179	H P Heater 5,2 Condensate To Condenser Inlet Isolating valve Bypass Valve	150
180	H P Heater 5,1 Condensate to Deaerator Isolating Valve	20
181	H P Heater 5,1 Condensate to Deaerator Isolating Valve Bypass Valve	15
182	H P Heater 5,2 Condensate To Chemical Analyser Isolating valve	25
183	H P Heater 5,2 Condensate Drain Isolating valve	25
184	H P Heater 5,2 Condensate Drain Isolating valve	25
185	H P Heater 5,1 Condensate Drain To Recovered Water Isolating Valve	25
186	H P Heater 5,2 Condensate Drain Isolating valve	25
187	H P Heater 5,2 Condensate Drain Isolating valve	25
188	H P Heater 5,2 Condensate Drain Isolating valve	25
189	H P Heater 5,2 Condensate Drain Isolating valve	25
190	H P Heater 5,2 Condensate Drain Isolating valve	150
191	H P Heater 6,1 Condensate To Condenser Inlet Isolating valve	20
192	H P Heater 6,1 Condensate To Condenser Inlet Isolating valve Bypass Valve	20
193	H P Heater 6,1 Condensate To Condenser Inlet Isolating valve Bypass Valve	15
194	H P Heater 6,1 Condensate To Chemical Analyser Isolating valve	25
195	H P Heater 6,1 Condensate Drain Isolating valve	25

196	H P Heater 6,1 Condensate Drain Isolating valve	25
197	H P Heater 6,1 Condensate Drain Isolating valve	150
198	H P Heater 6,2 Condensate To Condenser Inlet Isolating valve	20
199	H P Heater 6,2 Condensate To Condenser Inlet Isolating valve Bypass Valve	20
200	H P Heater 6,2 Condensate To Condenser Inlet Isolating valve Bypass Valve	15
201	H P Heater 6,2 Condensate To Chemical Analyser Isolating valve	25
202	H P Heater 6,2 Condensate Drain Isolating valve	25
203	H P Heater 6,2 Condensate Drain Isolating valve	25
204	H P Heater 6,2 Condensate Drain Isolating valve	15
205	L P Extraction 1 Condensate Pressure Gauge Isolating Valve	15
206	Drain Cooler pressure Gauge Isolating Valve	50
207	Drain Cooler Drain To Waste Isolating Valve	25
208	Drain Cooler Vent To Waste Isolating Valve	25
209	Drain Cooler Vent To Waste Isolating Valve	25
210	L P Extraction 1 Drain To Waste Isolating Valve	150
211	I P Extraction 2 Pump No1 Suction Isolating Valve	50
212	L P Extraction 2 Circulating Pump No1 Inlet Isolating Valve	15
213	L P Extraction 2 Circulating Pump No1 Inlet Isolating Valve Bypass Valve	150
214	I P Extraction 2 Pump No1 Discharge Isolating Valve	25
215	L P Extraction 2 Condensate Drain To Waste Isolating Valve	50
216	I P Extraction 2 Pump No2 Suction Isolating Valve	50
217	L P Extraction 2 Circulating Pump No2 Inlet Isolating Valve	50
218	L P Extraction 2 Circulating Pump No2 Inlet Isolating Valve Bypass Valve	50
219	I P Extraction 2 Pump No2 Discharge Isolating Valve	100
220	L P Extraction 2 Condensate Drain To Waste Isolating Valve	50
221	L P extraction 2 Condensate Circulation Isolating Valve	25
222	L P extraction 2 Condensate Circulation Isolating Valve Bypass Valve	25
223	L P extraction 2 Condensate To Condenser Isolating Valve	300
224	L P extraction 2 Condensate To Condenser Isolating Valve Bypass Valve	25
225	I P Extraction 2 Pump No1 Minimum fFow Isolating Valve	25
226	L P extraction 2 Condensate Minimum Flow Isolating Valve	300
227	I P Extraction 2 Pump No2 Minimum fFow Isolating Valve	25
228	L P extraction 2 Condensate Minimum Flow Isolating Valve	25
229	L P extraction 3 Condensate To L P Heater 2 Isolating Valve	300
230	L P extraction 3 Condensate To L P Heater 2 Drain To Waste Isolating Valve	25
231	L P extraction 3 Condensate To Condenser Isolating Valve	25
232	L P extraction 3 Condensate To Condenser Isolating Valve Bypass Valve	300
233	Demin water to CST Isolating Valve	300
234	Demin Water to CST Control Valve	300
235	Condenser Make Up Control Valve	300
236	Condenser Return Control Valve	300
237	Standby condensate punp 1 leak-off valve	300
238	Standby condensate punp 2 leak-off valve	300
239	Condensate to CST Isolating Valve	300
240	Condendate to CST NRV	300
241	Clean Drains Pump No1 Suction Isolating Valve	300

242	Clean Drains Pump No1 Discharge Isolating Valve	25
243	Clean Drains Pump No2 Suction Isolating Valve	25
244	Clean Drains Pump No2 Discharge Isolating Valve	300
245	Sealing water tank feed from condensate isolating valve	25
246	Sealing water tank feed from condensate control valve	25
247	Sealing water tank feed from demin water isolating valve	25
248	Sealing water tank feed from condensate non-return valve	25
249	Sealing Water Tank downstream isolation valve	300
250	Main Steam Strainer Drain Isolating Valve	25
251	Main Steam Strainer Drain Isolating Valve	25
252	Hot Re-Heat Strainer Drain Isolating Valve	300
253	Hot Re-Heat Strainer Drain Isolating Valve	25
254	Main Steam Strainer Drain Isolating Valve	25
255	Main Steam Strainer Drain Isolating Valve	25
256	Hot Re-Heat Strainer Drain Isolating Valve	25
257	Hot Re-Heat Strainer Drain Isolating Valve	25
258	RH Main Steam Warming Drain Valve	25
259	L P Bypass Drain Isolating Valve	25
260	L P Bypass Drain Isolating Valve	25
261	L P Bypass Drain Isolating Valve	25
262	L P Bypass Drain Isolating Valve	25
263	Cold Re-Heat N R V Drain Isolating Valve	25
264	Cold Re-Heat N R V Drain Isolating Valve	25
265	Main Steam Strainer Drain Isolating Valve	25
266	Main Steam Strainer Drain Isolating Valve	15
267	Main Steam Strainer Drain Isolating Valve	25
268	Main Steam Strainer Drain Isolating Valve	25
269	Main Steam Strainer Drain Isolating Valve	25
270	Main Steam Strainer Drain Isolating Valve	25
271	Main Steam Strainer Drain Isolating Valve	25
272	Main Steam Strainer Drain Isolating Valve	25
273	Drain At H P Governor Valve No1 Isolating Valve	25
274	Drain At H P Governor Valve No2 Isolating Valve	25
275	Drain At H P Governor Valve No3 Isolating Valve	15
276	Drain At H P Governor Valve No4 Isolating Valve	25
277	Drain Valve After H P Valve No 3 Isolating Valve	25
278	Drain Valve After H P Valve No 4 Isolating Valve	25
279	H P Turbine Drain Isolating Valve	25
280	Drain At I P valve No 1 Isolating Valve	65
281	Drain At I P valve No 2 Isolating Valve	80
282	Drain At I P valve No 3 Isolating Valve	65
283	Drain At I P valve No 4 Isolating Valve	80
284	Drain After I P Valves No 3 & 4 Isolating Valve	65
285	Drain Before Extraction 5 N R V Isolating Valve	80
286	Drain Before Extraction 4 N R V Isolating Valve	250
287	Drain Before Extraction 3 N R V Isolating Valve	20

288	Drain Before Extraction 2 N R V Isolating Valve	20
289	Drain Before C R H N R V Isolating Valve	250
290	Drain Before C R H N R V Isolating Valve	20
291	LH LP Crossover Drains Valve	20
292	RH LP Crossover Drains Valve	15
293	Drain At Gland Steam Header Isolating Valve	250
294	Drain At H P Governor Valve No1 Isolating Valve	25
295	Gland Steam Condenser Steam Inlet Isolating Valve	25
296	Gland Steam Condenser Drain To Condenser Isolating Valve	15
297	Gland Steam Blower No 1 Suction Isolating Valve	250
298	Waterbox Drain To Clean Drains Isolating Valve	25
299	Waterbox Vent To Recoverd Water Isolating Valve	25
300	Forced Cooling To H P Turbine Valve No 1 N R V	500
301	Forced Cooling To H P Turbine Valve No 1 Isolating Valve	500
302	Forced Cooling To H P Turbine Valve No 2 N R V	25
303	Forced Cooling To H P Turbine Valve No 2 Isolating Valve	25
304	Forced Cooling To H P Turbine Valve No 3 N R V	25
305	Forced Cooling To H P Turbine Valve No 3 Isolating Valve	25
306	Forced Cooling To H P Turbine Valve No 4 N R V	400
307	Forced Cooling To H P Turbine Valve No 4 Isolating Valve	350
308	Forced Cooling To I P Turbine Valve No 1 N R V	300
309	Forced Cooling To I P Turbine Valve No 1 Isolating Valve	300
310	Forced Cooling To I P Turbine Valve No 2 N R V	400
311	Forced Cooling To I P Turbine Valve No 2 Isolating Valve	50
312	Forced Cooling To I P Turbine Valve No 3 N R V	50
313	Forced Cooling To I P Turbine Valve No 3 Isolating Valve	50
314	Forced Cooling To I P Turbine Valve No 4 N R V	50
315	Forced Cooling To I P Turbine Valve No 4 Isolating Valve	350
316	Forced Cooling At H P Turbine Vent Isolating Valve	350
317	Forced Cooling At H P Turbine Vent Isolating Valve	32
318	Forced Cooling At H P Turbine Vent Isolating Valve	80
319	Forced Cooling At H P Turbine Vent Isolating Valve	400
320	Forced Cooling At H P Turbine Vent Isolating Valve	32
321	Forced Cooling At H P Turbine Vent Isolating Valve	32
322	Forced Cooling At H P Turbine Vent Isolating Valve	32
323	Forced Cooling At H P Turbine Vent Isolating Valve	150
324	Forced Cooling Piston Pipe Vent Isolating Valve	20
325	Forced Cooling Piston Pipe Vent Isolating Valve	20
326	Forced Cooling Piston Pipe Vent Isolating Valve	50
327	CW transfer pump Discharge Isolation valve	50
328	CW transfer pump Discharge NRV	800
329	CW transfer pump Suction Isolation valve	800
330	CW transfer pump Discharge Isolation valve	500
331	CW transfer pump Discharge NRV	500
332	CW transfer pump Suction Isolation valve	500
333	Aux - Cooling To H2 Coolers Control Valve	500

334	H2 COOLER ISOLATION	500
335	H2 COOLER ISOLATION	500
336	DRAIN ISOLATION VALVE	32
337	DRAIN ISOLATION VALVE	500
338	H2 COOLER UPSTREAM ISOLATING VALVE	32
339	H2 COOLER DOWNSTREAM ISOLATING VALVE	500
340	DRAIN ISOLATION VALVE	32
341	DRAIN ISOLATION VALVE	500
342	H2 COOLER UPSTREAM ISOLATING VALVE	32
343	H2 COOLER DOWNSTREAM ISOLATING VALVE	500
344	DRAIN ISOLATION VALVE	32
345	DRAIN ISOLATION VALVE	500
346	H2 COOLER UPSTREAM ISOLATING VALVE	32
347	H2 COOLER DOWNSTREAM ISOLATING VALVE	300
348	DRAIN ISOLATION VALVE	400
349	DRAIN ISOLATION VALVE	500
350	AUX - COOLING TO H2 COOLERS CONTROL VALVE	32
351	CONTROL VALVE	500

Kendal IR Boiler Valves (100)	
QIP	DESCRCPTION
1	S/BLOWER S/HEAT SOURCE MASTER V/V. (100MM)
2	S/BLOWER S/HEAT SOURCE MASTER V/V. (50MM)
3	S/BLOWER W/BLOWER SECTION V/V. (80MM)
4	S/BLOWER HP STEAM SOURCE ISOL. V/V. (80MM)
5	S/BLOWER M/STEAM SOURCE MASTER V/V. (50MM)
6	L/H S/HTR.SP/WATER CONTROL V/V. (100MM)
7	L/H S/HTR.SP/WATER BLOCK V/V. (100MM)
8	L/H S/HTR.SP/WATER BLOCK V/V. (100MM)
9	L/H S/HTR.SP/WATER CONTROL V/V. (100MM)
10	L/H S/HTR.SP/WATER BLOCK V/V. (100MM)
11	L/H S/HTR.SP/WATER BLOCK V/V. (100MM)
12	L/H S/HTR.SP/WATER CONTROL V/V. (80MM)
13	L/H S/HTR.SP/WATER BLOCK V/V. (80MM)
14	L/H S/HTR.SP/WATER BLOCK V/V. (80MM)
15	L/H S/HTR.SP/WATER CONTROL V/V. (80MM)
16	L/H S/HTR.SP/WATER BLOCK V/V. (80MM)
17	L/H S/HTR.SP/WATER BLOCK V/V. (80MM)
18	R/H S/HTR.SP/WATER CONTROL V/V. (100MM)
19	R/H S/HTR.SP/WATER BLOCK V/V. (100MM)
20	R/H S/HTR.SP/WATER BLOCK V/V. (100MM)
21	R/H S/HTR.SP/WATER CONTROL V/V. (100MM)
22	R/H S/HTR.SP/WATER BLOCK V/V. (100MM)
23	R/H S/HTR.SP/WATER BLOCK V/V. (100MM)
24	R/H S/HTR.SP/WATER CONTROL V/V. (80MM)
25	R/H S/HTR.SP/WATER BLOCK V/V. (80MM)
26	R/H S/HTR.SP/WATER BLOCK V/V. (80MM)
27	R/H S/HTR.SP/WATER CONTROL V/V. (80MM)

28	R/H S/HTR.SP/WATER BLOCK V/V. (80MM)
29	R/H S/HTR.SP/WATER BLOCK V/V. (80MM)
30	SUPER HEATER SP/WATER BLOCK V/V. (150MM)
31	L/H RE/HTR.SP/WATER STN.CONTROL V/V. (80MM)
32	L/H RE/HTR.SP/WATER STN.BLOCK V/V. (100MM)
33	L/H RE/HTR.SP/WATER STN.BLOCK V/V. (100MM)
34	R/H RE/HTR.SP/WATER STN.CONTROL V/V. (80MM)
35	R/H RE/HTR.SP/WATER STN.BLOCK V/V. (100MM)
36	R/H RE/HTR.SP/WATER STN.BLOCK V/V. (100MM)
37	L/H RE/HTR.SP/WATER STN.CONTROL V/V. (80MM)
38	L/H RE/HTR.SP/WATER STN.BLOCK V/V. (100MM)
39	L/H RE/HTR.SP/WATER STN.BLOCK V/V. (100MM)
40	R/H RE/HTR.SP/WATER STN.CONTROL V/V. (80MM)
41	R/H RE/HTR.SP/WATER STN.BLOCK V/V. (100MM)
42	R/H RE/HTR.SP/WATER STN.BLOCK V/V. (100MM)
43	REHEAT SP/WATER SUPPLY BLOCK V/V. (150MM)
46	L/H FRONT HYDRASTEP VENT V/V(MID.V/V) (15MM)
47	L/H FRONT HYDRASTEP VENT V/V(TOP.V/V) (15MM)
48	L/H FRONT HYDRASTEP VENT V/V(BOTT.V/V) (15MM)
49	L/H FRONT HYDRASTEP DRAIN V/V(R/H V/V) (15MM)
50	L/H FRONT HYDRASTEP DRAIN V/V(L/H V/V) (15MM)
51	L/H FRONT HYDRASTEP W/ISOL.V/V(R/H V/V) (15MM)
52	L/H FRONT HYDRASTEP W/ISOL.V/V(L/H V/V) (20MM)
53	L/H FRONT HYDRASTEP S/ISOL.V/V(R/H V/V) (32MM)
54	L/H FRONT HYDRASTEP S/ISOL.V/V(L/H V/V) (20MM)
55	L/H BACK HYDRASTEP STEAM ISOL.(R/H V/V) (32MM)
56	L/H BACK HYDRASTEP WATER ISOL.(R/H V/V) (20MM)
57	L/H BACK HYDRASTEP WATER ISOL.(L/H V/V) (15MM)
58	L/H BACK HYDRASTEP STEAM ISOL.(L/H V/V) (15MM)
59	L/H BACK HYDRASTEP VENT V/V.(TOP V/V) (15MM)
60	L/H BACK HYDRASTEP VENT V/V.(MID. V/V) (15MM)
61	L/H BACK HYDRASTEP VENT V/V(BOTT.V/V) (15MM)
62	L/H BACK HYDRASTEP DRAIN V/V(R/H V/V) (20MM)
63	L/H BACK HYDRASTEP DRAIN V/V(L/H V/V) (32MM)
64	R/H FRONT HYDRASTEP VENT V/V.(TOP V/V) (32MM)
65	R/H FRONT HYDRASTEP VENT V/V. (BOTT. V/V) (32MM)
66	R/H FRONT HYDRASTEP VENT V/V.(MID.V/V) (32MM)
67	R/H FRONT HYDRASTEP DRAIN V/V(L/H V/V) (20MM)
68	R/H FRONT HYDRASTEP DRAIN V/V(R/H V/V) (20MM)
69	R/H FRONT HYDRASTEP WATER ISOL.V/V(L/H V/V) (20MM)
70	R/H FRONT HYDRASTEP WATER ISOL.V/V(R/H V/V) (20MM)
71	R/H FRONT HYDRASTEP STEAM ISOL.V/V(L/H V/V) (20MM)
72	R/H FRONT HYDRASTEP STEAM ISOL.V/V(R/H V/V) (20MM)
73	R/H BACK HYDRASTEP WATER ISOL.V/V(L/H V/V) (20MM)
74	R/H BACK HYDRASTEP WATER ISOL.V/V(R/H V/V) (20MM)
75	R/H BACK HYDRASTEP STEAM ISOL.V/V(L/H V/V) (20MM)
76	R/H BACK HYDRASTEP STEAM ISOL.V/V(R/H V/V) (20MM)
77	R/H BACK HYDRASTEP VENT ISOL.V/V(TOP V/V) (100MM)
78	R/H BACK HYDRASTEP VENT ISOL.V/V (BOTT. V/V) (100MM)
79	R/H BACK HYDRASTEP VENT ISOL.V/V(MID.V/V) (20MM)

80	R/H BACK HYDRATESTP DRAIN ISOL.V/V(L/H V/V) (20MM)
81	R/H BACK HYDRATESTP DRAIN ISOL.V/V(R/H V/V) (20MM)
82	S/HTR.ATEMP.2 ISOL.V/V. (R/H BOTT. V/V) (20MM)
83	S/HTR.ATEMP.2 ISOL.V/V.(L/H BOTT.V/V) (20MM)
84	S/HTR.ATEMP.2 ISOL.V/V. (R/H BOTT. V/V) (20MM)
85	STEAM DRUM CONTINUOUS B/DOWN(TOP V/V) (20MM)
86	BLOW DOWN HAND REG.V/V(BOTT.V/V) (20MM)
87	CONTINUUS BLOWDOWN VALVE (32MM)
88	FURNACE LOWER FRONT DRUM DRAIN V/V.NRV. (150MM)
89	STEAM DRUM PRESS.TRANSMITTER V/V (15MM)
90	S/BLOWER DRAIN LINE ISOL V/V (32MM)
91	S/BLOWER DRAIN LINE ISOL V/V (32MM)
92	R/H RE HTR SP V/V (100MM)
93	R/H COLD REHEAT DRAIN V/V (80MM)
94	R/H MAIN STEAM STRAINER VALVE (65MM)
95	BWCP.1 R/H DISCHARGE V/V (REPACK GLANDS)
96	BACKOASS LOWER HEADERS DRAIN REG V/V (150MM)
97	S/BLOWER DRAIN LINE ISOL V/V (32MM)
98	L/H COLD REHEAT DRAIN POT V/V (65MM)
99	MAIN STEAM STOP V/V (Repack glands only) (450MM)
100	MAIN STEAM STOP V/V (Repack glands only) (450MM)

KENDAL IR TURBINE GENERAL VALVES (153)		
QIP	Task Name	Size
1	Deaerator Warming Steam Control Valve	300
2	B F P A Discharge Isolating Valve	25
3	B F P A Discharge Isolating Valve Bypass Valve	25
4	B F P A Discharge Isolating Valve Bypass Valve	300
5	B F P B Discharge Isolating Valve	25
6	B F P B Discharge Isolating Valve Bypass Valve	25
7	B F P B Discharge Isolating Valve Bypass Valve	300
8	B F P C Discharge Isolating Valve	25
9	B F P C Discharge Isolating Valve Bypass Valve	25
10	B F P C Discharge Isolating Valve Bypass Valve	300
11	Feedwater Control Valve No 1	300
12	Feedwater Control Valve No1 Inlet Isolating Valve	300
13	Feedwater Control Valve No1 Outlet Isolating Valve	300
14	Feedwater Control Valve No 2	300
15	Feedwater Control Valve No2 Inlet Isolating Valve	300
16	Feedwater Control Valve No2 Outlet Isolating Valve	300
17	Feedwater Control Valve No 3	300
18	Feedwater Control Valve No3 Inlet Isolating Valve	300
19	Feedwater Control Valve No3 Outlet Isolating Valve	300
20	H P Heater 5,1 Feedwater Inlet Isolating valve	25
21	H P Heater 5,1 Feedwater Inlet Isolating valve Bypass Valve	25
22	H P Heater 5,1 Feedwater Inlet Isolating valve Bypass Valve	25
23	H P Heater 5,1 Feedwater outlet Isolating valve	300
24	H P Heater 5,1 Feedwater outlet Isolating valve Bypass Valve	25

25	H P Heater 5,1 Feedwater Saftey Valve No1 Inlet Isolating valve	25
26	H P Heater 5,1 Feedwater Saftey Valve No2 Inlet Isolating valve	25
27	H P Heater 5,2 Feedwater Saftey Valve No1 Inlet Isolating valve	25
28	H P Heater 5,2 Feedwater Saftey Valve No1 Inlet Isolating valve	300
29	H P Heater 6,2 Steam Side Pressure Gauge Isolating Valve	25
30	H P Heater 6,2 Vent To Recovered Water Isolating Valve	25
31	H P Heater 6,2 Vent To Recovered Water Isolating Valve	300
32	H P Heater 6,2 Vent To Recovered Water Isolating Valve	25
33	H P Heater 6,2 Vent To Recovered Water Isolating Valve	25
34	I p Attemperature Spraywater N R V	65
35	I p Attemperature Spraywater Isolating Valve	80
36	I p Attemperature Spraywater N R V	65
37	I p Attemperature Spraywater Isolating Valve	80
38	I p Attemperature Spraywater N R V	65
39	I p Attemperature Spraywater Isolating Valve	80
40	Cold Re-Heat Drains To Condenser Control Valve	250
41	Cold Re-Heat Drains To Recovered Water Isolating Valve	20
42	Cold Re-Heat Drains To Recovered Water Isolating Valve	20
43	Cold Re-Heat Drains To Condenser Control Valve	250
44	Cold Re-Heat Drains To Recovered Water Isolating Valve	20
45	Cold Re-Heat Drains To Recovered Water Isolating Valve	20
46	Aux Steam To D S T Control Valve	50
47	Aux-Steam to Deaerator Isolating Valve	350
48	Aux Steam H P Feed Pressure Reducing Valve	350
49	Aux Steam To Unit - Isolating Valve	32
50	Aux Steam To Unit - Isolating Valve	80
51	Aux Steam To Unit - Isolating Valve Bypass Valve	400
52	Aux Steam To D S T Control Valve	32
53	Aux Steam To D S T Control Valve	32
54	Aux Steam Pressure Reducing Control Valve	32
55	Aux-Steam to Deaerator Isolating Valve Bypass Valve	800
56	Aux-Steam to Deaerator Isolating Valve	350
57	CEP A Suction Isolation Valve	500
58	CEP B Suction Isolation Valve	500
59	Condensate A Extraction Pump Non-Return Valve	350
60	Condensate B Extraction Pump Non-Return Valve	350
61	Condenser Level Control Valve	250
62	CLC Bypass Valve	500
63	CLC Upstream isol v/v	500
64	CLC Upstream isol v/v	500
65	B F P - A - I P Spraywater N R V	125
66	B F P - A - I P Spraywater Isolating Valve	125
67	B F P - B - I P Spraywater N R V	125
68	B F P - B - I P Spraywater Isolating Valve	125
69	B F P - C - I P Spraywater N R V	150
70	B F P - C - I P Spraywater Isolating Valve	150

71	H P Heater 5,2 Distillate to DST Non Return Valve	20
72	H P Heater 5,2 Condensate To Deaerator Inlet Isolating valve	150
73	H P Heater 5,2 Condensate To Deaerator Inlet Isolating valve Bypass Valve	20
74	H P Heater 5,2 Condensate To Condenser Inlet Isolating valve	150
75	H P Heater 5,2 Condensate To Condenser Inlet Isolating valve Bypass Valve	20
76	H P Heater 5,1 Condensate to Deaerator Isolating Valve	15
77	H P Heater 5,1 Condensate to Deaerator Isolating Valve Bypass Valve	25
78	H P Heater 5,2 Condensate To Chemical Analyser Isolating valve	25
79	H P Heater 5,2 Condensate Drain Isolating valve	25
80	H P Heater 5,2 Condensate Drain Isolating valve	25
81	H P Heater 5,1 Condensate Drain To Recovered Water Isolating Valve	25
82	H P Heater 5,2 Condensate Drain Isolating valve	25
83	H P Heater 5,2 Condensate Drain Isolating valve	25
84	H P Heater 5,2 Condensate Drain Isolating valve	25
85	H P Heater 5,2 Condensate Drain Isolating valve	150
86	H P Heater 5,2 Condensate Drain Isolating valve	150
87	H P Heater 6,2 Condensate To Condenser Inlet Isolating valve	20
88	H P Heater 6,2 Condensate To Condenser Inlet Isolating valve Bypass Valve	150
89	H P Heater 6,2 Condensate To Condenser Inlet Isolating valve Bypass Valve	20
90	H P Heater 6,2 Condensate To Chemical Analyser Isolating valve	150
91	H P Heater 6,2 Condensate Drain Isolating valve	20
92	H P Heater 6,2 Condensate Drain Isolating valve	15
93	H P Heater 6,2 Condensate Drain Isolating valve	25
94	Condenser Make Up Control Valve	350
95	Condenser Return Control Valve	250
96	Standby condensate punp 1 leak-off valve	350
97	Standby condensate punp 2 leak-off valve	350
98	Demin water to CST Isolating Valve	150
99	Demin Water to CST ControlValve	150
100	Main Steam Strainer Drain Isolating Valve	25
101	Main Steam Strainer Drain Isolating Valve	25
102	Hot Re-Heat Strainer Drain Isolating Valve	300
103	Hot Re-Heat Strainer Drain Isolating Valve	25
104	Main Steam Strainer Drain Isolating Valve	25
105	Main Steam Strainer Drain Isolating Valve	25
106	Hot Re-Heat Strainer Drain Isolating Valve	25
107	Hot Re-Heat Strainer Drain Isolating Valve	25
108	RH Main Steam Warming Drain Valve	25
109	L P Bypass Drain Isolating Valve	25
110	L P Bypass Drain Isolating Valve	80
111	L P Bypass Drain Isolating Valve	25
112	L P Bypass Drain Isolating Valve	25
113	Cold Re-Heat N R V Drain Isolating Valve	800
114	Cold Re-Heat N R V Drain Isolating Valve	800
115	Main Steam Strainer Drain Isolating Valve	25
116	Main Steam Strainer Drain Isolating Valve	25

117	Main Steam Strainer Drain Isolating Valve	25
118	Main Steam Strainer Drain Isolating Valve	25
119	Main Steam Strainer Drain Isolating Valve	25
120	Main Steam Strainer Drain Isolating Valve	25
121	Main Steam Strainer Drain Isolating Valve	25
122	Main Steam Strainer Drain Isolating Valve	25
123	Drain At H P Governor Valve No1 Isolating Valve	32
124	Drain At H P Governor Valve No2 Isolating Valve	32
125	Drain At H P Governor Valve No3 Isolating Valve	32
126	Drain At H P Governor Valve No4 Isolating Valve	32
127	Drain Valve After H P Valve No 3 Isolating Valve	32
128	Drain Valve After H P Valve No 4 Isolating Valve	32
129	H P Turbine Drain Isolating Valve	150
130	Drain At I P valve No 1 Isolating Valve	150
131	Drain At I P valve No 2 Isolating Valve	65
132	Drain At I P valve No 3 Isolating Valve	65
133	Drain At I P valve No 4 Isolating Valve	65
134	Drain After I P Valves No 3 & 4 Isolating Valve	65
135	Drain Before Extraction 5 N R V Isolating Valve	80
136	Drain Before Extraction 4 N R V Isolating Valve	250
137	Drain Before Extraction 3 N R V Isolating Valve	20
138	Drain Before Extraction 2 N R V Isolating Valve	20
139	Drain Before C R H N R V Isolating Valve	250
140	Drain Before C R H N R V Isolating Valve	20
141	LH LP Crossover Drains Valve	65
142	RH LP Crossover Drains Valve	65
143	Drain At Gland Steam Header Isolating Valve	32
144	Drain At H P Governor Valve No1 Isolating Valve	150
145	Forced Cooling At H P Turbine Vent Isolating Valve	250
146	CW transfer pump Discharge Isolation valve	350
147	CW transfer pump Discharge NRV	800
148	CW transfer pump Suction Isolation valve	800
149	CW transfer pump Discharge Isolation valve	500
150	CW transfer pump Discharge NRV	500
151	CW transfer pump Suction Isolation valve	500
152	CEP A Strainer	500
153	CEP B Strainer	500

Kriel Power Station: Boiler Valves, Turbine Valves and Commissioning - strip, inspect, blue, box and stroke. Estimate scope below for a GO/MGO/IR (subject to change):

Kriel GO/MGO/IR Refurbish Turbine Valves (246)		
QIP	DESCRIPTION	VALVE SIZE (MM)
1	STATOR COOLING PUMP A SUCTION ISOL V/V 200NB DIAPHRAGM	200
2	STATOR COOLING PUMP B SUCTION ISOL V/V 200NB DIAPHRAGM	200
3	STATOR COOLING PUMP A DISCHARGE ISOL V/V 200NB DIAPHRAGM	200
4	STATOR COOLING PUMP B DISCHARGE ISOL V/V 200NB DIAPHRAGM	200
5	STATOR COOLER A INLET ISOL V/V 300NB DIAPHRAGM	300
6	STATOR COOLER A OUTLET ISOL V/V 300NB DIAPHRAGM	300
7	STATOR COOLER B INLET ISOL V/V 300NB DIAPHRAGM	300
8	STATOR COOLER B OUTLET ISOL V/V 300NB DIAPHRAGM	300
9	SECONDARY COOLING EFP A INLET ISOL V/V 100NB	100
10	SECONDARY COOLING EFP A OUTLET ISOL V/V 100NB	100
11	SECONDARY COOLING EFP B INLET ISOL V/V 100NB	100
12	SECONDARY COOLING EFP B OUTLET ISOL V/V 100NB	100
13	MTC DRAIN VALVE EAST INLET 350NB DIAPHRAM	350
14	MTC DRAIN VALVE EAST OUTLET 350NB DIAPHRAM	350
15	MTC DRAIN VALVE WEST INLET 350NB DIAPHRAM	350
16	MTC DRAIN VALVE WEST OUTLET 350NB DIAPHRAM	350
17	CW BOOSTER PUMP INLET VALVE	350
18	CW BOOSTER PUMP INLET VALVE	350
19	CW BOOSTER PUMP OUTLET VALVE 350NB	350
20	CW BOOSTER PUMP OUTLET VALVE 350NB	350
21	PRIMARY COOLING STRAINERS INLET VALVE B	300
22	PRIMARY COOLING STRAINERS OUTLET VALVE A	300
23	PRIMARY COOLING STRAINERS OUTLET VALVE A	200
24	PRIMARY COOLING STRAINERS INLET VALVE A	200
25	H2 CW TEMP CONTROL VALVE	200
26	PRIMARY COOLING HEAT EXCHANGER A INLET VALVE	200
27	PRIMARY COOLING HEAT EXCHANGER A OUTLET VALVE	200
28	PRIMARY COOLING HEAT EXCHANGER B INLET VALVE	200
29	PRIMARY COOLING HEAT EXCHANGER B OUTLET VALVE 250NB	250
30	PRIMARY COOLING PUMP A DISCHARGE NRV 250NB	250
31	PRIMARY COOLING PUMP A SUCTION VALVE 250NB	250
32	PRIMARY COOLING PUMP A DISCHARGE VALVE 250NB	250
33	PRIMARY COOLING PUMP B DISCHARGE NRV 250NB	250
34	PRIMARY COOLING PUMP B SUCTION VALVE 250NB	250
35	PRIMARY COOLING PUMP B DISCHARGE VALVE 250NB	250
36	PRIMARY COOLING PUMP C DISCHARGE NRV 250NB	250
37	PRIMARY COOLING PUMP C SUCTION VALVE 250NB	250

38	PRIMARY COOLING PUMP C DISCHARGE VALVE 250NB	250
39	SECONDARY COOLING PUMP A NRV 200NB	200
40	SECONDARY COOLING PUMP A INLET VALVE 200NB	200
41	SECONDARY COOLING PUMP A OUTLET VALVE 200NB	200
42	SECONDARY COOLING PUMP B NRV 200NB	200
43	SECONDARY COOLING PUMP B INLET VALVE 200NB	200
44	SECONDARY COOLING PUMP B OUTLET VALVE 200NB	200
45	SECONDARY COOLING PUMP C NRV 200NB	200
46	SECONDARY COOLING PUMP C INLET VALVE 200NB	200
47	SECONDARY COOLING PUMP C OUTLET VALVE 200NB	200
48	BFPT CW INLET ISOL VALVE A 500NB	500
49	BFPT CW INLET ISOL VALVE B 500NB	500
50	BFPT CONDENSER CW OUTLET ISOL VALVE 500NB	500
51	BFPT CONDENSER CW OUTLET ISOL VALVE 500NB	500
52	CW BOOSTER PUMP NRV 350NB	350
53	CW BOOSTER PUMP NRV 350NB	350
FEED PUMP AND CONDENSATE VALVES		
54	EFP "A" DISCH ISOL BYPASS V/V (25mm)	25
55	EFP "B" DISCH ISOL BYPASS V/V (25mm)	25
56	EFP A DISCH ISOL VALVE (250mm)	250
57	EFP A DISCH NRV (250mm)	250
58	EFP B DISCH ISOL V/V (250mm)	250
59	EFP B DISCH NRV (250mm)	250
60	SEALING WATER TO PUMPS CONTR V/V	25
61	SEALING WATER TO PUMPS CONTR V/V	25
FEED HEATING SYSTEM		
62	LP HEATER 4 EMERG DRN V/V TO MTC	100
63	DST WARM STM SUPPL VLV BEAM	100
64	DST WARM STM SUPL MOT IV, ASV90	100
65	LPH 4 IP B STM SUPL PA NRV	650
66	DST IP BLED STM SUPL PA NRV	450
67	IP BLED STM SUPL TO DA PA NRV	450
BFPT		
68	CRH STEAM TO BFPT ISOL BYPASS V/V	25
69	CRH STEAM TO BFPT ISOL VALVE	250
70	BYPASS TO BSV 1341 DRAIN ISOL V/V	250
71	CRH STEAM TO BFPT ISOL BYPASS V/V	50
72	CRH STEAM TO BFPT ISOL VALVE	250
73	CRH STM TO BFPT DRN CONTROL VALVE	25
74	CRH STEAM TO BFPT DRN CONTROL V/V	25
75	BFPT IP BLED STEAM SUPPLY NRV	400
76	BFPT IP BLED STEAM SUPPLY NRV	400
77	BLR F/PUMP TURB GLAND STEAM SUP CONTROL V/V	100
CONDENSATE SYSTEM		
78	QSAE STM SUPPLY CNTRL V/V (GLOBE 100MM)	100
79	QSAE STEAM SUPPLY ISOL V/V (GATE 125MM)	125

80	MTC AIR SUCTION ISOL VALVE A	250
81	MTC AIR SUCTION ISOL VALVE B	250
82	MAE AIR SUCT ISOL V/V A (GATE 250MM)	250
83	MAE AIR SUCT ISOL V/V B (GATE 250MM)	250
84	BFPT AIR EJECT AIR ISOL V/V (GATE 80MM)	80
85	BFPT AIR EJECT AIR ISOL V/V (GATE 80MM)	80
86	MAE AIR SUCT NRV A	250
87	MAE AIR SUCT NRV B	250
88	BFPT AIR EJECT AIR NRV A	100
89	BFPT AIR EJECT AIR NRV B	100
90	WAE TANK FLOAT VALVE	80
SAFETY VALVES		
91	DST A (300mm)	300
92	DST A (300mm)	300
93	DST A (200mm)	200
94	DST B (300mm)	300
95	DST B (300mm)	300
96	DST B (200mm)	200
97	LPH 1 SHELL SAFETY V/V	80
98	LPH 2 SHELL SAFETY V/V	80
99	LPH 3 CNDS SAFETY V/V	80
100	LPH 3 SHELL SAFETY V/V	80
101	LPH 4 SHELL SAFETY V/V	80
102	LPH 4 STM SAFETY V/V	80
103	HPH 6A STM SAFETY V/V	100
104	HPH 6B STM SAFETY V/V	100
105	HPH 6B STM SIDE V/V	100
106	HPH 7B STM SIDE V/V	100
107	HPH 6A STM SIDE V/V	100
108	HPH 7A STM SIDE V/V	100
109	HPH 7A STM SAFETY V/V	100
110	HPH 7B STM SAFETY V/V	100
FEED SYSTEM VALVES		
111	HP HTR A BNK FW 2-WAY OUTLET V/V	250
112	HP HTR B BNK FW 2-WAY OUTLET V/V	250
113	HP HTR A BNK FW 3-WAY INL V/V	250
114	HP HTR B BNK FW 3-WAY INL V/V	250
115	HP HTR A BNK PILOT A ISOLATING V/V	50
116	HP HTR B BNK PILOT A ISOLATING V/V	50
117	HP HTR A BNK PILOT B ISOLATING V/V	50
118	HP HTR B BNK PILOT B ISOLATING V/V	50
119	HP HTR A BNK PILOT V/V A	25
120	HP HTR B BNK PILOT V/V A	25
121	HP HTR A BNK PILOT V/V B	25
122	HP HTR B BNK PILOT V/V B	25
123	HP HTR A BNK SAFETY RELIEF FW V/V A	80

124	HP HTR B BNK SAFETY RELIEF FW V/V A	80
125	HP HTR A BNK FW INL DRN V/V	25
126	HP HTR A BNK FW INTERCONN PIPE DRN V/V	25
127	HP HTR A BNK FW INTERCONN PIPE DRN V/V	25
128	HP HTR B BNK FW INTERCONN PIPE DRN V/V	25
129	HP HTR A BNK FW OUT DRN V/V	25
130	HP HTR B BNK FW OUT DRN V/V	25
131	HP HTR A BNK FW OUT ISOL. VENT V/V	100
132	HP HTR B BNK FW OUT ISOL. VENT V/V	100
133	HP HTR A BNK FW FILLING LINE V/V	25
134	HP HTR B BNK FW FILLING LINE V/V	25
135	HP HTR A BNK FW FILLING LINE ISOL. V/V	25
136	HP HTR B BNK FW FILLING LINE ISOL. V/V	25
137	HP HTR A BNK FW BYPASS DRN V/V 1	25
138	HP HTR A BNK FW BYPASS DRN V/V 3	25
139	HP HTR B BNK FW BYPASS DRN V/V 1	25
140	HP HTR B BNK FW BYPASS DRN V/V 3	25
141	HP HTR A BNK FW BYPASS DRN V/V 4	25
142	HP HTR B BNK FW BYPASS DRN V/V 4	25
143	HP HTR A BNK FW PRESSURE RELIEF ISOL V/V	25
144	HP HTR B BNK FW PRESSURE RELIEF ISOL V/V	25
145	HP HTR 6B HWL CONTROL V/V	150
146	HP HTR 6B HWL CONTROL ISOL. V/V	150
147	HP HTR 7B HWL CONTROL V/V	150
148	HP HTR 7B HWL CONTROL ISOL. V/V	150
149	HP HTR 7A HWL CONTROL V/V	150
150	HP HTR 7A HWL CONTROL ISOL. V/V	150
151	HP HTR 6A HWL CONTROL V/V	150
152	HP HTR 6A HWL CONTROL ISOL. V/V	150
153	HP HTR 6A TO DA NON RETURN V/V	300
154	HP HTR 6B TO DA NON RETURN V/V	300
155	HP HTR 6B NWL CONTROL V/V	150
156	HP HTR 6B NWL CONTROL ISOL. V/V	150
157	HP HTR 6A NWL CONTROL ISOL. V/V	150
158	HP HTR 6A NWL CONTROL V/V	150
159	HP HTR 7B NWL CONTROL V/V	150
160	HP HTR 7B NWL CONTROL ISOL. V/V	150
161	HP HTR 7A NWL CONTROL V/V	150
162	HP HTR 7A NWL CONTROL ISOL. V/V	150
163	HP HTR 6A/7A TO COND CONDENSATE LINE DRN 1	25
164	HP HTR 6B/7B TO COND CONDENSATE LINE DRN 1	25
165	HP HTR 6B TO DA CONDENSATE LINE DRN 1	25
166	HP HTR 6A TO DA CONDENSATE LINE DRN 1	25
167	HP HEATER 7A SHELL DRN	25
168	HP HEATER 7B SHELL DRN	25
169	HP HEATER 6A SHELL DRN	25

170	HP HEATER 6B SHELL DRN	25
171	HP HEATER 7A SHELL VENT	25
172	HP HEATER 7B SHELL VENT	25
173	HP HEATER 6A SHELL VENT	25
174	HP HEATER 6B SHELL VENT	25
175	HP HTR 7A MAG LEVEL IND ISOL. V/V (BOTTOM)	80
176	HP HTR 7A MAG LEVEL IND ISOL. V/V (TOP)	80
177	HP HTR 7B MAG LEVEL IND ISOL. V/V (BOTTOM)	80
178	HP HTR 7B MAG LEVEL IND ISOL. V/V (TOP)	80
179	HP HTR 6A MAG LEVEL IND ISOL. V/V (BOTTOM)	80
180	HP HTR 6A MAG LEVEL IND ISOL. V/V (TOP)	80
181	HP HTR 6B MAG LEVEL IND ISOL. V/V (BOTTOM)	80
182	HP HTR 6B MAG LEVEL IND ISOL. V/V (TOP)	80
183	HP HTR 6A HWL LINE DRN V/V	25
184	HP HTR 6B HWL LINE DRN V/V	25
185	HP HTR 6A DESUPERHEATER DRN V/V	50
186	HP HTR 6B DESUPERHEATER DRN V/V	50
187	HP HTR 7A DESUPERHEATER DRN V/V	50
188	HP HTR 7B DESUPERHEATER DRN V/V	50
189	HP HTR 6A MAG LEVEL IND DRN V/V	25
190	HP HTR 6B MAG LEVEL IND DRN V/V	25
191	HP HTR 7A MAG LEVEL IND DRN V/V	25
192	HP HTR 7B MAG LEVEL IND DRN V/V	25
193	HP HEATER 7A UPPER STANDPIPE CONNECTION	80
194	HP HEATER 7B UPPER STANDPIPE CONNECTION	80
195	HP HTR 7A LOWER STANDPIPE CONNECTION	80
196	HP HTR 7B LOWER STANDPIPE CONNECTION	80
197	HP HEATER 6A UPPER STANDPIPE CONNECTION	80
198	HP HEATER 6B UPPER STANDPIPE CONNECTION	80
199	HP HTR 6A LOWER STANDPIPE CONNECTION	80
200	HP HTR 6B LOWER STANDPIPE CONNECTION	80
201	HP HTR 7 DISTURBANCE DRAIN VALVE	25
202	HP HTR 6 DISTURBANCE DRAIN VALVE	25
203	DA VENT ISOL VALVE	25
204	DA VENT ISOL VALVE	25
205	DA VENT NRV	25
206	DA VENT NRV	25
207	DST A&B WARMING STM CONTROL V/V	100
208	CRH TO DST A&B ISOL V/V	400
209	CRH TO DST A&B ISOL V/V	400
210	DST A&B WARMING STEAM NRV	400
211	DST A&B WARMING STEAM OUTL ISOL V/V	450
212	DST A&B WARMING STM OUTL BYPASS V/V	25
213	BLED STEAM TO DA ISOL BYPASS VALVE	25
214	BLED STEAM TO DA ISOL VALVE	450
215	DRAIN FROM BLED STM LINE 5 ISOL VALVE	25

216	CRH STEAM TO DA ISOL BYPASS VALVE	25
217	CRH STEAM TO DA ISOL VALVE	450
218	DRAIN FROM BLED STM LINE 5 ISOL VALVE	25
219	CRH STEAM TO DA NRV	450
220	STEAM TO DA ISOL BYPASS VALVE	25
221	CRH STEAM TO DA ISOL VALVE	450
222	DRAIN FROM LINE 1445 TP ADV ISOL VALVE	25
223	STEAM TRAP	25
224	DRAIN FROM LINE 1445 TO ADV ISOL VALVE	25
225	BLED STM LINE 6 DRN BEFORE HTR 6 V/V	25
226	HPH 6 A B/STEAM ISOL V/V	250
227	HPH 6 B B/STEAM ISOL V/V	250
228	BYPASS TO BSV 1341	25
229	BYPASS TO BSV 1341 DRAIN ISOL VALVE (warming v/v)	25
230	HPH 7 B/STEAM NRV	300
231	HPH 7 A B/STEAM ISOL V/V	250
232	HPH 7 B B/STEAM ISOL V/V	250
233	HPH 6 B/STEAM PA NRV	250
234	HPH 6 B/STEAM PA NRV	250
235	SFP SUCT LINE VENT ISOL V/V	25
236	EFP SUCT LINE VENT ISOL V/V	25
237	EFP SUCT LINE VENT ISOL V/V	25
238	IN FROM COND LINE TO DA	25
239	DRAIN FROM COND LINE TO DA	25
240	SFP SUCTION ISOLATING VALVE	300
241	DA DRAIN ISOL VALVE	250
242	DA DRAIN ISOL VALVE	250
243	EFP A SUCT ISOL VALVE	300
244	EFP B SUCT ISOL VALVE	300
245	DA FILLING VALVE	250
246	DA DOME INLET V/V (2 OFF)	200

Kriel GO/MGO/IR Boiler Valves (118)		
QIP	Description	VALVE SIZE (MM)
54ML REHEATER SPRAYWATER CONTROL VALVE		
1	CRH att 1.1 spray water control valve	40
2	CRH att 1.2 spray water control valve	40
3	CRH att 1.3 spray water control valve	40
4	CRH att 1.4 spray water control valve	40
5	CRH Spraywater Main Isol valve	140
6	CRH att 1.1 isol valve	50
7	CRH att 1.2 isol valve	50
8	CRH att 1.3 isol valve	50
9	CRH att 1.4 isol valve	50

45ML SUPERHEATER SPRAYWATER VALVES		
10	SH att 2.1 spray water control valve	50
11	SH att 2.2 spray water control valve	50
12	SH att 2.3 spray water control valve	50
13	SH att 2.4 spray water control valve	50
14	SH att 2.1 spray water stop valves	50
15	SH att 2.2 spray water stop valves	50
16	SH att 2.3 spray water stop valves	50
17	SH att 2.4 spray water stop valves	50
18	SH att 3.1 spray water stop valves	50
19	SH att 3.2 spray water stop valves	50
20	SH att 3.3 spray water stop valves	50
21	SH att 3.4 spray water stop valves	50
22	SH att 3.1 spray water control valve	50
23	SH att 3.2 spray water control valve	50
24	SH att 3.3 spray water control valve	50
25	SH att 3.4 spray water control valve	50
26	SH Spraywater Main Isol valve	100
2ML & 31ML BOILER DRAIN VALVES		
27	EVAP SCREW DRAIN V/V LH BOTTOM	50
28	EVAP SCREW DRAIN V/V RH BOTTOM	50
29	EVAP SCREW DRAIN V/V RH TOP	50
30	BOILER MASTER DRAIN V/V	50
31	DISTRIBUTION HEADER DRAIN V/V 1	50
32	DISTRIBUTION HEADER DRAIN V/V 2	50
33	DIVING WALL DRAIN V/V FRONT BOTTOM	25
34	DIVING WALL DRAIN V/V FRONT TOP	25
35	DIVING WALL DRAIN V/V REAR BOTTOM	25
36	DIVING WALL DRAIN V/V REAR TOP	25
37	ATT 1 OUTLET ISOL V/V LH BOTTOM	25
38	ATT 1 OUTLET ISOL V/V LH TOP	25
39	EVAP SCREW DRAIN V/V RH BOTTOM	25
40	EVAP SCREW DRAIN V/V RH TOP	25
41	BOILER MASTER DRAIN V/V	50
42	DISTRIBUTION HEADER DRAIN V/V 1	25
43	DISTRIBUTION HEADER DRAIN V/V 2	25
44	DIVING WALL DRAIN V/V FRONT BOTTOM	25
45	DIVING WALL DRAIN V/V FRONT TOP	25
46	DIVING WALL DRAIN V/V REAR BOTTOM	25
47	DIVING WALL DRAIN V/V REAR TOP	25
48	ATT 1 OUTLET ISOL DRAIN V/V LH BOTTOM	25
49	ATT 1 OUTLET ISOL DRAIN V/V LH TOP	25
50	SH 1.1 OUTLET DRAIN A TOP ISOL V/V	25
51	SH 1.2 OUTLET DRAIN B TOP ISOL V/V	25
52	SH 2.1 OUTLET DRAIN A TOP ISOL V/V	25
53	SH 2.2 OUTLET DRAIN B TOP ISOL V/V	25

54	SH 2.2 OUTLET DRAIN B BOTTOM ISOL V/V	25
55	SH 2.3 OUTLET DRAIN C TOP ISOL V/V	25
56	SH 2.4 OUTLET DRAIN D TOP ISOL V/V	25
57	SH 3.1 OUTLET DRAIN A TOP ISOL V/V	25
58	SH 3.2 OUTLET DRAIN B TOP ISOL V/V	25
59	SH 3.3 OUTLET DRAIN B TOP ISOL V/V	25
60	SH 3.4 OUTLET DRAIN B TOP ISOL V/V	25
54ML SOOTBLOWER STATION		
61	Sootblower motorised isolating valve	50
62	Sootblower motorised isolating valve	50
63	Sootblower motorised isolating valve	50
64	Sootblower motorised isolating valve	50
65	Sootblower main steam isol valve	50
66	Sootblower main steam Reg valve	50
67	Sootblower main steam hand isolating valve	50
68	Sootblower station safety valve	50
69	Sootblower main steam Control valve	50
70	Sootblower section 3 valve	50
71	Sootblower section 3 isolating valve	50
72	Sootblower section 4 valve	50
73	Sootblower section 4 isolating valve	50
7ML & 22ML CIRCULATING PUMP AND COLLECTING VESSEL SYSTEM		
74	Boiler Circ pump discharge pressure isolating valve	25
75	Coll vessel 33 % drain stop valve	150
76	Coll vessel 33 % drain bypass valve	25
77	Coll vessel 66% drain stop valve	150
78	Coll vessel 66 % drain bypass valve	25
79	Circ pump suction stop valve	250
80	Circ pump discharge stop valve	250
81	Circ pump Non return valve	250
82	Circ pump leak-off isol valve	150
0ML TURBINE LEG DRAINS		
83	Main steam leg drain A	50
84	Main steam leg drain B	50
85	Main steam leg drain C	50
86	Main steam leg drain D	50
87	HRH leg drain A	50
88	HRH leg drain B	50
89	HRH leg drain C	50
90	HRH leg drain D	50
91	MS leg drain isol valve A	50
92	MS leg drain isol valve B	50
93	MS leg drain isol valve C	50
94	MS leg drain isol valve D	50
95	HRH leg drain stop valve A	50
96	HRH leg drain stop valve B	50

97	HRH leg drain stop valve C	50
98	HRH leg drain stop valve D	50
99	MS Non Return Valve A	50
100	MS Non Return Valve B	50
101	MS Non Return Valve C	50
102	MS Non Return Valve D	50
103	HRH Non Return Valve A	50
104	HRH Non Return Valve B	50
105	HRH Non Return Valve C	50
106	HRH Non Return Valve D	50
107	CR leg drain stop valve A	50
108	CR leg drain stop valve B	50
109	HRH Non Return Valve A	50
110	HRH Non Return Valve B	50
31ML MAIN STEAM STOP VALVES		
111	Main steam stop valve 1	300
112	Main steam stop valve 2	300
113	Main steam stop valve 3	300
114	Main steam stop valve 4	300
115	Main steam stop valve 1 bypass valve	25
116	Main steam stop valve 2 bypass valve	25
117	Main steam stop valve 3 bypass valve	25
118	Main steam stop valve 4 bypass valve	25

Kusile Power Station: Boiler Valves, Turbine Valves and Commissioning - strip, inspect, blue, box and stroke. Estimate scope below for a GO/MGO/IR (subject to change):

KUSILE IR TURBINE VALVES (119)		
QIP	DESCRIPTION	Size
FEED WATER AND HP HEATING		
1	COLD REHEAT LINE POWER ASSISTED CHECK VALVE 11	24"
2	COLD REHEAT LINE POWER ASSISTED CHECK VALVE 12	24"
3	STEAM TURBINE EXTRACTION 4 CONTROL VALVE (18")	18"
4	COLD REHEAT STEAM TO FWT PRESSURE CONTROL VALVE 1	450mm
5	COLD REHEAT STEAM TO FWT PRESS CONTROL VALVE 2	450mm
6	HIGH PRESSURE HEATERS 5/6A BYPASS PILOT VALVE (DN25)	DN25
7	HIGH PRESSURE HEATERS 5/6B BYPASS PILOT VALVE (DN25)	DN25
8	HIGH PRESSURE HEATERS 5/6A BYPASS DUMP VALVE (DN25)	DN25
9	HIGH PRESSURE HEATERS 5/6B BYPASS DUMP VALVE (DN25)	DN25
10	HIGH PRESSURE HEARTER 5A WATERSIDE PRESSURE RELIEF VALVE 1	2"
11	HIGH PRESSURE HEARTER 5A WATERSIDE PRESSURE RELIEF VALVE 2	2"
12	HIGH PRESSURE HEARTER 5A PRESSURE RELIEF VALVE	6"
13	HIGH PRESSURE HEARTER 5B PRESSURE RELIEF VALVE	6"
14	HIGH PRESSURE HEARTER 6A PRESSURE RELIEF VALVE	6"

15	HIGH PRESSURE HEARTER 6B PRESSURE RELIEF VALVE	6"
16	HIGH PRESSURE HEARTER 5A NORMAL DRAIN CONTROL VALVE	8"
17	HIGH PRESSURE HEARTER 5A EMERGENCY DRAIN CONTROL VALVE	8"
18	HIGH PRESSURE HEARTER 6B NORMAL DRAIN CONTROL VALVE	8"
19	HIGH PRESSURE HEARTER 6A EMERGENCY DRAIN CONTROL VALVE	8"
22	BLED STEAM EXTRACTION 5 EXTRACTION 5 DRAIN VALVE UPSTREAM POWER ASSISTED CHKV	25mm
23	BLED STEAM EXTRACTION 5 EXTRACTION 5 POWER ASSISTED CHECK VALVE TO HP PREHEATER	400mm
24	BLED STEAM EXTRACTION 5 EXTRACTION 5 POWER ASSISTED CHECK VALVE TO HP PREHEATER	400mm
25	BLED STEAM EXTRACTION 1 DRAIN VALVE	25mm
26	BLED STEAM EXTRACTION 4 DRAIN VALVE	25mm
27	BLED STEAM EXTRACTION 4 DRAIN VALVE	25mm
28	BLED STEAM EXTRACTION 4 POWER ASSISTED CHECK VALVE TO FEEDWATER TANK	450mm
29	BLED STEAM EXTRACTION 4 POWER ASSISTED CHECK VALVE TO FEEDWATER TANK	450mm
30	TURBINE CENTRELINE DRAINS (MAL) DRAIN SYSTEM HPT CASING DRAIN VALVE	25mm
31	TURBINE CENTRELINE DRAINS (MAL) DRAIN SYSTEM HPT CASING DRAIN VALVE	25mm
32	TURBINE CENTRELINE DRAINS (MAL) DRAIN SYSTEM IPT CASING DRAIN VALVE	25mm
33	TURBINE CENTRELINE DRAINS (MAL) DRAIN SYSTEM IPT CASING DRAIN VALVE	25mm
34	TURBINE CENTRELINE DRAINS (MAL) DRAIN SYSTEM DRAIN VALVE DOWNSTREAM MAIN STOP VALVE	25mm
35	TURBINE CENTRELINE DRAINS (MAL) DRAIN SYSTEM DRAIN VALVE DOWNSTREAM MAIN STOP VALVE	25mm
36	TURBINE CENTRELINE DRAINS (MAL) DRAIN SYSTEM DRAIN VALVE DOWNSTREAM ISV	25mm
37	BLED STEAM EXTRACTION 5 EXTRACTION 5 ISOLATING VALVE UPSTREAM DRAIN VALVE	50mm
38	BLED STEAM EXTRACTION 5 EXTRACTION 5 ISOLATING VALVE UPSTREAM DRAIN VALVE	50mm
39	BLED STEAM EXTRACTION 5 EXTRACTION 5 ISOLATING VALVE UPSTREAM DRAIN VALVE	50mm
40	BLED STEAM EXTRACTION 2 ISOLATING VALVE FOR DRAIN STEAM TRAP	25mm
41	BLED STEAM EXTRACTION 2 ISOLATING VALVE FOR DRAIN STEAM TRAP	25mm
42	BLED STEAM EXTRACTION 2 ISOLATING VALVE FOR DRAIN STEAM TRAP	25mm
43	BLED STEAM EXTRACTION 2 ISOLATING VALVE FOR DRAIN STEAM TRAP	25mm
44	BLED STEAM EXTRACTION 2 ISOLATING VALVE FOR DRAIN STEAM TRAP	25mm
45	BLED STEAM EXTRACTION 2 ISOLATING VALVE FOR DRAIN STEAM TRAP	25mm
46	BLED STEAM EXTRACTION 2 ISOLATING VALVE FOR DRAIN STEAM TRAP	25mm
47	BLED STEAM EXTRACTION 2 ISOLATING VALVE FOR DRAIN STEAM TRAP	25mm
48	BLED STEAM EXTRACTION 2 ISOLATING VALVE FOR DRAIN STEAM TRAP	25mm

49	BLED STEAM EXTRACTION 2 ISOLATING VALVE FOR DRAIN STEAM TRAP	25mm
50	BLED STEAM EXTRACTION 3 ISOLATING VALVE UPSTREAM DRAIN VALVE	2"
51	BLED STEAM EXTRACTION 3 ISOLATING VALVE UPSTREAM DRAIN VALVE	2"
52	BLED STEAM EXTRACTION 3 ISOLATING VALVE FOR DRAIN STEAM TRAP	25mm
53	BLED STEAM EXTRACTION 3 ISOLATING VALVE FOR DRAIN STEAM TRAP	25mm
54	BLED STEAM EXTRACTION 3 ISOLATING VALVE FOR DRAIN STEAM TRAP	25mm
55	BLED STEAM EXTRACTION 3 ISOLATING VALVE FOR DRAIN STEAM TRAP	25mm
56	BLED STEAM EXTRACTION 3 ISOLATING VALVE FOR DRAIN STEAM TRAP	25mm
57	BLED STEAM EXTRACTION 3 ISOLATING VALVE FOR DRAIN STEAM TRAP	25mm
58	BLED STEAM EXTRACTION 3 ISOLATING VALVE FOR DRAIN STEAM TRAP	25mm
59	BLED STEAM EXTRACTION 3 ISOLATING VALVE FOR DRAIN STEAM TRAP	25mm
60	BLED STEAM EXTRACTION 3 ISOLATING VALVE FOR DRAIN STEAM TRAP	25mm
61	BLED STEAM EXTRACTION 3 ISOLATING VALVE FOR DRAIN STEAM TRAP	25mm
62	BLED STEAM EXTRACTION 4 ISOLATING VALVE UPSTREAM OF DRAIN VALVE	2"
63	BLED STEAM EXTRACTION 4 ISOLATING VALVE UPSTREAM OF DRAIN VALVE	2"
64	BLED STEAM EXTRACTION 4 DRAIN ISOLATING VALVE FOR STEAM TRAP	25mm
65	BLED STEAM EXTRACTION 4 DRAIN ISOLATING VALVE FOR STEAM TRAP	25mm
66	BLED STEAM EXTRACTION 4 DRAIN ISOLATING VALVE FOR STEAM TRAP	25mm
67	BLED STEAM EXTRACTION 4 DRAIN ISOLATING VALVE FOR STEAM TRAP	25mm
68	BLED STEAM EXTRACTION 4 DRAIN ISOLATING VALVE FOR STEAM TRAP	25mm
69	BLED STEAM EXTRACTION 4 DRAIN ISOLATING VALVE FOR STEAM TRAP	25mm
70	BLED STEAM EXTRACTION 4 DRAIN ISOLATING VALVE FOR STEAM TRAP	25mm
71	BLED STEAM EXTRACTION 4 DRAIN ISOLATING VALVE FOR STEAM TRAP	25mm
72	BLED STEAM EXTRACTION 4 DRAIN ISOLATING VALVE FOR STEAM TRAP	25mm
73	BLED STEAM EXTRACTION 4 DRAIN ISOLATING VALVE FOR STEAM TRAP	25mm
74	HIGH PRESSURE TURBINE LIVE STEAM VALVES DISCHARGE AMPLIFIER AT MAIN STOP VALVE	25mm
75	HIGH PRESSURE TURBINE LIVE STEAM VALVES DISCHARGE AMPLIFIER AT MAIN STOP VALVE	25mm
76	HIGH PRESSURE TURBINE LIVE STEAM VALVES DISCHARGE AMPLIFIER AT MAIN STOP VALVE	25mm
77	HIGH PRESSURE TURBINE LIVE STEAM VALVES DISCHARGE AMPLIFIER AT MAIN STOP VALVE	25mm
78	TURBINE GLAND STEAM SEALING SYSTEM (MAW) GLAND STEAM SUCTION SYSTEM ROOT VALVE PRESSURE	25mm
79	TURBINE GLAND STEAM SEALING SYSTEM (MAW) GLAND STEAM SUCTION SYSTEM THROTTLE VALVE	25mm
80	TURBINE GLAND STEAM SEALING SYSTEM (MAW) GLAND STEAM SUCTION SYSTEM THROTTLE VALVE	25mm
81	TURBINE GLAND STEAM SEALING SYSTEM (MAW) GS SUCTION SYSTEM DRAIN VALVE TO GLAND STEAM CONDENSER	25mm
82	TURBINE GLAND STEAM SEALING SYSTEM (MAW) GS SUCTION SYSTEM DRAIN VALVE TO GLAND STEAM CONDENSER	25mm
83	TURBINE GLAND STEAM SEALING SYSTEM (MAW) GS SUC SYS LEVEL CONTROL VALVE AT GLAND STEAM CONDENSER	25mm
84	TURBINE GLAND STEAM SEALING SYSTEM (MAW) GS SUCTION SYSTEM CHECK VALVE DOWNSTREAM EXHAUST AIR FAN	2"

85	TURBINE GLAND STEAM SEALING SYSTEM (MAW) GS SUCTION SYSTEM CHECK VALVE DOWNSTREAM EXHAUST AIR FAN	250mm
86	TURBINE GLAND STEAM SEALING SYSTEM (MAW) GLAND STEAM SUCTION SYSTEM CHECK VALVE	250mm
87	TURBINE GLAND STEAM SEALING SYSTEM (MAW) GLAND STEAM SUCTION SYSTEM CHECK VALVE	2"
88	TURBINE GLAND STEAM SEALING SYSTEM (MAW) GLAND STEAM RELIEF SYSTEM ROOT VALVE FLOW MEASUREMENT	2"
89	TURBINE GLAND STEAM SEALING SYSTEM (MAW) GLAND STEAM RELIEF SYSTEM ROOT VALVE FLOW MEASUREMENT	50mm
90	IP-LP BYPASS SYSTEM (MAN) U1 LOW PRESS BYP 11 DESUPERHEATED STEAM PTX ISOL VLV	250mm
91	IP-LP BYPASS SYSTEM (MAN) U1 LOW PRESS BYP 11 DESUPERHEATED STEAM PTX ISOL VLV	250mm
92	IP-LP BYPASS SYSTEM (MAN) U1 LOW PRESS BYP 11 DESUPERHEATED STEAM PTX ISOL VLV	2"
93	IP-LP BYPASS SYSTEM (MAN) U1 LOW PRESS BYP 11 DESUPERHEATED STEAM PTX ISOL VLV	20mm
94	IP-LP BYPASS SYSTEM (MAN) U1 LOW PRESS BYP 11 DESUPERHEATED STEAM PTP ISOL VLV	25mm
95	IP-LP BYPASS SYSTEM (MAN) U1 LOW PRESS BYP 11 DESUPERHEATED STEAM PTP ISOL VLV	25mm
96	IP-LP BYPASS SYSTEM (MAN) U1 LOW PRESS BYP 11 DESUPERHEATING WATER PTX ISOL VLV	25mm
97	IP-LP BYPASS SYSTEM (MAN) U1 LOW PRESS BYP 11 DESUPERHEATING WATER PTX ISOL VLV	25mm
98	IP-LP BYPASS SYSTEM (MAN) U1 LOW PRESS BYP 11 DESUPERHEATING WATER PTX ISOL VLV	25mm
99	IP-LP BYPASS SYSTEM (MAN) U1 LOW PRESS BYP 11 DESUPERHEATING WATER PTX ISOL VLV	25mm
100	IP-LP BYPASS SYSTEM (MAN) U1 LOW PRESS BYP 11 DESUPERHEATING WATER PTP ISOL VLV 1	25mm
101	IP-LP BYPASS SYSTEM (MAN) U1 LOW PRESS BYP 11 DESUPERHEATING WATER PTP ISOL VLV 1	25mm
102	IP-LP BYPASS SYSTEM (MAN) U1 LOW PRESS BYP 11 DESUPERHEATING WATER PTP ISOL VLV 1	20mm
103	IP-LP BYPASS SYSTEM (MAN) U1 LOW PRESS BYP 11 DESUPERHEATING WATER PTP ISOL VLV 1	20mm
112	COLD REHEAT LINE PRESSURE REDUCING VALVE	DN50
113	COLD REHEAT LINE PRESSURE REDUCING VALVE	DN50
114	BLED STEAM EXTRACTION 5 EXTRACTION 5 DRAIN VALVE UPSTREAM POWER ASSISTED CHKV	DN50
115	BLED STEAM EXTRACTION 5 EXTRACTION 5 DRAIN VALVE UPSTREAM POWER ASSISTED CHKV	DN50
116	BLED STEAM EXTRACTION 2 PRESSURE REDUCING VALVE	DN50
117	TURBINE GLAND STEAM SEALING SYSTEM (MAW) GLAND STEAM ADMISSION SYSTEM PRESSURE REDUCING VALVE	DN50

118	BLED STEAM EXTRACTION 3 PRESSURE REDUCING VALVE	DN50
119	TURBINE GLAND STEAM SEALING SYSTEM (MAW) GS SUC SYS PRESSURE SAFETY VALVE ON GLAND STEAM CONDENSER	DN50

Kusile IR Boiler Valves (115)		
QIP	DESCRIPTION	SIZE
	RECIRC VALVE	
1	COLLECTING VESSEL SV VE STARTUP VES IV (DN 25)	DN25
2	CONTROL VALVE CIRCULATION SYSTEM (DN 300)	DN300
3	CIRC/P DISCH SAMP & ANAL IV 1 (DN 50)	DN50
4	STOP VALVE DISCHARGE FROM START-UP VESSEL (DN 350)	DN350
5	CONTROL VALVE DISCHARGE FROM START-UP VESSEL	DN50
6	CIRCULATING SYSTEM DRAIN STOP VALVE	DN50
7	STOP VALVE DISCHARGE FROM START-UP VESSEL (DN 350)	DN350
8	DRAIN STOP VALVE HP STEAM LINE 1	DN50
9	DRAIN STOP VALVE HOT REHEAT STEAM LINE 1	DN50
10	DRAIN STOP VALVE HOT REHEAT STEAM LINE 2	DN50
11	HOT REHEAT LINE 1 VENTILATION VALVE 2	DN50
12	HOT REHEAT LINE 1 VENTILATION VALVE 1	DN50
13	TURB RH SD ATMOS DRNVES MTR CV	DN80
14	TURB LH SD ATMOS DRNVES MTR CV	DN80
	SUPERHEATER VALVES	DN50
15	STOP VALVE DRAIN SH1 OUTLET (DN 25)	DN25
16	STOP VALVE DRAIN SH1 OUTLET (DN 25)	DN25
17	ANGLE SHUT-OFF VALVE DRAIN SH2 OUTLET (DN 50)	DN50
18	ANGLE SHUT-OFF VALVE DRAIN SH3 INLET (DN 50)	DN50
19	ANGLE SHUT-OFF VALVE DRAIN SH3 INLET (DN 50)	DN50
20	STOP VALVE DRAIN SH1.1 INLET (DN 25)	DN25
21	STOP VALVE VENT OUTER SUPPORT TUBES (DN 25)	DN25
22	STOP VALVE VENT OUTER SUPPORT TUBES (DN 25)	DN25
23	STOP VALVE VENT OUTER SUPPORT TUBES (DN 25)	DN25
24	STOP VALVE VENT OUTER SUPPORT TUBES (DN 25)	DN25
25	STOP VALVE DRAIN SH2 OUTLET (DN 50)	DN50
	REHEATER VALVES	
26	ANGLE SHUT-OFF VALVE DRAIN RH2 INLET	DN50
27	RH 1 OUTLET DRAIN ANGLE SHUT-OFF VALVE	DN50
28	RH 1 OUTLET DRAIN ANGLE SHUT-OFF VALVE	DN50
29	RH 2 INLET DRAIN ANGLE SHUT-OFF VALVE	DN50
30	RH 2 INLET DRAIN ANGLE SHUT-OFF VALVE	DN50
31	RH 2 INLET DRAIN ANGLE SHUT-OFF VALVE	DN50
32	STOP VALVE DRAIN RH2 INLET	DN50
33	STOP VALVE DRAIN RH2 INLET	DN50
	EVAPORATOR VALVES	
34	SHUT-OFF VALVE DRAIN EVAPORATOR	DN50
35	EVAPORATOR SV DR EVAP IV	DN50

36	BLR RW IN HDR DRN MTR IV	DN50
37	SHUT-OFF VALVE DRAIN CIRCULATING SYSTEM	DN50
38	EVAPORATOR SV DR EVAP IV	DN50
	SUPERHEATER SPRAYWATER VALVES	
39	STOP VALVE VENT HP BYPASS SPRAY WATER	DN50
40	NPSH INJ WTR SPRW IN DV	DN50
41	STOP VALVE DRAIN SPRAY WATER STATION	DN50
42	STOP VALVE VENT HP BYPASS SPRAY WATER	DN50
43	SPRAYWATER CONTROL VALVE	DN80
44	SPRAYWATER STOP VALVE	DN50
45	Superheat Spray Water Isolating (Shut off) Valve	40mm
46	Superheat Spray Water Isolating (Shut off) Valve	DN50
47	SPRAYWATER CONTROL VALVE	DN80
48	SPRAYWATER STOP VALVE	DN50
49	Superheat Spray Water Isolating (Shut off) Valve	40mm
50	Superheat Spray Water Isolating (Shut off) Valve	DN50
51	Superheat Spray Water Isolating (Shut off) Valve	DN50
52	SPRAYWATER CONTROL VALVE	DN80
53	SPRAYWATER STOP VALVE	DN50
54	Superheat Spray Water Isolating (Shut off) Valve	40mm
55	Superheat Spray Water Isolating (Shut off) Valve	DN50
56	Superheat Spray Water Isolating (Shut off) Valve	DN50
57	SPRAYWATER CONTROL VALVE	DN80
58	SPRAYWATER STOP VALVE	DN50
59	Superheat Spray Water Isolating (Shut off) Valve	DN50
60	Superheat Spray Water Isolating (Shut off) Valve	DN50
61	Superheat Spray Water Isolating (Shut off) Valve	40mm
62	SPRAYWATER CONTROL VALVE	DN80
63	SPRAYWATER STOP VALVE	DN50
64	Superheat Spray Water Isolating (Shut off) Valve	40mm
65	Superheat Spray Water Isolating (Shut off) Valve	40mm
66	Superheat Spray Water Isolating (Shut off) Valve	40mm
67	SPRAYWATER CONTROL VALVE	DN80
68	SPRAYWATER STOP VALVE	DN50
69	Superheat Spray Water Isolating (Shut off) Valve	40mm
70	Superheat Spray Water Isolating (Shut off) Valve	40mm
71	Superheat Spray Water Isolating (Shut off) Valve	40mm
72	SPRAYWATER CONTROL VALVE	DN80
73	SPRAYWATER STOP VALVE	DN50
74	Superheat Spray Water Isolating (Shut off) Valve	40mm
75	Superheat Spray Water Isolating (Shut off) Valve	40mm
76	Superheat Spray Water Isolating (Shut off) Valve	40mm
77	SPRAYWATER CONTROL VALVE	DN80
78	SPRAYWATER STOP VALVE	DN50
79	Superheat Spray Water Isolating (Shut off) Valve	DN50
	REHEATER SPRAYWATER VALVES	

80	R/H SPRAYWATER CONTROL VALVE	DN50
81	R/H SPRAYWATER MAIN STOP VALVE	DN50
82	Reheat Spray Water Isolating (Shut off) Valve	80mm
83	Reheat Spray Water Isolating (Shut off) Valve	25mm
84	Reheat Spray Water Isolating (Shut off) Valve	40mm
85	R/H SPRAYWATER CONTROL VALVE	DN50
86	R/H SPRAYWATER MAIN STOP VALVE	DN50
87	Reheat Spray Water Isolating (Shut off) Valve	80mm
88	Reheat Spray Water Isolating (Shut off) Valve	25mm
89	Reheat Spray Water Isolating (Shut off) Valve	40mm
90	R/H SPRAYWATER CONTROL VALVE	DN50
91	R/H SPRAYWATER MAIN STOP VALVE	DN50
92	Reheat Spray Water Isolating (Shut off) Valve	80mm
93	Reheat Spray Water Isolating (Shut off) Valve	25mm
94	Reheat Spray Water Isolating (Shut off) Valve	40mm
95	R/H SPRAYWATER CONTROL VALVE	DN50
96	R/H SPRAYWATER MAIN STOP VALVE	DN50
97	Reheat Spray Water Isolating (Shut off) Valve	80mm
98	Reheat Spray Water Isolating (Shut off) Valve	25mm
99	Reheat Spray Water Isolating (Shut off) Valve	40mm
	CONDENSATE	
100	SAH 1 Aux steam control valve	DN250
101	SAH 1 Aux steam control valve	DN250
102	SAH 1 outlet stage Control valve	DN250
103	SAH 1 outlet stage Control valve	DN250
104	SAH 1 outlet stage Control valve	DN250
105	SAH 2 outlet stage Control valve	DN250
106	SAH 2 outlet stage Control valve	DN250
107	SAH 2 outlet stage Control valve	DN250
108	SAH1 Condensate to FWT Main stop valve	DN125
109	SAH1 Condensate to FWT control valve	DN125
110	SAH 2 Condensate to FWT Main stop valve	DN125
111	SAH2 Condensate to FWT control valve	DN125
112	SAH1 Condensate to BDV control valve	DN125
113	SAH2 Condensate to BDV control valve	DN125
114	BDV CONDENSATE PUMP CONTROL VALVE	DN200
115	BDV CONDENSATE PUMP STOP VALVE	DN200

Medupi Power Station: Boiler Valves, Turbine Valves and Commissioning - strip, inspect, blue, box and stroke. Estimate scope below for a GO/MGO/IR (subject to change):

Medupi Boiler Valves GO/MGO/IR (118)	
QIP	DESCRIPTION
	BOILER VALVES
1	DRAIN VALVE FEED WATER LINE (50mm)
2	DRAIN VALVE FEED WATER LINE (50mm)
3	STOP VALVE DRAIN EVAPORATOR (50mm)
4	STOP VALVE DRAIN EVAPORATOR (50mm)
5	STOP VALVE DRAIN EVAPORATOR (50mm)
6	STOP VALVE DRAIN EVAPORATOR (50mm)
7	STOP VALVE DRAIN SPRAY WATER (50mm)
8	STOP VALVE DRAIN SPRAY WATER (50mm)
9	STOP VALVE DRAIN SPRAY WATER (50mm)
10	STOP VALVE DRAIN SPRAY WATER (50mm)
11	STOP VALVE DRAIN CIRCULATING (50mm)
12	STOP VALVE DRAIN CIRCULATING (50mm)
13	SHUT-OFF VALVE DRAIN CIRCULATING SYSTEM (50mm)
14	SHUT-OFF VALVE DRAIN CIRCULATING SYSTEM (50mm)
15	ANGLE SHUT-OFF VALVE DRAIN SH1.1 INLET (50mm)
16	ANGLE SHUT-OFF VALVE DRAIN SH1.1 INLET (50mm)
17	ANGLE SHUT-OFF VALVE DRAIN SH1.1 INLET (50mm)
18	ANGLE SHUT-OFF VALVE DRAIN SH1.1 INLET (50mm)
19	STOP VALVE DRAIN SH1.1 INLET (50mm)
20	STOP VALVE DRAIN SH1.1 INLET (50mm)
21	STOP VALVE DRAIN SH1.1 INLET (50mm)
22	STOP VALVE DRAIN SH1.1 INLET (50mm)
23	ANGLE SHUT-OFF VALVE DRAIN SH1 OUTLET (50mm)
24	ANGLE SHUT-OFF VALVE DRAIN SH1 OUTLET (50mm)
25	ANGLE SHUT-OFF VALVE DRAIN SH2 OUTLET (50mm)
26	ANGLE SHUT-OFF VALVE DRAIN SH2 OUTLET (50mm)
27	ANGLE SHUT-OFF VALVE DRAIN SH3 INLET (50mm)
28	ANGLE SHUT-OFF VALVE DRAIN SH3 INLET (50mm)
29	STOP VALVE DRAIN SH1 OUTLET (50mm)

30	STOP VALVE DRAIN SH1 OUTLET (50mm)
31	STOP VALVE DRAIN SH2 OUTLET (50mm)
32	STOP VALVE DRAIN SH2 OUTLET (50mm)
33	STOP VALVE DRAIN SH3 INLET (50mm)
34	STOP VALVE DRAIN SH3 INLET (50mm)
35	ANGLE SHUT-OFF VALVE DRAIN RH1 OUTLET (50mm)
36	ANGLE SHUT-OFF VALVE DRAIN RH1 OUTLET (50mm)
37	ANGLE SHUT-OFF VALVE DRAIN RH1 OUTLET (50mm)
38	ANGLE SHUT-OFF VALVE DRAIN RH1 OUTLET (50mm)
39	STOP VALVE DRAIN RH1 OUTLET (50mm)
40	STOP VALVE DRAIN RH1 OUTLET (50mm)
41	STOP VALVE DRAIN RH1 OUTLET (50mm)
42	STOP VALVE DRAIN RH1 OUTLET (50mm)
43	ANGLE SHUT-OFF VALVE DRAIN RH2 INLET (50mm)
44	ANGLE SHUT-OFF VALVE DRAIN RH2 INLET (50mm)
45	ANGLE SHUT-OFF VALVE DRAIN RH2 INLET (50mm)
46	ANGLE SHUT-OFF VALVE DRAIN RH2 INLET (50mm)
47	STOP VALVE DRAIN RH2 INLET (50mm)
48	STOP VALVE DRAIN RH2 INLET (50mm)
49	STOP VALVE DRAIN RH2 INLET (50mm)
50	STOP VALVE DRAIN RH2 INLET (50mm)
51	STOP VALVE VENT DISTRIBUTOR SEPARATOR INLET (25mm)
52	STOP VALVE VENT DISTRIBUTOR SEPARATOR INLET (25mm)
53	STOP VALVE VENT START UP VESSEL (25mm)
54	STOP VALVE VENT START UP VESSEL (25mm)
55	STOP VALVE VENT OUTER SUPPORT TUBES (25mm)
56	STOP VALVE VENT OUTER SUPPORT TUBES (25mm)
57	STOP VALVE NITROGEN INJECTION VENT OUTER SUPPORT TUBES (25mm)
58	STOP VALVE NITROGEN INJECTION VENT OUTER SUPPORT TUBES (25mm)
59	STOP VALVE VENT OUTER SUPPORT TUBES (25mm)
60	STOP VALVE VENT OUTER SUPPORT TUBES (25mm)
61	STOP VALVE VENT INLET HEADER SUPPORT TUBES (25mm)
62	STOP VALVE VENT INLET HEADER SUPPORT TUBES (25mm)
63	STOP VALVE VENT INLET HEADER SH2 (25mm)
64	STOP VALVE VENT INLET HEADER SH2 (25mm)

65	STOP VALVE VENT OUTLET HEADER SH 3 (25mm)
66	STOP VALVE VENT OUTLET HEADER SH 3 (25mm)
67	STOP VALVE VENT HP BYPASS SPRAY WATER (25mm)
68	STOP VALVE VENT HP BYPASS SPRAY WATER (25mm)
69	STOP VALVE VENT HP BYPASS SPRAY WATER (25mm)
70	STOP VALVE VENT HP BYPASS SPRAY WATER (25mm)
71	STOP VALVE VENT INLET HEADER RH1 (25mm)
72	STOP VALVE VENT INLET HEADER RH1 (25mm)
73	STOP VALVE VENT INLET HEADER RH1 (25mm)
74	STOP VALVE VENT INLET HEADER RH1 (25mm)
75	STOP VALVE VENT INLET HEADER RH2 (25mm)
76	STOP VALVE VENT INLET HEADER RH2 (25mm)
77	STOP VALVE VENT INLET HEADER RH2 (25mm)
78	STOP VALVE VENT INLET HEADER RH2 (25mm)
79	STOP VALVE AUXILIARY STEAM BOILER WARM UP (250mm)
80	STOP VALVE AUXILIARY STEAM BOILER WARM UP (250mm)
81	STOP VALVE VENT AUXILIARY STEAM WARM UP (50mm)
82	DRAIN STOP VALVE HP STEAM LINE 1 (50mm)
83	DRAIN STOP VALVE HP STEAM LINE 2 (50mm)
84	DRAIN STOP VALVE HOT REHEAT STEAM LINE 1 (50mm)
85	DRAIN STOP VALVE HOT REHEAT STEAM LINE 2 (50mm)
86	GATE VALVE MILL STEAM MILL 50 (150mm)
87	GATE VALVE MILL STEAM MILL 50 (150mm)
88	GATE VALVE MILL STEAM MILL 50 (150mm)
89	GATE VALVE MILL STEAM MILL 50 (150mm)
90	GATE VALVE MILL STEAM MILL 50 (150mm)
91	STOP VALVE DRAINLINE AUXILIARY STEAM BOILER HOUSE (50mm)
92	DRAIN VALVE 1 AUXILIARY STEAM AUXILIARY BAY (15mm)
93	DRAIN VALVE 2 AUXILIARY STEAM AUXILIARY BAY (15mm)
94	DRAIN VALVE 1 AUXILIARY STEAM BOILER HOUSE (15mm)
95	DRAIN VALVE 2 AUXILIARY STEAM BOILER HOUSE (15mm)
96	ANGLE SHUT-OFF VALVE SPRAY WATER NOZZLE ATT1 (40mm)
97	ANGLE SHUT-OFF VALVE SPRAY WATER NOZZLE ATT2 (40mm)
98	ANGLE SHUT-OFF VALVE SPRAY WATER NOZZLE ATT3 (40mm)
99	ANGLE SHUT-OFF VALVE SPRAY WATER NOZZLE ATT4 (40mm)

100	ANGLE SHUT-OFF VALVE SPRAY WATER NOZZLE ATT2 (40mm)
101	ANGLE SHUT-OFF VALVE SPRAY WATER NOZZLE ATT3 (50mm)
102	ANGLE SHUT-OFF VALVE SPRAY WATER NOZZLE ATT4
103	ANGLE SHUT-OFF VALVE SPRAY WATER NOZZLE ATT5 (50mm)
104	ANGLE SHUT-OFF VALVE SPRAY WATER REHEATER ADD NOZZLE (80mm)
105	ANGLE SHUT-OFF VALVE SPRAY WATER REHEATER ADD NOZZLE (25mm)
106	ANGLE SHUT-OFF VALVE SPRAY WATER REHEATER ADD NOZZLE (40mm)
107	ANGLE SHUT-OFF VALVE SPRAY WATER REHEATER ADD NOZZLE (80mm)
108	ANGLE SHUT-OFF VALVE SPRAY WATER REHEATER ADD NOZZLE (25mm)
109	ANGLE SHUT-OFF VALVE SPRAY WATER REHEATER ADD NOZZLE (40mm)
110	ANGLE SHUT-OFF VALVE SPRAY WATER REHEATER ADD NOZZLE (80mm)
111	ANGLE SHUT-OFF VALVE SPRAY WATER REHEATER ADD NOZZLE (40mm)
112	ANGLE SHUT-OFF VALVE SPRAY WATER REHEATER ADD NOZZLE (40mm)
113	ANGLE SHUT-OFF VALVE SPRAY WATER REHEATER ADD NOZZLE (80mm)
114	ANGLE SHUT-OFF VALVE SPRAY WATER REHEATER ADD NOZZLE (25mm)
115	ANGLE SHUT-OFF VALVE SPRAY WATER REHEATER ADD NOZZLE (40mm)
116	STOP VALVE DISCHARGE FROM START UP VESSEL (350mm)
117	DRAIN CONTROL VALVE HP STEAM LINE 1 (50mm)
118	DRAIN CONTROL VALVE HP STEAM LINE 2 (50mm)

Medupi GO/MGO/IR/IN/GI Turbine Valves (40)		
QIP	Description	Size
	MAIN CONDENSATE & LOW PRESSURE HEATING	
	CONDENSATE & LOW PRESSURE HEATING	
1	LP HEATER WATERSIDE INLET VALVE	400mm
2	LP HEATER WATERSIDE BYPASS VALVE	400mm
3	LP HEATER 1 WATERSIDE OUTLET VALVE	400mm
4	LP HEATER 2 WATERSIDE INLET VALVE	400mm
5	LP HEATER 2 WATERSIDE BYPASS VALVE	400mm
6	LP HEATER 2 WATERSIDE OUTLET VALVE	400mm
7	LP HEATER 3 WATERSIDE INLET VALVE	500mm
8	LP HEATER 3 WATERSIDE BYPASS VALVE	500mm
9	LP HEATER 3 WATERSIDE OUTLET VALVE	400mm
	CONTROL VALVES	
10	FWP 1 MIN FLOW HYDRAULIC CONTROL V (300mm)	300mm
11	FWP 2 MIN FLOW HYDRAULIC CONTROL V (300mm)	300mm

12	FWP 3 MIN FLOW HYDRAULIC CONTROL V (300mm)	300mm
	BOOSTER AND DISCHARGE ISOL V/V	
13	FWP1 BOOSTER PUMP SUCTION VALVE	350mm
14	FWP2 BOOSTER PUMP SUCTION VALVE	350mm
15	FWP 3 BOOSTER PUMP SUCTION VALVE	350mm
16	FWP 1 DISCH ISOLATING VALVE	350mm
17	FWP 2 DISCH ISOLATING VALVE	350mm
18	FWP 3 DISCH ISOLATING VALVE	350mm
	FEED WATER VALVES	
	PROCESS DRAIN VALVES	
19	HP HTR 5A WATER SIDE INLET DV1 (40mm)	40mm
20	HP HTR 5A WATER SIDE INLET DV2 (40mm)	40mm
21	HP HTR 5/6A BYPASS LINE DV1 (40mm)	40mm
22	HP HTR 5/6A BYPASS LINE DV2 (40mm)	40mm
23	HP HTR 5B WTR SIDE INLET DRAIN VALVE (40mm)	40mm
24	HP HTR 5B WTR SIDE INLET DRAIN VALVE (40mm)	40mm
25	HP HTRS 5/6B BYPASS LINE DV1 (40mm)	40mm
26	HP HTRS 5/6B BYPASS LINE DV2 (40mm)	40mm
27	HP HTR 6A WATER SIDE OUTLET DV1 (40mm)	40mm
28	HP HTR 6A WATER SIDE OUTLET DV2 (40mm)	40mm
29	FEED WATER TO BOILER LINE DRAIN V 1 (40mm)	40mm
30	FEED WATER TO BOILER LINE DRAIN V 2 (40mm)	40mm
31	HP HTR 6B WATER SIDE OUT DRAIN VALVE (40mm)	40mm
32	HP HTR 6B WATER SIDE OUT DRAIN VALVE (40mm)	40mm
33	FW TO BOILER LINE DRAIN VALVE 1 (40mm)	40mm
34	FW TO BOILER LINE DRAIN VALVE 2 (40mm)	40mm
35	U4 FWP 1 DISCHARGE DRAIN VALVE 1 (40mm)	40mm
36	U4 FWP 1 DISCHARGE DRAIN VALVE 2 (40mm)	40mm
37	U4 FWP 2 DISCHARGE DRAIN VALVE 1 (40mm)	40mm
38	U4 FWP 2 DISCHARGE DRAIN VALVE 2 (40mm)	40mm
39	U4 FWP 3 DISCHARGE DRAIN VALVE 1 (40mm)	40mm
40	U4 FWP 3 DISCHARGE DRAIN VALVE 2 (40mm)	40mm

MEDUPI GI/IN BOILER VALVES		
QIP	DESCRIPTION	Size
1	STOP VALVE DRAIN EVAPORATOR (GLOVE VALVE) - DN 50	50mm
2	SHUT-OFF VALVE DRAIN CIRCULATING SYSTEM(GLOVE VALVE) - DN 25	25mm
3	SHUT-OFF VALVE DRAIN CIRCULATING SYSTEM(GLOVE VALVE) - DN 25	25mm

4	CIRCULATING SYSTEM DRAIN STOP VALVE (GLOVE VALVE) - DN 25	25mm
5	CIRC/P DISCH SAMP & ANAL IV 1(GLOVE VALVE) -DN 50	50mm
6	CONTROL VALVE CIRCULATION SYSTEM(GLOVE VALVE) - DN 300	300mm
7	STOP VALVE DISCHARGE FROM START-UP VESSEL(GLOVE VALVE) - DN 350	350mm
8	STOP VALVE DRAIN SH1.1 INLET(GLOVE VALVE) - DN 25	25mm
9	STOP VALVE VENT OUTER SUPPORT TUBES(GLOVE VALVE) - DN 25	25mm
10	STOP VALVE VENT OUTER SUPPORT TUBES(GLOVE VALVE) - DN 25	25mm
11	STOP VALVE VENT OUTER SUPPORT TUBES(GLOVE VALVE) - DN 25	25mm
12	STOP VALVE VENT OUTER SUPPORT TUBES(GLOVE VALVE) - DN 25	25mm
13	STOP VALVE VENT INLET HEADER SUPPORT TUBES(GLOVE VALVE) - DN 25	25mm
14	STOP VALVE VENT INLET HEADER SUPPORT TUBES(GLOVE VALVE) - DN 25	25mm
15	ANGLE SHUT-OFF VALVE DRAIN SH1 OUTLET(GLOVE VALVE) - DN 50	50mm
16	STOP VALVE DRAIN SH1 OUTLET(GLOVE VALVE) - DN 50	50mm
17	STOP VALVE DRAIN SH1 OUTLET(GLOVE VALVE) - DN 50	50mm
18	STOP VALVE DRAIN SH2 OUTLET(GLOVE VALVE) - DN 50	50mm
19	ANGLE SHUT-OFF VALVE DRAIN SH3 OUTLET(GLOVE VALVE) - DN 50	50mm
20	STOP VALVE RH2 INLET(GLOVE VALVE) - DN 50	50mm
21	STOP VALVE RH2 INLET(GLOVE VALVE) - DN 50	50mm
22	STOP VALVE DRAIN TO BBDV BOILER SOOT BLOWER SYSTEM(GLOVE VALVE) -DN 80	80mm
23	STOP VALVE DRAIN TO BBDV BOILER SOOT BLOWER SYSTEM(GLOVE VALVE) -DN 50	50mm
24	DRAIN VALVE FEED WATER LINE(GLOVE VALVE) -DN 50	50mm
25	DRAIN VALVE FEED WATER LINE(GLOVE VALVE) -DN 50	50mm
26	EVAP ECON HP INJ WATER SYSTEM CV(GLOVE VALVE) - DN 85	80mm
27	STOP VALVE VENT HP BYPASS SPRAY WATER(GLOVE VALVE) - DN 25	25mm
28	CONTROL VALVE SPRAY WATER ATTEMPERATOR1(GLOVE VALVE) - DN 80	80mm
29	ANGLE SHUT-OO VALVE SPRAY WATER NOZZLE ATT1(GLOVE VALVE) - DN 40	40mm
30	CONTROL VALVE SPRAY WATER ATTEMPERATOR2(GLOVE VALVE) - DN 80	80mm
31	CONTROL VALVE SPRAY WATER ATTEMPERATOR2(GLOVE VALVE) - DN 80	80mm
32	HOT REHEAT SAFETY V H VLV(GLOVE VALVE) - DN 400/600	400mm
33	HP BYPASS STM CONTROL VALVE(GLOVE VALVE) - DN 200/550	200mm
34	HP BYPASS STM CONTROL VALVE(GLOVE VALVE) - DN 200/550	200mm
35	AUX STM U 1-4 AND 6 DRN LN DV(GLOVE VALVE) -DN 50	50mm
36	AUX STM VNT AND DRN STS DV 1/2 (GLOVE VALVE) - DN 50	50mm
37	AUX STM VNT AND DRN SYS DV 1/2(GLOVE VALVE) - DN 50	50mm

Majuba Power Station: Turbine Valves and Commissioning - strip, inspect, blue, box and stroke. Estimate scope below for a GO/MGO/IR (subject to change):

Majuba GO/MGO Turbine Valves (277)		
QIP	DESCRIPTION	SIZE
	STATOR WATER	
1	01 - STATOR WATER COOLER OUTLET I/V (100MM) - #01	100MM
2	02 - STATOR WATER COOLER INLET I/V (100MM) - #02	100MM
3	03 - STATOR WATER COOLER OUTLET I/V (100MM) - #03	100MM
4	04 - STATOR WATER COOLER INLET I/V (100MM) - #04	100MM
5	05 - STATOR WATER PUMP INLET I/V - #05	80MM
6	06 - STATOR WATER PUMP OUTLET I/V - #06	80MM
7	07 - STATOR WATER PUMP INLET I/V - #07	80MM
8	08 - STATOR WATER PUMP OUTLET I/V - #08	80MM
9	09 - PUMP ISOLATING VALVE - #09	80MM
10	10 - PUMP ISOLATING VALVE - #10	80MM
11	11 - PUMP ISOLATING VALVE - #11	80MM
12	12 - PUMP ISOLATING VALVE - #12	80MM
	BLED STEAMS	
13	13 - BLED STEAM TO DEAERATOR VALVE (DEWRANCE NRV 500MM) - #13	500MM
14	14 - BLED STEAM TO DEAERATOR VALVE (DEWRANCE NRV 500MM) - #14	500MM
15	15 - BLED STEAM TO HP HEATER 5A & 5B VALVE (DEWRANCE NRV 450MM) - #15	450MM
16	16 - BLED STEAM TO HP HEATER 6A VALVE (DEWRANCE NRV 250MM) - #16	250MM
17	17 - BLED STEAM TO HP HEATER 6B VALVE (DEWRANCE NRV 250MM) - #17	250MM
18	18 - BLED STEAM TO LP HEATER 3 VALVE (DEWRANCE NRV 650MM) - #18	650MM
19	19 - BLED STEAM TO DST STEAM TRAP (50MM) - #19	50MM
	GLAND STEAMS	
20	20- GLAND STEAM VALVES - #20	100MM
21	21- GLAND STEAM AUX STEAM SUPPLY NRV - #21	100MM
22	22- GLAND STEAM AUX STEAM SUPPLY IV - #22	100MM
23	23- GLAND STEAM WARMING IV - #23	100MM
24	24- IP EXHAUST GLAND STEAM SUPPLY NRV - #24	100MM
25	25- LP GLAND STEAM DUMP DESUPERHEATER - #25	100MM
26	26- LP GLAND STEAM DUMP DESUPERHEATER - #26	100MM
27	27- BLED STAEM TO DST STEAM TRAP - #27	100MM
28	28- HP FLANGE HEATING VALVE- #28	100MM
29	29- IP FLANGE HEATING VALVE- #29	100MM
30	30- HP FLANGE HEATING WARMING PRESET VALVE- #30	100MM
31	31- IP FLANGE VALVE HEATING WARMING PRESET VALVE- #31	100MM
	TURBINE DRAINS	
32	32- HP EXHAUST VENT- #32	80MM
33	33- C/RH DRAIN VALVE- #33	80MM
34	34- C/RH DRAIN VALVE- #34	80MM

35	35- C/RH DRAIN VALVE- #35	80MM
36	36- C/RH DRAIN VALVE- #36	80MM
37	37- C/RH EMERGENCY DRAIN VALVE- #37	80MM
38	38- C/RH EMERGENCY DRAIN VALVE- #38	80MM
39	39- C/RH EMERGENCY DRAIN VALVE- #39	80MM
40	40- C/RH EMERGENCY DRAIN VALVE- #40	80MM
41	41- HP CHEST DRAIN VALVE- #41	80MM
42	42- HP CHEST DRAIN VALVE- #42	80MM
43	43- #43	80MM
44	44- HP CHEST DRAIN VALVE- #44	80MM
45	45- HP CHEST DRAIN VALVE- #45	80MM
46	46- HP CHEST DRAIN VALVE- #46	80MM
47	47- IP CHEST DRAIN VALVE- #47	80MM
48	48- IP CHEST DRAIN VALVE- #48	80MM
49	49- IP CHEST DRAIN VALVE- #49	80MM
50	50- IP CHEST DRAIN VALVE- #50	80MM
51	51- IP CHEST DRAIN VALVE- #51	80MM
52	52- IP CHEST DRAIN VALVE- #52	80MM
53	53- IP/LP STEAM BYPASS DRAIN VALVE- #53	80MM
54	54- IP/LP STEAM BYPASS DRAIN VALVE- #54	80MM
55	55- IP/LP STEAM BYPASS DRAIN VALVE- #55	80MM
56	56- IP/LP STEAM BYPASS DRAIN VALVE- #56	80MM
57	57- HP RH COLD REHEAT VENT DRAIN- #57	80MM
58	58- C/RH DRAIN VALVE- #58	80MM
59	59- C/RH DRAIN VALVE- #59	80MM
60	60- HP RH COLD REHEAT VENT DRAIN- #60	80MM
61	61- C/RH EMERGENCY DRAIN VALVE- #61	80MM
62	62- C/RH EMERGENCY DRAIN VALVE- #62	80MM
63	63- C/RH EMERGENCY DRAIN VALVE- #63	80MM
	bled steam drain valves	
64	64- PARALLEL SLIDE (HOPKINSONS 65MM)- #64	65MM
65	65- PARALLEL SLIDE (HOPKINSONS 50MM)- #65	50MM
66	66- PARALLEL SLIDE (HOPKINSONS 50MM)- #66	50MM
67	67- PARALLEL SLIDE (HOPKINSONS 50MM)- #67	50MM
68	68- PARALLEL SLIDE (HOPKINSONS 50MM)- #68	50MM
69	69- PARALLEL SLIDE (HOPKINSONS 40MM)- #69	40MM
70	70- PARALLEL SLIDE (HOPKINSONS 40MM)- #70	40MM
71	71- PARALLEL SLIDE (HOPKINSONS 40MM)- #71	40MM
72	72- PARALLEL SLIDE (HOPKINSONS 40MM)- #72	40MM
73	73- PARALLEL SLIDE (HOPKINSONS 40MM)- #73	40MM
74	74- PARALLEL SLIDE (HOPKINSONS 40MM)- #74	40MM
75	75- PARALLEL SLIDE (HOPKINSONS 40MM)- #75	40MM
76	76- PARALLEL SLIDE (HOPKINSONS 40MM)- #76	40MM

77	77- PARALLEL SLIDE (HOPKINSONS 40MM)- #77	40MM
78	78- PARALLEL SLIDE (HOPKINSONS 40MM)- #78	40MM
	AUX COOLING WATER VALVES	
79	79- #79	250MM
80	80- #80	250MM
81	81- #81	250MM
82	82- #82	250MM
83	83- #83	250MM
84	84- #84	250MM
85	85- #85	250MM
86	86- #86	250MM
87	87- #87	250MM
88	88- #88	250MM
89	89- #89	250MM
90	90- #90	250MM
91	91- #91	250MM
92	92- #92	250MM
93	93- #93	250MM
94	94- #94	250MM
95	95- #95	250MM
96	96- #96	250MM
97	97- #97	250MM
98	98- #98	250MM
99	99- #99	250MM
100	100- #100	250MM
101	101- #101	250MM
102	102- #102	250MM
103	103- #103	250MM
104	104- #104	250MM
105	105- #105	250MM
106	106- #106	250MM
107	107- #107	250MM
108	108- #108	250MM
109	109- #109	250MM
110	110- #110	250MM
	FORCE AIR COOLING VALVES	
111	111- HP CYLINDER FAC INLET- #111	150MM
112	112- HP CYLINDER FAC INLET- #112	150MM
113	113- HP CYLINDER FAC INLET- #113	150MM
114	114- HP CYLINDER FAC INLET- #114	150MM
115	115- HP CYLINDER TOP COOLING AIR PRIMARY OUTLET- #115	150MM
116	116- HP CYLINDER TOP COOLING AIR SECONDARY OUTLET- #116	150MM
117	117- IP CYLINDER TOP COOLING AIR PRIMARY OUTLET- #117	150MM

STEAM TRAPS		
118	118- DEAERATOR BLED STEAM DRAIN BEFORE LBS40AA201 TRAP INLET ISOLATOR- #118	150MM
119	119- DEAERATOR BLED STEAM DRAIN AFTER LBS40AA201 TRAP INLET ISOLATOR- #119	150MM
120	120- DEAERATOR BLED STEAM DRAIN AFTER LBS40AA202 TRAP INLET ISOLATOR- #120	150MM
121	121- STEAM TRAP- #121	150MM
122	122- STEAM TRAP- #122	150MM
123	123- STEAM TRAP- #123	150MM
CONDENSATE SYSTEM ASSEMBLY		
124	124- LP BYPASS STOP VALVE- #124	100MM
125	125- LP BYPASS STOP VALVE- #125	100MM
126	126- LP BYPASS CONTROL VALVE- #126	100MM
127	127- LP BYPASS CONTROL VALVE- #127	100MM
128	128- LP BYPASS WARMING VALVE- #128	100MM
129	129- LP BYPASS WARMING VALVE- #129	100MM
130	130- LP BYPASS SPRAY WATER VALVE- #130	100MM
131	131- LP BYPASS SPRAY WATER VALVE- #131	100MM
132	132- LP BYPASS SPRAY WATER VALVE- #132	100MM
133	133- LP BYPASS SPRAY WATER VALVE- #133	100MM
CONDENSATE SYSTEM VALVES		
134	134- DST VENT TO TCT- #134	150MM
135	135- DST VENT TO ATMOSPHERE- #135	150MM
136	136- DST RECIRC TO BBDS- #136	150MM
137	137- LOW LOAD STEAM TO DST- #137	150MM
138	138- LOW LOAD STEAM TO DST IV BYPASS- #138	150MM
139	139- LOW LOAD STEAM TO DST NRV- #139	150MM
140	140- BLED STEAM TO LPH30 ISOLATOR- #140	150MM
141	141- BLED STEAM TO DST- #141	150MM
142	142- CEP INLET IV- #142	150MM
143	143- CEP DISCH IV- #143	150MM
144	144- CEP DISCH NRV- #144	150MM
145	145- CEP INLET IV- #145	150MM
146	146- CEP DISCH IV- #146	150MM
147	147- CEP DISCH NRV- #147	150MM
148	148- CEP DISCH IV BYPASS- #148	200MM
149	149- CEP DISCH IV BYPASS- #149	200MM
150	150- CONDENSATE IV- #150	200MM
151	151- CONDENSATE TO LP HEATER 1 NRV- #151	200MM
152	152- CONDENSATE FF IV BYPASS- #152	200MM
153	153- CONDENSATE RECIRC IV- #153	200MM
154	154- LPH 10 INLET IV- #154	200MM
155	155- LPH 10 OUTLET IV- #155	200MM
156	156- LPH 20 INLET IV- #156	200MM

157	157- LPH 20 OUTLET IV- #157	200MM
158	158- LPH 30 INLET IV- #158	200MM
159	159- LPH 30 OUTLET IV- #159	200MM
160	160- LPH 10 OUTLET IV BYPASS- #160	200MM
161	161- LPH 20 OUTLET IV BYPASS- #161	200MM
162	162- LPH 30 OUTLET IV BYPASS- #162	200MM
163	163- LPH 1 CONDENSATE OUTLET VALVE BYPASS- #163	200MM
164	164- LPH 2 CONDENSATE OUTLET VALVE BYPASS- #164	200MM
165	165- LPH 2 CONDENSATE OUTLET VALVE BYPASS- #165	200MM
166	166- CEP A VENT- #166	200MM
167	167- CEP A SUNCTION RELIEF- #167	200MM
168	168- CEP B VENT- #168	200MM
169	169- CEP B SUNCTION RELIEF- #169	200MM
170	170- LPH 3 SHELL VENT- #170	250MM
171	171- LPH 3 SHELL RELIEF- #171	250MM
172	172- LPH 2 FLASHBOX TO LP DRAINS PUMP A ISOLATOR- #172	250MM
173	173- LP DRAINS PUMP A TO LPH 2 DISCHARGE ISOLATOR- #173	250MM
174	174- LPH 2 FLASHBOX TO LP DRAINS PUMP B ISOLATOR- #174	250MM
175	175- LPH DRAINS PUMP B TO LPH 2 DISCHARGE ISOLATOR- #175	250MM
176	176- SEAL WTR 21 MANIFOLD IN STRAINER- #176	250MM
177	177- SEAL WTR 30 M/SEAL SUP STNR- #177	250MM
178	178- CNDS 21 (CEP 11) SUC STNR- #178	250MM
179	179- CNDS 22 (CEP 12) SUC STNR- #179	250MM
180	180- AUX STM 30 S/T- #180	250MM
181	181- BS 75 DA SUP (AFTER NRV) 202 TRAP- #181	250MM
182	182- DA DRN AFTER LBS40AA202 TRAP BYP V- #182	250MM
183	183- BS 73 DA SUP (AFTER NRV) 201 TRAP- #183	250MM
184	184- BS DA SUP (BEF NRV) 201 TRAP- #184	150MM
185	185- HLD EJR 13 INTER COND STEAM TRAP- #185	150MM
186	186- HLD EJR 13 AFTER COND STEAM TRAP- #186	150MM
187	187- HLD EJR 14 INTER COND STEAM TRAP- #187	150MM
188	188- HLD EJR 14 AFTER COND STEAM TRAP- #188	150MM
189	189- LPH 1 CONDENSATE BYPASS- #189	150MM
190	190- LPH 2 CONDENSATE BYPASS- #190	150MM
191	191- LPH 3 CONDENSATE BYPASS- #191	150MM
192	192- LPH 1 PRESSURE RELIEF VALVE- #192	150MM
193	193- DST STANDPIPE A ON-LOAD TEST- #193	150MM
194	194- DST STANDPIPE B ON-LOAD TEST- #194	150MM
195	195- DST STANDPIPE C ON-LOAD TEST- #195	150MM
196	196- TCT FILLING- #196	150MM
197	197- LPH 2 FLASHBOX EMERGENCY DRAIN TO ACCCT- #197	150MM
198	198- LPH DRAINS PUMP A TO LPH 2 DISCHARGE NRV- #198	150MM
199	199- LPH DRAINS PUMP B TO LPH 2 DISCHARGE NRV- #199	150MM

200	200- LP DRAINS PUMP B SUCTION VENT- #200	150MM
201	201- LP DRAINS PUMP A SUCTION VENT- #201	150MM
202	202- LPH 2 FLASHBOX DRAIN PUMP RECIRC CONTROL- #202	150MM
203	203- CONDENSATE SURPLUS CV- #203	150MM
204	204- CONDENSATE SURPLUS NRV- #204	150MM
205	205- CONDENSATE PRIMING NRV- #205	150MM
206	206- CONDENSATE MAKE-UP ISOLATOR- #206	150MM
207	207- CONDENSATE MAKE-UP BYPASS- #207	150MM
208	208- CONDENSATE MAKE-UP CV- #208	150MM
209	209- CEP MECHANICAL SEAL NRV- #209	150MM
210	210- HTR 2 F/BOX LVL CV- #210	150MM
211	211- LP HTR 20 F/BOX LVL CV VENT IV- #211	150MM
212	212- DRN PMP TO NO 2 LP HTR DISCH- #212	150MM
213	213- (LP HTR 20) F/BOX DRN PMP'S PRIMING V- #213	150MM
214	214- LP HEATER 1 SHELL VENT VALVE- #214	150MM
215	215- LP HEATER 2 SHELL VENT VALVE- #215	150MM
216	216- AUX STM 32 DA PREWARMING SUP IV- #216	150MM
217	217- AUX STM 39 DA HTG MFLD IV- #217	150MM
218	218- BS 45 DA SYPHON BREAK NRV- #180	150MM
219	219- BLR BLOWDOWN VES DRN STM TRAP BYP VALVE- #219	150MM
220	220- AUX STM 30 S/T IN IV- #220	150MM
221	221- AUX STM 30 S/T OUT IV- #221	150MM
222	222- BS 80 CLD R/H SUP IV- #222	150MM
223	223- BLED STEAM 80 COLD REHEAT BYPASS IV- #223	150MM
224	224- BS 80 AUX STM SUP V BYP IV- #224	150MM
225	225- DA SUP (AFTER NRV) 202 TRAP IN V- #225	150MM
226	226- DA SUP (AFTER NRV) 202 TRAP OUT V- #226	150MM
227	227- DA DRN AFTER LBS40AA202 TRAP BYP V- #227	150MM
228	228- DA SUP (AFTER NRV) 201 TRAP IN IV- #228	150MM
229	229- DA SUP (AFTER NRV) 201 TRAP OUT IV- #229	150MM
230	230- BS 72 DA DRN AFTER LBS40AA201 BYP V- #230	150MM
231	231- BS DA SUP (BEF NRV) 210 TRAP IN IV- #231	150MM
232	232- BS DA SUP (BEF NRV) 210 TRAP OUT IV- #232	150MM
233	233- U4 BS 69 DA LOW LD DRN TCT IV- #233	150MM
234	234- BS 60 LOW LD STM TO DA PIPE DRN V- #234	150MM
235	235- AUX STM 33 AIR EJR IV- #235	150MM
236	236- AUX STEAM 33 EJECTOR LINE PRESS CV- #236	150MM
237	237- AUX STM 33 EJR LINE P CV BYP VALVE- #237	150MM
238	238- AUX STM 35 AIR EJECTOR SAFETY PRV- #238	150MM
239	239- AUX STM 34 HOG EJR 'A' STM IN- #239	150MM
240	240- AUX STM 35 HOG EJR 'B' STM IN- #240	150MM
241	241- AUX STM 37 HOGGING EJEC 'A' STM IN IV- #241	150MM
242	242- AUX STM 37 COND HOLDING EJECTOR 14 IV- #242	150MM

243	243- AUX STM 38 HLD EJR 'B' STM IN- #243	150MM
244	244- CNDS HOLDING EJR 13 ISOL V 02- #244	150MM
245	245- STM EJECT 10 SUCTION ISOL VALVE- #245	150MM
246	246- STM EJECT 11 SUCTION ISOL VALVE- #246	150MM
247	247- COND AIR EXTR 11 HOG EJEC (11) SUC VV- #247	150MM
248	248- COND AIR EXTR 12 HOG EJECT 12 SUCT VLV- #248	150MM
249	249- COND AIR EXTR 13 HOLD EJECT (13) SUCT V- #249	150MM
250	250- HOLDING EJECTOR (14) SUCTION VLV- #250	150MM
251	251- HOLDING INJECTORS COND OUTLET RELIEF VALVE- #251	150MM
252	252- HOLDING INJECTORS COND OUTLET RELIEF VALVE- #252	150MM
	HP FEEDWATER PLANT VALVES	
253	253- BFP10 SUCT ISOL (350MM)- #253	350MM
254	254- BFP20 SUCT ISOL (350MM)- #254	350MM
255	255- BFP30 SUCT ISOL (350MM)- #255	350MM
256	256- BFP20 SUCT PURGE ISOL (100MM)- #256	100MM
257	257- BFP20 SUCT PURGE ISOL (100MM)- #257	100MM
258	258- BFP30 SUCT PURGE ISOL (100MM)- #258	100MM
	BFP DISCHARGE/BFP LEAK-OFF/REHEAT ATTEMPERATING SRAYWATER	
259	259- BFP DISCHARGE NRV (285MM)- #259	285MM
260	260- BFP DISCHARGE NRV (285MM)- #260	285MM
261	261- BFP DISCHARGE NRV (285MM)- #261	285MM
262	262- BFP DISCHARGE ISOL (260MM)- #262	260MM
263	263- BFP DISCHARGE ISOL (260MM)- #263	260MM
264	264- BFP DISCHARGE ISOL (260MM)- #264	260MM
265	265- LAB10AA101 BYPASS (25MM)- #265	25MM
266	266- LAB20AA101 BYPASS (25MM)- #266	25MM
267	267- LAB30AA101 BYPASS (25MM)- #267	25MM
268	268- LAB10AA101 BYPASS (25MM)- #268	25MM
269	269- LAB20AA101 BYPASS (25MM)- #269	25MM
270	270- LAB30AA101 BYPASS (25MM)- #270	25MM
271	271- BFP 10 LEAK-OFF ISOLATING VALVE- #271	300MM
272	272- BFP 20 LEAK-OFF ISOLATING VALVE- #272	30MM
273	273- BFP 30 LEAK-OFF ISOLATING VALVE- #273	300MM
	BLED STEAM TO HP HEATERS	
274	274- BLED STEAM TO HP HTR 5A ISOLATOR (300MM)- #274	300MM
275	275- BLED STEAM TO HP HTR 5B ISOLATOR (300MM)- #275	300MM
276	276- BLED STEAM TO HP HTR 6A ISOLATOR (250MM)- #276	250MM
277	277- BLED STEAM TO HP HTR 6B ISOLATOR (250MM)- #277	250MM

Majuba IR Turbine Valves (82)		
QIP	DESCRIPTION	SIZE
	BLED STEAM VALVES	
1	BLED STEAM VALVE (DEWRANCE NRV 500MM)	500MM
2	BLED STEAM VALVE (DEWRANCE NRV 500MM)	500MM
3	BLED STEAM VALVE (DEWRANCE NRV 450MM)	450MM
4	BLED STEAM VALVE (DEWRANCE NRV 250MM)	250MM
5	BLED STEAM VALVE (DEWRANCE NRV 250MM)	250MM
6	BLED STEAM VALVE (DEWRANCE NRV 650MM)	650MM
7	BLED STEAM TO DST STEAM TRAP (50MM)	50MM
8	BLED STEAM TO DST STEAM TRAP (50MM)	50MM
	TURBINE DRAINS	
9	IP/LP Steam Bypass Drain Valve (100MM)	100MM
10	IP/LP Steam Bypass Drain Valve (100MM)	100MM
11	IP/LP Steam Bypass Drain Valve	100MM
12	IP/LP Steam Bypass Drain Valve	100MM
	BFP INLET AND BFP PURGE LINE	
13	BFP 10 SUCTION I/V 350MM DEWRANCE	350MM
14	BFP 20 SUCTION I/V 350MM DEWRANCE	350MM
15	BFP 30 SUCTION I/V 350MM DEWRANCE	350MM
	BFP DISCHARGE / BFP LEAK-OFF / RE-HEAT ATTEMPERATING SPRAYWATER	
16	BFP DISHARGE ISOL 260MM DEWRANCE	300MM
17	BFP DISHARGE ISOL 260MM DEWRANCE	300MM
18	BFP DISHARGE ISOL 260MM DEWRANCE	300MM
19	LAB10AA101 BYPASS 25MM DEWRANCE	100MM
20	LAB20AA101 BYPASS 25MM DEWRANCE	100MM
21	LAB30AA101 BYPASS 25MM DEWRANCE	100MM
22	LAB10AA101 BYPASS 25MM DEWRANCE	100MM
23	LAB20AA101 BYPASS 25MM DEWRANCE	100MM
24	LAB30AA101 BYPASS 25MM DEWRANCE	100MM
25	BFP 10 LEAK-OFF ISOLATING VALVE (250MM)	250MM
26	BFP 20 LEAK-OFF ISOLATING VALVE (250MM)	250MM
27	BFP 30 LEAK-OFF ISOLATING VALVE (250MM)	250MM
	BLED STEAM TO HP HEATERS	
29	BLED STEAM TO HP HTR 5A ISOLATOR HOPKINSONS (300MM)	300MM
30	BLED STEAM TO HP HTR 5B ISOLATOR HOPKINSONS (300MM)	300MM
31	BLED STEAM TO HP HTR 6A ISOLATER DEWRANCE (250MM)	250MM
32	BLED STEAM TO HP HTR 6B ISOLATER DEWRANCE (250MM)	250MM
	CONDENSER & CONDENSER CLEANING EQUIPMENT	
33	CONDENSER WATERBOXES	125MM
34	CONDENSER WATERBOXES	125MM
	HOGGING AND HOLDING EJECTORS	
35	HOLDING EJECTORS	250MM

36	HOLDING EJECTORS	250MM
37	HOLDING AND HOLDING EJECTORS	125MM
38	HOLDING AND HOLDING EJECTORS	125MM
39	HOLDING AND HOLDING EJECTORS	125MM
40	HOLDING AND HOLDING EJECTORS	125MM
	SEAL WATER TANK	
41	SEAL WATER TANK	80MM
42	SEAL WATER TANK SIGHT GLASS	80MM
	CONDENSATE VALVES	
43	LOW LOAD STEAM TO DST	125MM
44	LOW LOAD STEAM TO DST IV BYPASS	125MM
45	LOW LOAD STEAM TO DST NRV	200MM
46	CEP DISCH NRV	200MM
47	CEP DISCH NRV	200MM
48	CEP DISCH NRV	200MM
49	CONDENSATE IV	125MM
50	CONDENSATE RECIRC CV	125MM
51	DST STANDPIPE A ON-LOAD TEST	100MM
52	DST STANDPIPE B ON-LOAD TEST	100MM
53	DST STANDPIPE C ON-LOAD TEST	100MM
53	CEP A VENT	100MM
54	CEP B VENT	100MM
55	LPH 3 SHELL VENT	100MM
56	LPH 3 SHELL VENT	100MM
57	CONDENSATE SURPLUS NRV	125MM
58	CONDENSATE SURPLUS NRV	125MM
59	CONDENSATE SURPLUS NRV	125MM
60	LPH 1 LOOP DRAIN SEAL ISOLATOR	100MM
61	CONDENSATE MAKE-UP ISOLATOR	100MM
62	CEP MECHANICAL SEAL NRV	100MM
63	(LP HTR 20) F/BOX DRN PMPS PRIMING V	100MM
64	LP HEATER 1 SHELL VENT VALVE	100MM
65	LP HEATER 2 SHELL VENT VALVE	100MM
66	BS 45 DA SYPHON BREAK NRV	200MM
67	SEAL WTR 21 MAINFOLD IN STRAINER	100MM
68	SEAL WTR 30 M/SEAL SUP STNR	100MM
69	CNDS 21 (CEP 11) SUC STNR	100MM
70	CNDS 22 (CEP 12) SUC STNR	100MM
71	CNDS 22 (CEP 12) SUC STNR	100MM
72	AUX STM 30 S/T	125MM
73	HLD EJR 13 INTER COND STEAM TRAP	100MM
74	HLD EJR 13 AFTER COND STEAM TRAP	100MM
75	HLD EJR 14 INTER COND STEAM TRAP	100MM

76	HLD EJR 14 AFTER COND STEAM TRAP	100MM
77	CW 11 COND LH IN AIR RELEASE	100MM
78	CONDENSER 12 OUTLET BREATHER	100MM
79	CW 22 CONDENSOR R/H OUTLET BYPASS	100MM
80	CW 22 CONDENSOR R/H OUTLET IV BYPASS V/V	100MM
81	CW 12 CONDENSOR RH OUTLET BYPASS	100MM
82	CW 12 CONDENSOR RH OUTLET I/V BYPASS V/V	100MM

Matimba Power Station: Boiler Valves, Turbine Valves and Commissioning - strip, inspect, blue, box and stroke. Estimate scope below for a GO/MGO/IR (subject to change):

MATIMBA TURBINE VALVES GO/MGO/IR (429)		
QIP	DESCRIPTION	VV SIZE
1	FWT WATER LEVEL INDICATOR TOP VALVE (40mm)	40mm
2	FWT STANDPIPE DRAIN VALVE (40mm)	40mm
3	FWT STANDPIPE VENT VALVE (40mm)	40mm
4	FWT STANDPIPE DRAIN VALVE (40mm)	40mm
5	FWT STANDPIPE DRAIN VALVE (40mm)	40mm
6	FWT VENT ISOL VALVE 1 (40mm)	40mm
7	FWT VENT ISOL VALVE 2 (40mm)	40mm
8	FWT VENT ISOL VALVE 3 (40mm)	40mm
9	HP HTR 5.1 DIST LINE TO FWT VENT VALVE (40mm)	40mm
10	HP HTR 5.2 DIST LINE TO FWT VENT VALVE (40mm)	40mm
11	HP HTR 6.1 DIST LINE TO FWT VENT VALVE (40mm)	40mm
12	HP HTR 6.2 DIST LINE TO FWT VENT VALVE (40mm)	40mm
13	FWT DRAIN ISOL VALVE (200mm)	200MM
14	FWT DRAIN OVERFLOW TO DFT INLET VALVE (40mm)	200MM
15	EFP A L.O LINE IV (65mm)	65MM
16	EFP A L.O LINE IV (65mm)	65MM
17	EFP A L.O LINE IV (65mm)	65MM
18	EFP A L.O LINE IV (25mm)	65MM
19	EFP A L.O DRN V (25mm)	25MM
20	EFP A L.O DRN V 2 (25mm)	25MM
21	EFP A L.O DRN V 3 (25mm)	25MM
22	EFP A L.O DRN V 4 (25mm)	25MM
23	EFP A L.O VNT V 1 (25mm)	25MM
24	EFP A L.O VNT V 2 (25mm)	25MM
25	EFP B L.O LINE IV (65MM)	65MM
26	EFP B L.O LINE IV (65MM)	65MM
27	EFP B L.O LINE IV (65MM)	65MM
28	EFP B L.O LINE IV (65MM)	65MM

29	EFP B L.O DRN V 1 (25MM)	25MM
30	EFP C L.O DRN V 2 (25MM)	25MM
31	EFP B L.O DRN V 3 (25MM)	25MM
32	EFP B L.O DRN V 4 (25MM)	25MM
33	EFP A L.O VNT V 1 (25mm)	25MM
34	EFP A L.O V 2 (25MM)	25MM
35	EFP C L.O LINE IV (65MM)	65MM
36	EFP C L.O LINE IV (65MM)	65MM
37	EFP C L.O LINE IV (65MM)	65MM
38	EFP C L.O LINE IV (65MM)	65MM
39	EFP C L.O DRN V 1 (25MM)	25MM
40	EFP C L.O DRN V 2 (25MM)	25MM
41	EFP C L.O DRN V 3 (25MM)	25MM
42	EFP C L.O DRN V 4 (25MM)	25MM
43	EFP A L.O VNT V 1 (25mm)	25MM
44	EFP A L.O VNT V 2 (25mm)	25MM
45	EFP A DIS BYP V (40MM)	40MM
46	EFP A DIS LINE VNT V (25MM)	25MM
47	EFP A DIS LINE VNT V (25MM)	25MM
48	EFP A DIS LINE VNT V (25MM)	25MM
49	EFP A DIS LINE VNT V (25MM)	25MM
50	EFP B DIS BYP V (50MM)	40MM
51	EFP B DIS VNT V (25MM)	25MM
52	EFP B DIS VNT V (25MM)	25MM
53	EFP B DIS VNT V (25MM)	25MM
54	EFP B DIS VNT V (25MM)	25MM
55	EFP C DIS VNT V (25MM)	25MM
56	EFP C DIS VNT V (25MM)	25MM
57	EFP C DIS DRN V (25MM)	25MM
58	EFP C DIS DRN V (25MM)	25MM
59	MAIN FEED WATER VENT VALVE 1 (25MM)	25MM
60	MAIN FEED WATER VENT VALVE 2 (25MM)	25MM
61	FW LINE BEFORE ORIFICE DRAIN VALVE 1 (25MM)	25MM
62	FW LINE BEFORE ORIFICE DRAIN VALVE 2 (25MM)	25MM
63	FEEDWATER LINE DRAIN VALVE 1 (25MM)	25MM
64	FEEDWATER LINE DRAIN VALVE 2 (25MM)	25MM
65	FW REG STATION A INLET VENT VALVE 1 (25MM)	25MM
66	FW REG STATION A INLET VENT VALVE 2 (25MM)	25MM
67	FW REG STATION A OUTLET VENT VALVE 1 (25MM)	25MM
68	FW REG STATION A OUTLET VENT VALVE 2 (25MM)	25MM
69	FW REG VALVE A OUTLET DRAIN VALVE 1 (25MM)	25MM
70	FW REG VALVE A OUTLET DRAIN VALVE 2 (25MM)	25MM

71	FW REG STATION B INLET VENT VALVE 1 (25MM)	25MM
72	FW REG STATION B INLET VENT VALVE 2 (25MM)	25MM
73	FW REG STATION B OUTLET VENT VALVE 1 (25MM)	25MM
74	FW REG STATION B OUTLET VENT VALVE 2 (25MM)	25MM
75	FW REG VALVE B OUTLET DRAIN VALVE 1 (25MM)	25MM
76	FW REG VALVE B OUTLET DRAIN VALVE 2 (25MM)	25MM
77	FEED WATER REG STATION A VENT VALVE 1 (25MM)	25MM
78	FEED WATER REG STATION A VENT VALVE 2 (25MM)	25MM
79	FEED WATER REG STATION B VENT VALVE 1 (25MM)	25MM
80	FEED WATER REG STATION B VENT VALVE 2 (25MM)	25MM
81	FW LINE BEFORE HP HTR 5.1 DRAIN VALVE (25MM)	25MM
82	FW LINE BEFORE HP HTR 5.1 DRAIN VALVE (25MM)	25MM
83	HP HTR 5.1 FW INLET BYPASS VALVE (25MM)	25MM
84	HP HTR 5.1 FW INLET BYPASS VALVE (25MM)	25MM
85	FW LINE BEFORE HP HTR 5.2 DRAIN VALVE (25MM)	25MM
86	FW LINE BEFORE HP HTR 5.2 DRAIN VALVE (25MM)	25MM
87	HP HTR 5.2 FW INLET BYPASS VALVE (25MM)	25MM
88	HP HTR 5.2 FW INLET BYPASS VALVE (25MM)	25MM
89	HP HTRS FW BYPASS DRAIN VALVE (25MM)	25MM
90	HP HTRS FW BYPASS DRAIN VALVE (25MM)	25MM
91	HP HTRS FW BYPASS DRAIN VALVE (25MM)	25MM
92	HP HTRS FW BYPASS DRAIN VALVE (25MM)	25MM
93	FW LINE BTWN HP HTR 5.1 & 6.1 DRAIN V/V (25MM)	25MM
94	FW LINE BTWN HP HTR 5.1 & 6.1 DRAIN V/V (25MM)	25MM
95	FW BTWN HP HTR 5.1&6.1 SFTY V/V ISOL V/V (40MM)	40MM
96	FW LINE BTWN HP HTR 5.2 & 6.2 DRAIN V/V (25MM)	25MM
97	FW LINE BTWN HP HTR 5.2 & 6.2 DRAIN V/V (25MM)	25MM
98	FW BTWN HP HTR 5.2&6.2 SFTY V/V ISOL V/V (40MM)	40MM
99	FW LINE AFTER HP HTR 6.1 DRAIN VALVE (25MM)	25MM
100	FW LINE AFTER HP HTR 6.1 DRAIN VALVE (25MM)	25MM
101	FW LINE AFTER HP HTR 6.1 VENT VALVE (15MM)	15MM
102	FW LINE AFTER HP HTR 6.1 VENT VALVE (15MM)	15MM
103	FW LINE AFTER HP HTR 6.2 DRAIN VALVE (25MM)	25MM
104	FW LINE AFTER HP HTR 6.2 DRAIN VALVE (25MM)	25MM
105	FW LINE AFTER HP HTR 6.2 VENT VALVE (15MM)	15MM
106	FW LINE AFTER HP HTR 6.2 VENT VALVE (15MM)	15MM
107	FW LINE AFTER HP HTR 6.1 & 6.2 VENT V/V (25MM)	25MM
108	FW LINE AFTER HP HTR 6.1 & 6.2 VENT V/V (25MM)	25MM
109	HP HTR 5.1 LOCAL LEVEL IND. DRAIN VALVE (8MM)	25MM
110	HP HTR 5.1 DRAIN VALVE 1 (50MM)	50MM
111	HP HTR 5.2 LOCAL LEVEL IND. DRAIN VALVE (100MM)	25MM
112	HP HTR 5.2 DRAIN VALVE 1 (50MM)	50MM

113	HP HTR 6.1 LOCAL LEVEL IND. DRAIN VALVE (100MM)	25MM
114	HP HTR 6.1 DRAIN VALVE 1 (50MM)	50MM
115	HP HTR 6.2 LOCAL LEVEL IND. DRAIN VALVE (100MM)	25MM
116	HP HTR 6.2 DRAIN VALVE 1 (50MM)	50MM
117	COND SYSTEM EFP A FILLING VV (50MM)	50MM
118	COND SYSTEM EFP B FILLING VV (50MM)	50MM
119	COND SYSTEM EFP C FILLING VV (50/40MM)	50MM
120	COND SYSTEM LP HEATER 1 INLET VV BYPASS VV (50MM)	50MM
121	COND SYSTEM LP HEATER 1 DRAIN VV (25MM)	25MM
122	COND SYSTEM LINE TO LP HEATER 1 DRAIN VV (50MM)	50MM
123	LP HEATER 2 CONDENSATE INLET VV BYPASS VV (50MM)	50MM
124	COND LINE VENT VV AFTER LP HEATER 1 (25MM)	25MM
125	COND SYSTEM LP HEATER 2 AFTER INLET VV DRAIN VV (25MM)	25MM
126	COND SYSTEM LP HEATER 1 HYDRAULIC TEST CONN ISOL VV (50MM)	50MM
127	COND SYSTEM LP HEATER 3 INLET ISOL VV BYPASS VV (50MM)	50MM
128	COND SYSTEM COND LINE VENT VV AFTER LP HEATER 2 (25MM)	25MM
129	COND LINE AFTER LP HEATER 3 INLET VV DRAIN VV (25MM)	25MM
130	COND SYSTEM LP HEATER 3 HYDRAULIC TEST CONN VV (50MM)	50MM
131	COND SYSTEM AFTER LP HEATER 3 HYDRAULIC TEST CONN VV (50MM)	50MM
132	COND LINE LP HEATER TO FWT VENT VV (25MM)	25MM
133	LP HEATER 1 LEVEL INDICATOR TOP ISOL VV (25MM)	25MM
134	LP HEATER 1 LEVEL INDICATOR BOTTOM ISOL VV (25MM)	25MM
135	LP HEATER 2 LEVEL INDICATOR TOP ISOL VV (25MM)	25MM
136	LP HEATER 2 LEVEL INDICATOR BOTTOM ISOL VV (25MM)	25MM
137	HP HTR 6.1 DRAIN VALVE 1 (25MM)	25MM
138	HP HTR 6.2 DRAIN VALVE 1 (25MM)	25MM
139	HP HTR 6.1 EMERG DIST DRAIN LINE TO FWT DRN V/V 1 (25MM)	25MM
140	HP HTR 6.1 EMERG DRAIN LINE TO FWT DRAIN VALVE 1 (25MM)	25MM
141	HP HTR 6.1 EMERG DRAIN LINE TO FWT VENT VALVE 1 (25MM)	25MM
142	HP HTR 6.2 EMERG DIST DRAIN LINE TO FWT DRN V/V 1 (25MM)	25MM
143	HP HTR 6.2 EMERG DRAIN LINE TO FWT DRAIN VALVE 1 (25MM)	25MM
144	HP HTR 6.2 EMERG DRAIN LINE TO FWT VENT VALVE 1 (25MM)	25MM
145	SEAL WATER SUPPLY ISOL VV (50MM)	50MM
146	ACC TO ACCCT NORMAL DRAIN MOTORISED V/V (800MM)	800MM
147	ACC DUMP MOTORISED V/V TO BBDS (400MM)	400MM
148	HOLDING EJER A PRIMARY DRN STEAM TRAP BYPASS V/V (40MM)	40MM
149	HOLDING EJER A PRIMARY DRN STEAM TRAP INLET ISOL V/V (40MM)	40MM
150	HOLDING EJER A PRIMARY DRN STEAM TRAP OUTLET ISOL V/V (40MM)	40MM
151	HOLDING EJER A SECONDARY LINE STEAM TRAP I/V (40MM)	40MM
152	HOLDING EJER A SECONDARY DRN STEAM TRAP BYPASS V/V (40MM)	40MM
153	HOLDING EJER A SECONDARY DRN STEAM TRAP INLET ISOL V/V (40MM)	40MM
154	HOLDING EJER A SECONDARY DRN STEAM TRAP OUTLET ISOL V/V (40MM)	40MM

155	HOLDING EJR B PRIMARY DRN STEAM TRAP INLET ISOL V/V (40MM)	40MM
156	HOLDING EJR B PRIMARY DRN STEAM TRAP OUTLET ISOL V/V (40MM)	40MM
157	HOLDING EJR B SECONDARY DRN STEAM TRAP (40MM)	40MM
158	HOLDING EJR B SECONDARY DRN BYPASS V/V (40MM)	40MM
159	HOLDING EJR SECONDARY DRN STEAM TRAP INLET ISOL V/V (40MM)	40MM
160	HOLDING EJR B SECONDARY DRN STEAM TRAP OUTLET ISOL V/V (40MM)	40MM
161	GLAND SEAL STEAM MAIN ISOL V/V (80MM)	80MM
162	GLAND SEAL STEAM WARM-UP V/V (50MM)	50MM
163	COLD REHT LINE 1 PA NRV (846MM)	846MM
164	COLD REHT LINE 2 PA NRV (846MM)	846MM
165	AUX STM TO FWT NRV	150MM
166	AUX STM TO FW NRV	150MM
167	BLED STM EXTR 5 PA NRV	350MM
168	BLED STM LPT 1 TO LP HEATER 2 PA NRV	400MM
169	BLED STM LPT 2 TO LP HEATER 2 PA NRV	400MM
170	BLED STM TO MUWDA NRV	200MM
171	BLED STM TO LPH 3 PA NRV	400MM
172	BLED STM TO FWT NRV	400MM
173	BLED STM TO FWT 1ST DISTRIBUTOR NRV	400MM
174	BLED STM TO FWT 2ND DISTRIBUTOR NRV	200MM
175	BLED STM FROM FWT LINE 1 NRV	200MM
176	BLED STM FROM FWT LINE 2 NRV	200MM
177	COND SYSTEM EFP B FILLING PIPE NRV	50MM
178	COND SYSTEM EFP C FILLING PIPE NRV	50MM
179	COND SYSTEM FILLING PUMP LEAK-OFF NRV	50MM
180	COND SYSTEM BEFORE LP HEATER 1 INLET LINE NRV	400MM
181	COND SYSTEM COND LINE TO CRT NRV	400MM
182	COND SYSTEM FWT INLET 1 NRV	400MM
183	COND SYSTEM FWT INLET 2 NRV	400MM
184	COND SYSTEM FWT EMERGENCY INLET NRV	400MM
185	HP HTR 5.1 DIST NRV	200MM
186	HP HTR 5.2 DIST NRV	200MM
187	HP HTR 6.1 EMERGENCY DRAIN NRV	200MM
188	HP HTR 6.2 EMERGENCY DRAIN NRV	200MM
189	CNDS RES TNK FLT PIP NRV	200MM
190	VAPOUR STEAM CONDENSER EXT NRV	150MM
191	FWT SAFETY VALVE 1	150MM
192	FWT SAFETY VALVE 2	150MM
193	LP BS 2A SFTY V	25MM
194	STM SFTY V 1	200MM
195	STM SFTY V 2	200MM
196	STM SFTY V 3	200MM

197	COND SYSTEM FILLING PUMP SAFETY VV	25MM
198	COND SYSTEM FROM LP HEATER 1 SAFETY VV	25MM
199	COND SYSTEM LP HEATER 2 OUTLET SAFETY VV	25MM
200	COND SYSTEM LP HEATER OUTLET 3 SAFETY VV	25MM
201	SEAL WATER SUPPLY PRESSURE REGULATING VV	50mm
202	HOLDING EJR A CONDENSER SAFETY V/V	25MM
203	HOLDING EJR B CONDENSER SAFETY V/V	25MM
204	HP/IP TURBINE CASING HEATING SAFETY V/V	25MM
205	VAPOUR STEAM COND SAFETY V/V	25MM
206	FLD HTR SFTY V	25MM
207	FORCED COOLING SYST PRESSURE RELIEF VALVE (25mm)	25MM
208	EMERGENCY DEMIN MAKE-UP TO ACCCT INCHING VV (300/6MM)	300MM
209	ACC GROUP 21AIR EXTR MOTORIZED ISOL V/V (150MM)	150MM
210	ACC GROUP 23AIR EXTR MOTORIZED ISOL V/V (150MM)	150MM
211	ACC GROUP 24AIR EXTR MOTORIZED ISOL V/V (150MM)	150MM
212	ACC GROUP 31AIR EXTR MOTORIZED ISOL V/V (150MM)	150MM
213	ACC GROUP 32AIR EXTR MOTORIZED ISOL V/V (150MM)	150MM
214	ACC GROUP 33AIR EXTR MOTORIZED ISOL V/V (150MM)	150MM
215	ACC GROUP 34AIR EXTR MOTORIZED ISOL V/V (150MM)	150MM
216	GLAND STEAM LEAK-OFF CONTROL V/V (200MM)	200MM
217	EFP A SUC V (350MM)	350MM
218	EFP B SUC V (350MM)	350MM
219	EFP C SUC V (350MM)	350MM
220	EFP A DIS V (300MM)	300MM
221	EFP B DIS V (300MM)	300MM
222	EFP C DIS V (300MM)	300MM
223	HP HTR 5.1 FW INLET ISOL VALVE (300MM)	300MM
224	HP HTR 5.2 FW INLET ISOL VALVE (300MM)	300MM
225	HP HTR BYPASS ISOL VALVE (300MM)	300MM
226	HP HTR 6.1 FW OUTLET ISOL VALVE (300MM)	300MM
227	HP HTR 6.2 FW OUTLET ISOL VALVE (300MM)	300MM
228	HOGGING EJR A STEAM INL V (250MM)	200MM
229	HOGGING EJR B STEAM INL V (250MM)	200MM
230	HOLDING EJR A STEAM INL V (50MM)	50MM
231	HOLDING EJR B STEAM INL V (50MM)	50MM
232	BLED STM TO HP HTR 5.1 MOTORIZED I/V (300MM)	300MM
233	BLED STM TO HP HTR 5.2 MOTORIZED I/V (300MM)	300MM
234	BLED STM TO HP HTR 6.1 MOTORIZED I/V (200MM)	200MM
235	BLED STM TO HP HTR 6.2 MOTORIZED I/V (200MM)	200MM
236	LP TURBINE 1 VACUUM BREAKER (350MM)	350MM
237	LP TURBINE 2 VACUUM BREAKER (350MM)	350MM
238	FWT DRAIN TO BLOW DOWN VALVE ISOL VALVE (200MM)	200MM
239	FWT DRAIN TO BLOWDOWN VESSEL INLET VALVE 150MM)	150MM

240	FWT VENT VALVE (150MM)	150MM
241	STM TO FW TNK IV (100MM)	150MM
242	COND SYSTEM HOLDING EJR A COND INLET ISOL VV (400MM)	400MM
243	HOLDING EJR B CONDENSER INLET ISOL VV (400MM)	400MM
244	COND SYSTEM LP HEATER 1 INLET ISOL VV (300MM)	300MM
245	COND SYSTEM LP HEATER 1 BYPASS ISOL VV (40MM)	40MM
246	COND SYSTEM LP HEATER 1 OUTLET ISOL VV (300MM)	300MM
247	COND SYSTEM LP HEATER 2 INLET ISOL VV (300MM)	300MM
248	COND SYSTEM LP HEATER 2 BYPASS ISOL VV (40MM)	40MM
249	COND SYSTEM LP HEATER 2 OUTLET ISOL VV (40MM)	40MM
250	COND SYSTEM LP HEATER 3 INLET ISOL VV (300MM)	300MM
251	COND SYSTEM LP HEATER 3 BYPASS VV (40MM)	40MM
252	COND SYSTEM LP HEATER 3 OUTLET ISOL VV (400MM)	400MM
253	FORCED COOLING SYSTEM MOTOR I/V (150MM)	150MM
254	EFP B SUC LINE VNT V	25MM
255	EFP C SUC LINE VNT V	25MM
256	EFP A LINE DRN V	25MM
257	EFP B LINE DRN V	25MM
258	EFP C LINE DRN V	25MM
259	FW REG A INLINE BYP V	25MM
260	FW REG B INLINE BYP V	25MM
261	HP HTR 5.1 VENT V/V	50MM
262	HP HTR 5.1 DRAIN V/V	50MM
263	HP HTR 5.1 DRAIN V/V 2	50MM
264	HP HTR 5.2 VENT V/V	25MM
265	HP HTR 5.2 DRAIN V/V	25MM
266	HP HTR 5.2 DRAIN V/V 2	25MM
267	HP HTR 6.1 VENT V/V	25MM
268	HP HTR 6.1 DRAIN V/V	25MM
269	HP HTR 6.1 DRAIN V/V 2	25MM
270	HP HTR 6.2 VENT V/V	25MM
271	HP HTR 6.2 DRAIN V/V	25MM
272	HP HTR 6.2 DRAIN V/V 2	25MM
273	AUX STM TO FWT DRN V	25MM
274	AUX STM TO EJEC DRN V	25MM
275	CEP SUCTION MANIFOLD DRN V/V	25MM
276	CEP A DRN V/V	25MM
277	CEP B DRN V/V	25MM
278	FILLING PP DRN V	25MM
279	CEP A DISCH LINE DRN V/V AFTER NRV	25MM
280	CEP B DISCH LINE DRN V/V AFTER NRV	25MM
281	COND FILL PMP DISCH DRN V/V	25MM
282	COND LINE VENT V/V AFTER CEP	25MM
283	COND LINE FROM LPH TO FWT VENT V/V	25MM
284	COND SYST LINE DRN V/V AFTER VSC	25MM
285	COND LINE DRN V/V AFTER VSC	25MM

286	COND LINE DRN V/V BEFORE ACCCT REG V/V	25MM
287	COND SYS LINE DRN V/V TO LPH 1&2	25MM
288	COND LINE TO LPH 1 DRN V/V	25MM
289	COND LINE TO CRT DRN V/V	25MM
290	COND LINE TO LPH 2&3 DRN V/V	25MM
291	COND LINE VENT V/V AFTER LPH 3	25MM
292	COND LINE FROM LPH 3 DRN TO FWT	25MM
293	LPH 1 STAND PIPE DRN V/V	25MM
294	LPH 1 STANDPIPE VENT V/V	25MM
295	LPH 3 STANDPIPE DRN V/V	25MM
296	LPH 3 STANDPIPE VENT V/V	25MM
297	LPH 2 STANDPIPE VENT V/V	25MM
298	LPH 2 STANDPIPE DRN V/V	25MM
299	LP BYPASS SPRAY WATER DRN V/V	25MM
300	LP BYPASS SPRAY WATER DRN V/V	25MM
301	LP HOODSPRAY CONTROL V/V	100MM
302	HPH 5.1 VENT V/V	25MM
303	HPH 5.1 LINE TO FWT DRN V/V	25MM
304	HPH 5.2 DIST DRN LINE TO DFT DRN V/V	25MM
305	HPH 5.2 DRAIN V/V	25MM
306	HPH 5.2 LINE TO FWT VENT V/V	25MM
307	HP HTR 5.2 DRAIN LINE SAMPLING POINT	25MM
308	HPH 5.1 EM DRN LINE TO DFT DRN V/V	25MM
309	HPH 5.2 EM DRN LINE TO DFT DRN V/V	25MM
310	HPH 5.2 EM DRN V/V 2	25MM
311	HPH 6.1 DISCH DRN V/V	25MM
312	HPH DRN LINE TO FWT DRN V/V	25MM
313	HPH VENT V/V	25MM
314	HPH DRN LINE TO FWT DRN V/V	25MM
315	HPH VENT V/V	25MM
316	TCT HYDRAULIC TEST CONNECT ISOL V/V	25MM
317	LPH 1 DRN V/V TO FUNNEL	25MM
318	LPH 1 DRN PMP B DISCH LINE DRN V/V	25MM
319	LPH PMP COMMON LINE LEAK OFF DRN V/V	25MM
320	LP HEATER 2 EMERGENCY DRAIN TO DFT TANK LINE DRAIN VV	25MM
321	LP HEATER 3 EMERGENCY DRAIN TO DFT DRAIN VV	25MM
322	TCT STANDPIPE VENT V/V	25MM
323	TCT STANDPIPE DRN V/V	25MM
324	TCT STANDPIPE DRN V/V	25MM
325	TCT STANDPIPE VENTV/V	25MM
326	TCT DRN V/V	25MM
327	A CTP DRN V/V	25MM
328	A CTP DRN AFTER DISCH ISOL V/V	25MM
329	B CTP DRN V/V	25MM
330	B CTP DRN AFTER DISCH ISOL V/V	25MM
331	C CTP DRN V/V	25MM

332	C CTP COND DRN V/V AFTER DISCH V/V	25MM
333	CNDS TRF PP C DRN V	25MM
334	C CTP DISCH VENT V/V	25MM
335	CTP A&B DISCH VENT V/V	25MM
336	CRT FILL LINE DRN V/V	25MM
337	COND LINE DRN V/V BEF CRP SUCT ISOL V/V	25MM
338	COND LINE VENT V/V BEF CRP SUCT ISOL V/V	25MM
339	COND VENT V/V BEFORE TCT	25MM
340	HP TURBINE STOP & REG VV 1 & 3 WRM MOT DRN V/V	100MM
341	HP TURBINE STOP & REG VV 1 & 3 WRM HAND DRN IV	25MM
342	HP TURBINE STOP & REG V/V 2 & 4 WRM MOT DRN V/V	100MM
343	HP TURBINE STOP & REG V/V 2 & 4 WRM HAND DRN I/V	25MM
344	HP TURBINE MOTORISED DRN VV AFT ESV & CONT VV	25MM
345	HP TURBINE DRN AFT ESV & CONT VV STM TRAP I/V	25MM
346	IP TURBINE ESV & CONT V/V 1 & 3 WRM MOT DRN V/V	25MM
347	IP TURBINE ESV & CONT V/V 1 & 3 WRM DRN HAND I/V	25MM
348	IP TURBINE ESV & CONT V/V 2 & 4 WRM MOT DRN V/V	25MM
349	IP TURBINE ESV & CONT V/V 2 & 4 WRM DRN HAND I/V	25MM
350	IP TURBINE AFTER ESV & CONT V/V'S MOT DRN V/V	25MM
351	ACCCT LEVEL TX MAIN I/V 1 (CL001)	40MM
352	ACCCT LEVEL TX MAIN I/V 2 (CL001)	40MM
353	ACCCT LEVEL TX MAIN I/V 1 (CL002)	40MM
354	ACCCT LEVEL TX MAIN I/V 2 (CL002)	40MM
355	ACCCT LEVEL TOP I/V (CL003)	40MM
356	ACCCT LEVELTRX I/V (CL003)	40MM
357	ACCCT NORTH STANDPIPE 1 TOP I/V	40MM
358	ACCCT NORTH STANDPIPE 1 BOT I/V	40MM
359	ACC DUMP MOTORISED V/V TO BBDS	800MM
360	HOGGING EJER A MOTORIZED AIR V/V	500MM
361	HOGGING EJER B MOTORIZED AIR V/V	500MM
362	HOLDING EJER A MOTORIZED V/V	100MM
363	HOLDING EJER B MOTORIZED AIR V/V	100MM
364	HP CASE HTR IV	100MM
365	DRAIN V/V TO FUNNEL	25MM
366	VSC DRAIN V/V	25MM
367	VSC CONDENSATE VENT V/V	25MM
368	GLAND STEAM DRN	25MM
369	EFP A DIS NRV	300MM
370	EFP B DIS NRV	300MM
371	EFP C DIS NRV	300MM
372	EFP A REHEAT SPRAY WATER NRV	80MM
373	EFP B REHEAT SPRAY WATER NRV	80MM
374	EFP C REHEAT SPRAY WATER NRV	80MM
375	LP BS 4 NRV	400MM
376	HP CASE HTG CHCK V	100MM
377	IP TURBINE ROTOR COOLING NRV	40MM

378	FW BTWN HP HTR 5.1 & 6.1 SAFETY VALVE 1	25MM
379	FW BTWN HP HTR 5.1 & 6.1 SAFETY VALVE 2	25MM
380	FW BTWN HP HTR 5.2 & 6.2 SAFETY VALVE 1	25MM
381	FW BTWN HP HTR 5.2 & 6.2 SAFETY VALVE 2	25MM
382	HP HTR 5.1 STEAM SAFETY VALVE	25MM
383	HP HTR 5.2 STEAM SAFETY VALVE	25MM
384	HP HTR 6.1 STEAM SAFETY VALVE	25MM
385	HP HTR 6.2 STEAM SAFETY VALVE	25MM
386	GLAND STEAM CCT OFL SAFETY V/V	25MM
387	FLD CONDIT SFTY V 1(Work to be done by Either ROttek TGS or Rotek Valves)	25MM
388	FLD CONDIT SFTY V 2(Work to be done by Either ROttek TGS or Rotek Valves)	25MM
389	COND SYSTEM FWT EMERGENCY INLET VV	300MM
390	LP HEATER 1 EMERGENCY DRAIN VV	300MM
391	MFW IV	450mm
392	FW REG A INLET IV	300MM
393	FW REG B INLET IV	300MM
394	EFP A REHEAT SPRAY WATER INLET VALVE	80mm
395	EFP B REHEAT SPRAY WATER ISOL VALVE	80mm
396	EFP C REHEAT SPRAY WATER ISOL VALVE	80mm
397	TURBINE HOUSE AUXILIARY STEAM SUPPLY I/V	kulkoni
398	AUX STM SUPL IV	250mm
399	STM TO FWT IV	250MM
400	LP BS 4 IV	400MM
401	FWT DRAIN TO BLOWDOWN VESSEL INLET VALVE	150MM
402	AUX STM TO FW TNK IV	250MM
403	AUX STM TO EJEC IV	200MM
404	LP HEATER DRAINPUMP A INLET ISOL VV	200MM
405	LP HEATER DRAIN PUMP B INLET ISOL VV	200MM
406	LP HEATER DRAIN PUMP A DISCHARGE ISOL VV	300MM
407	LP HEATER DRAIN PUMP B DISCHARGE ISOL VV	100MM
408	LP HEATER DRAIN PUMP A LEAK-OFF ISOL VV	200MM
409	LP HEATER DRAIN PUMP 2 LEAK-OFF ISOL VV	300MM
410	COND TRANSFER PUMP A SUCTION ISOL VV	150MM
411	COND TRANSFER PUMP B SUCTION ISOL VV	200MM
412	COND TRANSFER PUMP A DISCHARGE ISOL VV	150MM
413	COND TRANSFER PUMP B DISCHARGE ISOL VV	200MM
414	COND TRANSFER PUMP C TO BLOW DOWN SUMP INCHING VV	200MM
415	COND LINE DRN VALVE TO LPH 1&2	50MM
416	HPH 6 DISCH DRN TO HPH 5.1 DRN VALVE	50MM
417	SEAL WATER SUPPLY PRESSURE REG VALVE	50MM
418	FORCED COOLING SYSTEM PRESSURE RELIEF VALVE	25MM
419	EFP A LOV 1	65MM
420	EFP A LOV 2	65MM
421	EFP B LOV 1	65MM
422	EFP B LOV 2	65MM
423	EFP C LOV 1	65MM

424	EFP C LOV 2	65MM
425	FEEDWATER REG VALVE A	300MM
426	FEEDWATER REG VALVE B	300MM
427	EJECTOR CONDENSERS TO ACCCT CONDENSATE REG V	25MM
428	EMERGENCY MAKE UP CONTROL VALVE	300MM
429	DEMIN MAKE UP TO STATOR COOLANT ISOL VALVE	300MM

MATIMBA BOILER VALVES GO/MGO/IR (291)		
QIP	DESCRIPTION	VV SIZE
1	EVAPORATOR DRAIN VALVE(80MM)SEMPEL GATE	80MM
2	EVAP. DRAIN I/V TO BBDV(80MM)SEMPELL SEREG GATE	80MM
3	EVAPORATOR FEEDING HEADER DRAIN VALVE 1(50MM)SEMPELL GLOBE	50MM
4	EVAPORATOR FEEDING HEADER DRAIN VALVE 2(50MM)SEMPELL GLOBE	50MM
5	ECONOMISER VENT VALVE TO STATION DRAIN(50MM)SEMPELL GLOBE	25MM
6	ECONOMISER VENT VALVE TO STATION DRAIN(50MM)SEMPELL GLOBE	25MM
7	ECONOMISER VENT VALVE TO STATION DRAIN(50MM)SEMPELL GLOBE	25MM
8	EVAPORATOR VENT VALVE A(40MM)SEMPELL GLOBE	50MM
9	EVAPORATOR VENT VALVE A(40MM)SEMPELL GLOBE	50MM
10	EVAPORATOR VENT VALVE B(40MM)SEMPELL GLOBE	50MM
11	EVAPORATOR VENT VALVE B I/V 2(40MM)SEMPELL GLOBE	50MM
12	COLLECT VESSEL LEVEL 1 ISOLATING V/V 1(25MM)SEMPELL GLOBE	25MM
13	COLLECT VESSEL LEVEL 1 ISOLATING V/V 2(25MM)SEMPELL GLOBE	25MM
14	COLLECT VESSEL LEVEL 2 ISOLATING V/V 1(25MM)SEMPELL GLOBE	25MM
15	COLLECT VESSEL LEVEL 2 ISOLATING V/V 2(25MM)SEMPELL GLOBE	25MM
16	COLLECT VESSEL LEVEL 3 ISOLATING V/V 2(25MM)SEMPELL GLOBE	25MM
17	COLLECT VESSEL LEVEL 3 ISOLATING V/V 3(25MM)SEMPELL GLOBE	25MM
18	COLLECT VESSEL LEVEL 3 ISOLATING V/V 3(25MM)SEMPELL GLOBE	25MM
19	COLLECT VESSEL LEVEL 4 ISOLATING V/V 1(25MM)SEMPELL GLOBE	25MM
20	COLLECT VESSEL LEVEL 4 ISOLATING V/V 2(25MM)SEMPELL GLOBE	25MM
21	STORAGE VESSEL TO RECIRCULATING PUMP I/V	350MM
22	STORAGE VESSEL TO RECIRC PUMP BYPASS I/V	50MM
23	ECONOMISER MIN FLOW I/V 160MM	350MM
24	ECONOMISER MINIMUM FLOW REG. VALVE BYPASS	50MM
25	RECIRCULATING PUMP CHECK VALVE 160MM	300MM
26	CIRCULATING PUMP MIN FLOW I/V 160MM	125MM
27	CIRC. LINE DRAIN TO SEWER I/V 1 50MM	
28	WARMING PIPE TO MIX PIECE NRV 50MM	25MM
29	COLLECTING VESSEL SUBCOOLING I/V 50MM	50MM

30	STORAGE VESSEL BLOWDOWN HIGH FLOW BYP 1 /VALVE 50MM	50MM
31	STORAGE VESSEL BLOWDOWN LOW FLOW BYP I/VALVE 50MM	50MM
32	STORAGE VESSEL BLOWDOWN HIGH FLOW I/V 50MM	250MM
33	STORAGE VESSEL BLOWDOWN HIGH FLOW I/V 50MM	250MM
34	STORAGE VESSEL OUTLET HYD VENT VALVE A(40MM)SEMPELL GLOBE	50MM
35	STORAGE VESSEL OUTLET HYD VENT MAN. VALVE A(40MM)SEMPELL GLOBE	50MM
36	STORAGE VESSEL OUTLET HYD VENT VALVE B(40MM)SEMPELL GLOBE	50MM
37	STORAGE VESSEL OUTLET HYD VENT MAN. VALVE B(40MM)SEMPELL GLOBE	50MM
38	ATTEMPERATOR NO1 DRAIN VALVE(50MM)SEMPELL GLOBE	50MM
39	ATTEMPERATOR NO1 DRAIN MAN. VALVE(50MM)SEMPELL GLOBE	50MM
40	S/HEATER NO1 OUTLET HEADER DRAIN VALVE(50MM)SEMPELL GLOBE	50MM
41	S/HEATER NO1 OUTLET HYD DRAIN MAN. VALVE(50MM)SEMPELL GLOBE	50MM
42	S/HEATER 3 INLET HEADER VENT VALVE A(40MM)SEMPELL GLOBE	50MM
43	S/HEATER 3 INLET HYD VENT MAN VALVE A(40MM)SEMPELL GLOBE	50MM
44	S/HEATER 3 INLET HEADER VENT VALVE B(40MM)SEMPELL GLOBE	50MM
45	S/HEATER 3 INLET HYD VENT MAN VALVE B(40MM)SEMPELL GLOBE	50MM
46	S/HEATER 4 INLET HEADER DRAIN VALVE A(50MM)SEMPELL GLOBE	50MM
47	S/HEATER 4 INLET HYD DRAIN MAN VALVE A(50MM)SEMPELL GLOBE	50MM
48	S/HEATER 4 INLET HEADER DRAIN VALVE B(50MM)SEMPELL GLOBE	50MM
49	S/HEATER 4 INLET HEADER DRAIN VALVE B(50MM)SEMPELL GLOBE	50MM
50	S/HEATER 4 INLET HEADER DRAIN VALVE C(50MM)SEMPELL GLOBE	50MM
51	S/HEATER 4 INLET HYD DRAIN MAN VALVE C(50MM)SEMPELL GLOBE	50MM
52	S/HEATER 4 INLET HEADER DRAIN VALVE D(50MM)SEMPELL GLOBE	50MM
53	S/HEATER 4 INLET HEADER MAN VALVE D(50MM)SEMPELL GLOBE	50MM
54	S/HEATER 4 OUTLET HEADER VENT VALVE A(50MM)SEMPELL GLOBE	50MM
55	S/HEATER 4 OUTLET HYD VENT MAN VALVE A(50MM)SEMPELL GLOBE	50MM
56	S/HEATER 4 OUTLET HEADER VENT VALVE B(50MM)SEMPELL GLOBE	50MM
57	S/HEATER 4 OUTLET HYD VENT MAN VALVE B(50MM)SEMPELL GLOBE	50MM
58	REHEATER 1 INLET HAEDER VENT VALVE A(40MM)SEMPELL GLOBE	50MM
59	RH 1 INLET HEADER VENT I/V A(40MM)SEMPELL GLOBE	50MM
60	REHEATER 1 INLET HEADER VENT VALVE B(40MM)SEMPELL GLOBE	50MM
61	REHEATER 1 INLET HEADER VENT VALVE B(40MM)SEMPELL GLOBE	50MM
62	REHEATER 2 INLET HEADER DRAIN VALVE A(50MM)SEMPELL GLOBE	50MM
63	REHEATER 2 INLET HEADER DRAIN I/V A(50MM)SEMPELL GLOBE	50MM
64	REHEATER 2 INLET HEADER DRAIN VALVE B(50MM)SEMPELL GLOBE	50MM
65	REHEATER 2 INLET HEADER DRAIN I/V B(50MM)SEMPELL GLOBE	50MM
66	REHEATER 2 INLET HEADER DRAIN VALVE C(50MM)SEMPELL GLOBE	50MM
67	REHEATER 2 INLET HEADER DRAIN I/V C(50MM)SEMPELL GLOBE	50MM
68	REHEATER 2 INLET HEADER DRAIN VALVE D(50MM)SEMPELL GLOBE	50MM
69	REHEATER 2 INLET HEADER DRAIN I/V D(50MM)SEMPELL GLOBE	50MM
70	REHEATER 2 OUTLET HEADER VENT VALVE A(40MM)SEMPELL GLOBE	50MM

71	REHEATER 2 OUTLET HEADER VENT ISOLATING VALVE A(40MM)SEMPELL GLOBE	50MM
72	REHEATER 2 OUTLET HEADER VENT VALVE B(40MM)SEMPELL GLOBE	50MM
73	REHEATER 2 OUTLET HEADER VENT ISOLATING VALVE B(40MM)SEMPELL GLOBE	50MM
74	HP BYPASS WARMING LINE ISOLATING VALVE 1(25MM)SEMPELL GLOBE	25MM
75	HP BYPASS WARMING LINE ISOLATING VALVE 2(25MM)SEMPELL GLOBE	25MM
76	HP BYPASS WARMING LINE ISOLATING VALVE 3(25MM)SEMPELL GLOBE	25MM
77	HP BYPASS WARMING LINE ISOLATING VALVE 4(25MM)SEMPELL GLOBE	25MM
78	BLOWDOWN SUMP MAN DRAIN I/V(300MM)V/V MAKERS KNIFE	300MM
79	BBDV SUMP DRAIN VALVE(300MM)V/V MAKERS KNIFE	300MM
80	HP AUX STEAM DRAIN STATION TO BBDV NRV(80MM)SEREG CHECK	80MM
81	MP AUX STEAM DRAIN STATION TO BBDV NRV(80MM)SEREG CHECK	80MM
82	SOOTBLOWER DRAIN TO BBDV NRV(125MM)SEREG CHECK	125MM
83	S/HEATER DRAIN STATION TO BLOWDOWN VESSEL I/V2 (100MM)SEMPELL CHECK	100MM
84	REHEATER DRAIN STATION TO BBDV NRV(100MM)SEMPELL CHECK	100MM
85	REHEATER DRAIN STATION DRAIN TO BDV NRV(125MM)SEREG GATE	125MM
86	SOOTBLOWER DRAIN STATION TO BBDV NRV(80MM)SEREG CHECK	80MM
87	SOOTBLOWER DRAIN STATION TO BBDV NRV(80MM)SEREG CHECK	80MM
88	SOOTBLOWER DRAIN STATION TO BBDV NRV(80MM)SEREG CHECK	80MM
89	SOOTBLOWER DRAIN STATION TO BBDV NRV(80MM)SEREG CHECK	80MM
90	BOILER SOOTBLOWER STEAM I/V(150MM)SEREG CHECK	150MM
91	SECONDARY AIRHEATER SOOTBLOWER STEAM PRES IV(150MM)SEREG GATE	150MM
92	RH SECONDARY AIRHEATER SOOTBLOWER 1 I/V(150MM)SEREG GATE	150MM
93	LH SECONDARY AIRHEATER SOOTBLOWER 1 I/V(150MM)SEREG GATE	150MM
94	RH SECONDARY AIRHEATER SOOTBLOWER 2 I/V(150MM)SEREG GATE	150MM
95	LH SECONDARY AIRHEATER SOOTBLOWER 2 I/V(150MM)SEREG GATE	150MM
96	SUPERHEATER SOOTBLOWER SUPPLY VALVE A(150MM)SEREG GATE	150MM
97	SUPERHEATER SOOTBLOWER SUPPLY VALVE B(150MM)SEREG GATE	150MM
98	FURNACE SOOTBLOWER SUPPLY VALVE A(150MM)SEREG GATE	150MM
99	FURNACE SOOTBLOWER SUPPLY VALVE B(150MM)SEREG GATE	150MM
100	FRONT FURNACE SOOTBLOWER DRAIN VALVE(50MM)SEMPELL GLOBE	50MM
101	RH FURNACE SOOTBLOWER DRAIN VALVE(50MM)SEMPELL GLOBE	50MM
102	LH FURNACE SOOTBLOWER DRAIN VALVE(50MM)SEMPELL GLOBE	50MM
103	REAR FURNACE SOOTBLOWER DRAIN VALVE(50MM)SEMPELL GLOBE	50MM
104	SU/ HEATER RH SOOTBLOWER DRAIN VALVE A(50MM)SEMPELL GLOBE	50MM
105	S/ HEATER RH SOOTBLOWER DRAIN VALVE B(50MM)SEMPELL GLOBE	50MM
106	S/ HEATER LH SOOTBLOWER DRAIN VALVE A(50MM)SEMPELL GLOBE	50MM
107	SUPER HEATER LH SOOTBLOWER DRAIN VALVE B(50MM)SEMPELL GLOBE	50MM
108	AIR HEATER SOOTBLOWER STATION DRAIN(25MM)SEMPELL GLOBE	25MM
109	AIR HEATER SOOTBLOWER STATION DRAIN(25MM)GESTRA S/TRAP	25MM

110	LH SECONDARY AIR HEATER SOOTBLOWER DRAIN VALVE(50MM)SEPELL GLOBE	50MM
111	RH SECONDARY AIR HEATER SOOTBLOWER DRAIN VALVE(50MM)SEPELL GLOBE	50MM
112	ECONOMISER MOTORISED DRAIN VALVE(80MM)SEREG GATE	80MM
113	ECONOMISER MANUAL I/V(80MM)SEREG GATE	80MM
114	ECONOMISER INLET FLOW 1 I/V 1 (10MM)SEPELL GLOBE	10MM
115	ECONOMISER INLET FLOW 2 I/V 1 (10MM)SEPELL GLOBE	10MM
116	ECONOMISER INLET FLOW 2 I/V 2 (10MM)SEPELL GLOBE	10MM
117	ECONOMISER INLET FLOW 2 I/V 2 (10MM)SEPELL GLOBE	10MM
118	ECONOMISER INLET FLOW 2 I/V 2 (10MM)SEPELL GLOBE	10MM
119	HP BYPASS SPRAYWATER 2 I/V 2(50MM)SEPELL GLOBE	50MM
120	HP BYPASS SPRAYWATER 3 I/V 2(50MM)SEPELL GLOBE	50MM
121	SH 2 SPRAYWATER 1 MOTORISED I/V 1(50MM)SEPELL GLOBE	50MM
122	SH 2 SPRAYWATER 1 MANUAL I/V 1(50MM)SEPELL GLOBE	50MM
123	SPRAYWATER MOTORISED I/V(50MM)SEPELL GATE	50MM
124	SPRAYWATER MANUAL I/V(50MM)SEPELL GATE	50MM
125	SH 2 SPRAYWATER 2 MOTORISED I/V 2(50MM)SEPELL GLOBE	50MM
126	SH 2 SPRAYWATER 2 MANUAL I/V 2(50MM)SEPELL GLOBE	50MM
127	SPRAYWATER MOTORISED I/V(50MM)SEPELL GATE	50MM
128	SPRAYWATER MOTORISED I/V(50MM)SEPELL GATE	50MM
129	SH 2 SPRAYWATER 3 MOTORISED I/V 3(50MM)SEPELL GLOBE	50MM
130	SH 2 SPRAYWATER 3 MANUAL I/V 3(50MM)SEPELL GLOBE	50MM
131	SPRAYWATER MOTORISED I/V(50MM)SEPELL GATE	50MM
132	SPRAYWATER MOTORISED I/V(50MM)SEPELL GATE	50MM
133	SH 2 SPRAYWATER 4 MOTORISED I/V 4(50MM)SEPELL GLOBE	50MM
134	SH 2 SPRAYWATER 4 MANUAL I/V 4(50MM)SEPELL GLOBE	50MM
135	SH 2 SPRAYWATER 4 I/V 4(50MM)SEPELL GLOBE	50MM
136	SPRAYWATER MOT I/V(50MM)SEPELL GATE	50MM
137	SH 3 SPRAYWATER 1 MOTORISED I/V 1(80MM)SEREG GATE	80MM
138	SH 3 SPRAYWATER 1 MOT I/V 1(80MM)SEREG GATE	80MM
139	SH 3 SPRAYWATER 2 MOTORISED I/V 2(80MM)SEREG GATE	80MM
140	SH 3 SPRAYWATER 2 MANUAL I/V 2(80MM)SEREG GATE	80MM
141	SH 3 SPRAYWATER 3 MOTORISED I/V 3(80MM)SEREG GATE	80MM
142	SH 3 SPRAYWATER 3 MANUAL I/V 3(80MM)SEREG GATE	80MM
143	SH 3 SPRAYWATER 4 MOTORISED I/V 4(80MM)SEREG GATE	80MM
144	SH 3 SPRAYWATER 4 MANUAL I/V 4(80MM)SEREG GATE	80MM
145	SH 4 SPRAYWATER 1 MOTORISED I/V 1(50MM)SEPELL GLOBE	50MM
146	SH 4 SPRAYWATER 1 MOTORISED I/V 2(40MM)SEPELL GLOBE	40MM
147	SH 4 SPRAYWATER 1 MANUAL I/V 1(50MM)SEPELL GLOBE	50MM
148	SH 4 SPRAYWATER 1 MANUAL I/V 2(40MM)SEPELL GLOBE	40MM
149	SUPERHEATER 4 SPRAYWATER 2 MOTORISED I/V 3(50MM)SEPELL GLOBE	50MM
150	SUPERHEATER 4 SPRAYWATER 2 MOTORISED I/V 4(40MM)SEPELL GLOBE	40MM
151	SUPERHEATER 4 SPRAYWATER 2 MANUAL I/V 1(50MM)SEPELL GLOBE	50MM
152	SUPERHEATER 4 SPRAYWATER 2 MANUAL I/V 2(40MM)SEPELL GLOBE	40MM

153	SH 4 SPRAYWATER 3 MOTORISED I/V 5(50MM)SEMPELL GLOBE	50MM
154	SH 4 SPRAYWATER 3 MOTORISED I/V 6(40MM)SEMPELL GLOBE	40MM
155	SH 4 SPRAYWATER 3 MOTORISED I/V 7(50MM)SEMPELL GLOBE	50MM
156	SH 4 SPRAYWATER 3 MOTORISED I/V 2(40MM)SEMPELL GLOBE	40MM
157	SH 4 SPRAYWATER 4 MOTORISED I/V 7(50MM)SEMPELL GLOBE	50MM
158	SUPERHEATER 4 SPRAYWATER ISOLATING VALVE 8(40MM)SEMPELL GLOBE	40MM
159	SH 4 SPRAYWATER 4 MANUAL I/V 1(50MM)SEMPELL GLOBE	50MM
160	SH 4 SPRAYWATER 4 MANUAL I/V 2(40MM)SEMPELL GLOBE	40MM
161	HP S/WATER NRV DRN IV 50MM	50MM
162	HP SPRAYWATER INJECTION I/V 16MM	16MM
163	RH 2 SPRAYWATER 1A MOTORISED I/V 1(25MM)SEMPELL GLOBE	25MM
164	RH 2 SPRAYWATER 1B MOTORISED I/V 2(25MM)SEMPELL GLOBE	25MM
165	RH 2 SPRAYWATER 1A MANUAL I/V 1(25MM)SEMPELL GLOBE	25MM
166	RH 2 SPRAYWATER 1B MANUAL I/V 2(25MM)SEMPELL GLOBE	25MM
167	RH 2 SPRAYWATER 2A MOTORISED I/V 1(25MM)SEMPELL GLOBE	25MM
168	RH 2 SPRAYWATER 2B MOTORISED I/V 1(25MM)SEMPELL GLOBE	25MM
169	RH 2 SPRAYWATER 2A MANUAL I/V 2(25MM)SEMPELL GLOBE	25MM
170	RH 2 SPRAYWATER 2B MANUAL I/V 2(25MM)SEMPELL GLOBE	25MM
171	RH 2 SPRAYWATER 3A MOTORISED I/V 1(25MM)SEMPELL GLOBE	25MM
172	RH 2 SPRAYWATER 3B MOTORISED I/V 1(25MM)SEMPELL GLOBE	25MM
173	RH 2 SPRAYWATER 3A MANUAL I/V 2(25MM)SEMPELL GLOBE	25MM
174	RH 2 SPRAYWATER 3B MANUAL I/V 2(25MM)SEMPELL GLOBE	25MM
175	RH 2 SPRAYWATER 4A MOTORISED I/V 1(25MM)SEMPELL GLOBE	25MM
176	RH 2 SPRAYWATER 4B MOTORISED I/V 1(25MM)SEMPELL GLOBE	25MM
177	RH 2 SPRAYWATER 4A MANUAL I/V 2(25MM)SEMPELL GLOBE	25MM
178	RH 2 SPRAYWATER 4B MANUAL I/V 2(25MM)SEMPELL GLOBE	25MM
179	HP - BYP 2 HP STEAM PRESSURE 1 I/V(25MM)SEMPELL GATE	25MM
180	HP - BYP 2 HP STEAM PRESSURE 2 I/V(25MM)SEMPELL GATE	25MM
181	HP - BYP 2 HP STEAM PRESSURE 3 I/V(25MM)SEMPELL GATE	25MM
182	HP - BYP 3 HP STEAM PRESSURE 1 I/V(25MM)SEMPELL GATE	25MM
183	HP - BYP 3 HP STEAM PRESSURE 2 I/V(25MM)SEMPELL GATE	25MM
184	HP - BYP 3 HP STEAM PRESSURE 3 I/V(25MM)SEMPELL GATE	25MM
185	COLD REHEAT PIPE WARMING ISOLATING VALVE 1 (150MM)	150MM
186	COLD REHEAT PIPE WARMING ISOLATING VALVE 2 (150MM)	150MM
187	TURBINE MAINSTEAM HEADER 1 VENT I/VALVE (80MM)	80MM
188	TURBINE VENT HEADER 2 MOTORIZED I/VALVE (80MM)	80MM
189	MAIN STEAM STOP VALVE 1 (300MM)	300MM
190	MAIN STEAM STOP VALVE 1 BYPASS I/V (100MM)	100MM
191	MAIN STEAM STOP VALVE 2 (300MM)	300MM
192	MAIN STEAM STOP VALVE 2 BYPASS I/V (100MM)	100MM
193	MAIN STEAM STOP VALVE 3 (300MM)	300MM
194	MAIN STEAM STOP VALVE 3 BYPASS I/V (100MM)	100MM
195	MAIN STEAM STOP VALVE 4 (300MM)	300MM
196	MAIN STEAM STOP VALVE 4 BYPASS I/V (100MM)	100MM
197	S/HEATER 4 FLOW LEVEL 1 DRAIN I/V (15MM)	15MM

198	S/HEATER 4 FLOW LEVEL 2 DRAIN I/V (15MM)	15MM
199	S/HEATER 4 FLOW LEVEL 3 DRAIN I/V (15MM)	15MM
200	S/HEATER 4 FLOW LEVEL 4 DRAIN I/V (15MM)	15MM
201	BOILER STEAM LEG MASTER DRAIN I/V (50MM)	50MM
202	BOILER STEAM LEG 1 MOTORISED I/V (25MM)	25MM
203	BOILER STEAM LEG 2 MOTORISED I/V (25MM)	25MM
204	BOILER STEAM LEG 3 MOTORISED I/V (25MM)	25MM
205	BOILER STEAM LEG 4 MOTORISED I/V (25MM)	25MM
206	TURBINE MAIN STEAM HEADER 1 VENT MOTORISED I/V(80MM)SEMPPELL GATE	80MM
207	HOT REHEAT DRN TO BLOWDOWN VESL MOTORIZED I/V (100MM)	100MM
208	HOT REHEAT DRAIN TO BLOW DOWN VESSEL I/VALVE (100MM)	100MM
209	HOT REHEAT DRN TO DRN FLASH TANK MOTOR I/V/V (50MM)	50MM
210	HOT REHEAT DRAIN TO TURBINE FLUSH TANK I/V	50MM
211	HOT REHEAT DRAIN TO BBDV MOTORISED I/V (100MM)	100MM
212	COLD REHEAT STEAM NRV TO TURBINE 1 (800MM)	800MM
213	COLD REHEAT STEAM NRV TO TURBINE 2 (800MM)	800MM
214	COLD REHEAT STEAM DRN/V TO BLR BLOWDOWN VESSEL (100MM)	100MM
215	COLD REHEAT STEAM DRN/V TO BLR BLOWDOWN VESSEL (100MM)	100MM
216	COLD REHEAT STEAM MOTORISED DRAIN VALVE TO DFT(50MM)SEMPPELL GLOBE	50MM
217	HP EXHAUST MOTORIZED DRN V/V TO TURB DFT (65MM)	65MM
218	HP EXHAUST MOTORIZED DRN V/V TO TURB DFT (65MM)	65MM
219	COLD REHEAT SAFETY VALVE STEAM PRES 1 I/V 2 (25MM)	25MM
220	COLD REHEAT SAFETY VALVE STEAM PRES 2 I/V/V (25MM)	25MM
221	COLD REHEAT SAFETY VALVE STEAM PRES 3 I/V/V (25MM)	25MM
222	COLD REHEAT SAFETY VALVE STEAM PRES 3 I/V/V (25MM)	25MM
223	COLD REHEAT SAFETY VALVE STEAM PRES 3 I/V/V (25MM)	25MM
224	COLD REHEAT SAFETY VALVE STEAM PRES 3 I/V/V (25MM)	25MM
225	COLD REHEAT SAFETY VALVE STEAM PRES 3 I/V/V (25MM)	25MM
226	COLD REHEAT SAFETY VALVE STEAM PRES 3 I/V/V (15MM)	15MM
227	COLD REHEAT SAFETY VALVE STEAM PRES 3 I/V/V (15MM)	15MM
228	COLD REHEAT SAFETY VALVE STEAM PRES 3 I/V/V (15MM)	15MM
229	COLD REHEAT SAFETY VALVE STEAM PRES 3 I/V/V (15MM)	15MM
230	COLD REHEAT SAFETY VALVE STEAM PRES 3 I/V/V (15MM)	15MM
231	UNIT AUX STEAM SUPPLY DRAIN STEAM TRAP (25MM)	25MM
232	AUX STEAM UNIT 2/3 VENT I/V 1	250MM
233	AUX STEAM UNIT 2/3 VENT I/V 2	250MM
234	AUXILIARY STEAM FIRST I/V	250MM
235	ISOLATING VALVE 50MM	50MM
236	ISOLATING VALVE 50MM	50MM
237	ISOLATING VALVE 50MM	50MM
238	LP AUX STEAM HEADER SAFETY VALVE 1 (250MM)	250MM
239	LP AUX STEAM HEADER SAFETY VALVE 2 (250MM)	250MM
240	HP AUX STEAM HEADER STEAM TRAP	25MM
241	LP AUX STEAM HEADER DRAIN STEAM TRAP	25MM

242	EVAPORATOR WARMING STEAM SAFETY VALVE (25MM)	25MM
243	EVAPORATOR WARMING STEAM MOTORIZED I/VALVE A (200MM)	200MM
244	EVAPORATOR WARMING STEAM MOTORIZED I/VALVE B (200MM)	200MM
245	UNIT AUX STEAM SUPPLY MOTORIZED I/V	250MM
246	UNIT AUX STEAM SUPPLY MOTORIZED I/V (250MM)	250MM
247	HP AUX STEAM MANIFOLD MOTORIZED I/V/V TO BDV (25MM)	25MM
248	RH SATURATOR STEAM I/V (250MM)	250MM
249	RH STEAM BYPASS I/V (25MM)	25MM
250	RH AUX STEAM I/V TO STEAM AIR PRE-HEATER	250MM
251	RH AUX STEAM BYPASS 50MM	50MM
252	RH MAIN STEAM AIR HEATER CONDENSATE OUTLET I/V	250MM
253	RH STEAM AIR HEATER STEAM I/V A	250MM
254	LH SATURATOR STEAM I/V	250MM
255	LH STEAM BYPASS I/V	250MM
256	LH AUX STEAM I/V TO STEAM AIR PREHEATER 50MM	50MM
257	LH AUX STEAM BYPASS I/V TO STEAM AIR PREHEATER 50MM	50MM
258	LH MAIN STEAM AIR HEATER CONDENSATE OUTLET I/V 50MM	50MM
259	LH SATURATED AIR HEATER STEAM DRAIN I/V A 50MM	50MM
260	COLD REHEAT TO AUX STEAM MANIFOLD MOTOR I/V 50MM	50MM
261	COLD REHEAT TO AUX STEAM CONTROL VALVE NRV 50MM	50MM
262	COLD REHEAT BYPASS VALVE 50MM	50MM
263	EVAPORATOR WARMING STEAM SAFETY VALVE 65MM	65MM
264	EVAPORATOR WARMING STEAM DRAIN I/V 2 25MM	25MM
265	BOILER WARMING STEAM FLOW STEAM TRAP 25MM	25MM
266	EVAPORATOR WARMING STEAM NRV A 25MM	25MM
267	EVAPORATOR WARMING STEAM NRV B 16MM	16MM
268	PRIMARY AIR SATURATOR HAND VALVE TO SATURATOR 70MM	70MM
269	PRIMARY AIR STEAM HEADER INLET I/V 70MM	70MM
270	PRIMARY AIR STEAM HEATER CONDENSATE OUTLET I/V 2 50MM	50MM
271	RH CONDENSATE TO SATURATOR DRAIN I/V 50MM	50MM
272	RH CONDENSATE TO SATURATOR DRAIN I/V 50MM	50MM
273	RH AUX STEAM AIR PREHEATER VENT 50MM	50MM
274	RH SATURATOR STEAM INLET NRV 50MM	50MM
275	LH CONDENSATE TO SATURATOR DRAIN I/V 50MM	50MM
276	LH CONDENSATE TO SATURATOR DRAIN I/V 50MM	50MM
277	LH AUX STEAM TO AIR PREHEATER VENT 50MM	50MM
278	LH SATURATOR STEAM INLET NRV 50MM	50MM
279	LP AUX STEAM HEADER DRAIN I/V 150MM	150MM
280	LP AUX STEAM HEADER DRAIN I/V 2 50MM	25MM
281	EVAPORATOR WARMING STEAM DRAIN I/V 2 25MM	25MM
282	EVAPORATOR WARMING STEAM DRAIN I/V 1 25MM	25MM
283	PRIMARY AIR SATURATOR AUX STEAM TO SAT NRV 50MM	50MM
284	HP AUX STEAM HEADER DRAIN I/V 1 50MM	50MM
285	HP AUX STEAM HEADER DRAIN I/V 2 50MM	50MM
286	COLD REHEAT TO AUX STEAM MANUAL I/V 50MM	50MM
287	UNIT AUX STEAM PRESSURE I/V 70MM	70MM

288	UNIT AUX STEAM SUPPLY MANUAL I/V 50MM	50MM
289	UNIT AUX STEAM SUPPLY DRAIN I/V 1 50MM	50MM
290	UNIT AUX STEAM SUPPLY DRAIN BYPASS I/V 50MM	50MM
291	UNIT AUX STEAM SUPPLY DRAIN I/V 2 50MM	50MM

Palmiet Pump Storage Scheme:

Overhaul of Bypass hydraulic valve 300mm (U1 and U2) and commissioning.

Tutuka Power Station: Boiler Valves, Turbine Valves, and Commissioning - strip, inspect, blue, box and stroke. Estimate scope below for a GO/MGO/IR (subject to change):

TUTUKA TURBINE VALVES GO/MGO/IR (758)		
QIP	MAIN CONDENSER	SIZE
1	CW DOORS (3 Off)	300mm
2	CW DOORS (3 Off)	300mm
3	MAIN CONDENSER	300mm
4	MAIN CONDENSER NECK	300mm
5	HOTWELL(2 OFF)	300mm
6	HOTWELL(2 OFF)	300mm
7	VACUUM BREAKER	300mm
8	HC DOG BONE FILLING IV	1"
9	CC DOG BONE FILLING IV	1"
10	NORMAL MU A HAND I/V	100mm
11	NORMAL MU B HAND I/V	100mm
12	DEMIN MAKE-UP B TO HOT COND	100mm
13	DEMIN MAKE-UP A TO HOT COND	100mm
14	DEMIN MAKE-UP EMERG TO COLD COND	300mm
15	CDV SPRAYWATER CONTR V	50mm
16	EXT P/P A 1ST STAGE DISCH NRV	300mm

17	EXT P/P B 1ST STAGE DISCH NRV	300mm
18	EXT P/P A 2ND STAGE DISCH NRV	300mm
19	EXT P/P B 2ND STAGE DISCH NRV	300mm
20	EXT P/P SUC LINE DRN V	150mm
21	EXT P/P 1ST STAGE RECIRC CNTR V	150mm
22	EXT P/P 1ST STAGE RECIRC DRN V	25mm
23	EXT P/P 1ST STAGE RECIRC VENT	25mm
24	EXT P/P 2ND STAGE RECIRC IV	300mm
25	EXT P/P 2ND STAGE RECIRC CNTR V	300mm
26	EXT P/P A 1ST STAGE SUCTION V/V	300mm
27	EXT P/P A 1ST STAGE SUC DRN V/V	300mm
28	EXT P/P B 1ST STAGE SUCTION V/V	300mm
29	EXT P/P B 1ST STAGE SUC DRN V/V	300mm
30	EXT P/P A 1ST STAGE DISCH I/V	300mm
31	EXT P/P A 1ST STAGE LEAK OFF TO CC IV	150mm
32	EXT P/P A 1ST STAGE STRAINER FILLING I/V	25mm
33	EXT P/P A 2ND STAGE DISCH ISOL BYP V	25mm
34	EXT P/P A 2ND STAGE DISCH IV	400mm
35	EXT P/P A 2ND STAGE SUCTION V	400mm
36	EXT P/P A 1ST STAGE DISCH STRAINER VENT V	25mm
37	EXT P/P A 1ST STAGE DRN V	25mm
38	EXT P/P A 1ST STAGE STRAINER DRN V	50mm
39	EXT P/P B 1ST STAGE DISCH IV	300mm
40	EXT P/P B 1ST STAGE LEAK OFF TO CC IV	150mm
41	EXT P/P B 2ND STAGE DISCH ISOL BYP V	300mm
42	EXT P/P B 2ND STAGE DISCH IV	300mm
43	EXT P/P B 2ND STAGE SUCTION V	300mm
44	EXT P/P B 1ST STAGE DISCH DRN V	300mm

45	EXT P/P B 1ST STAGE DISCH STRAINER VENT V	25mm
46	EXT P/P B 1ST STAGE STRAINER DRN V	25mm
47	CLC INLET I/V	400mm
48	CLC OUTL I/V	400mm
49	CLC BYPASS I/V	400mm
50	CLC(STROKE CHECK AND LEAK TEST TO BE WITNESS BY ENGINEER)	400mm
51	RFWT	300mm
52	EXT P/P STAGE 2 SUCTION TO RFWT V/V	300mm
53	GLAND STEAM CONDENSER	500mm
54	DRAIN TANK	500mm
55	GSC DRAIN TANK DRN TO COND V/V	50mm
56	GSC FAN A OUTLET CONTR V/V	250mm
57	GSC FAN A OUTLET V/V	250mm
58	GSC FAN B DRAIN DTR ISOL V/V	25mm
59	GSC FAN B OUTLET CONTR V/V	250mm
60	GSC FAN B OUTLET NRV	250mm
61	DRAIN COOLER	500mm
62	LP HEATER 1 & 2 (Condensate Side)	1.2m
63	LP HEATER 1 & 2 (Steam Side)	1.2m
64	LP HTR DRN COOLER INL IV BYP V	50mm
65	LP HTR DRN COOLER INL IV	300mm
66	LP HTR DRN COOLER OUTL IV BYP V	50mm
67	LP HTR DRN COOLER OUTL IV	300mm
68	LP HTR DRN COOLER BYP V	50mm

69	LP HTR DRN COOLER BYP V BYP V	300mm
70	DRAINS COOLER DRN V/V	25mm
71	LP HEATER 1 & 2 AND DRAINS COOLER CONTROL ARRANGEMENT	50mm
72	LP HEATER 1 & 2 AND DRAINS COOLER CONTROL ARRANGEMENT	50mm
73	LP HEATER 3 VESSEL (STEAM & FEEDWATER SIDE)	300mm
74	LP HEATER 3 CONTROL ARRANGEMENT	300mm
75	LP HTR 3 STM VENT TO COLD COND	50mm
76	LP HTR 3 EMERG DRN CNTRL V	250mm
77	LP HTR 3 B/S IV A	400mm
78	LP HTR 3 B/S A TO HOT COND DRN V/V	50mm
79	LP HTR 3 B/S IV B	400mm
80	LP HTR 3 B/S B TO HOT COND DRN V/V	50mm
81	LP HTR 3 EMERG DRN IV	50mm
82	LP HTR 3 CTRL ARGT 1 FLG IV	50mm
83	LP HTR 3 CTRL ARGT 1 IV	25mm
84	LP HTR 3 CTRL	50mm
85	LP HTR 3 CTRL ARGT 2 FLG IV	50mm
86	LP HTR 3 CTRL ARGT 2 IV	25mm
87	LP HTR 3 CTRL ARGT 2 IV	50mm
88	LP HTR 3 CTRL ARGT 3 FLG IV	50mm
89	LP HTR 3 CTRL ARGT 3 IV	25mm
90	LP HTR 3 CTRL ARGT 3 IV	50mm
91	LP HTR 3 LEVEL IV	50mm
92	LP HTR 3 LEVEL IV	50mm
93	LP HTR 3 LEVEL TX IV	50mm
94	LP HTR 3 LEVEL TX IV	50mm

95	LP HTR 3 CTRL ARGT DRN V	25mm
96	LP HTR 3 DRN P/P A SUCT IV	150mm
97	LP HTR 3 DRN P/P A DISCH NRV	100mm
98	LP HTR 3 DRN P/P A DISCH IV	80mm
99	LP HTR 3 DRN P/P A LEAK-OFF IV	25mm
100	LP HTR 3 DRN P/P A DISCH DRN V	25mm
101	LP HTR 3 DRN P/P B SUCT IV	150mm
102	LP HTR 3 DRN P/P B DISCH NRV	100mm
103	LP HTR 3 DRN P/P B DISCH IV	80mm
104	LP HTR 3 DRN P/P BLEAK-OFF IV	25mm
105	LP HTR 3 DRN P/P B DISCH DRN V	25mm
106	LP HTR 3 LEVEL CNTR V	100mm
107	LP HTR 3 LEVEL CNTR IV	100mm
108	LP HTR 3 INL FW IV	300mm
109	LP HTR 3 INL FW IV BYP IV	50mm
110	LP HTR 3 FW BYP IVDRN P/P A DISCH IV	250mm
111	LP HTR 3 FW BYP IV BYP IV	25mm
112	LP HTR 3 OUTL FW IV	300mm
113	LP HTR 3 OUTL FW IV BYP IV	50mm
114	LP HTR 3 OUTL FW NRV	400mm
115	LP HTR 3 OUTL CONDS DRN IV	25mm
116	LP HTR 3 OUTL VENT IV	25mm
117	DA FW INLET VENT V/V	25mm
118	LP HTR 3 OUTL FW IV	25mm
119	LP HTR 3 OUTL DRN V/V TO EXP VES	25mm
120	LP HTR 3 OUTL DRN V/V	25mm
121	LP HTR 3A BLED STM A PRESS TX IV	25mm
122	LP HTR 3A STM PRESS TP	15mm

123	LP HTR 3B STM PRESS TP	15mm
124	LP HTR 3B BLED STM A PRESS TX IV	15mm
125	LP HTR 3 PRESS TP	15mm
126	LP HTR 3 DRAIN PIPE DRAIN V/V	50mm
127	LP HTR 3 PRESS TP	15mm
128	DEAERATOR	300mm
129	DA CONTROL ARRANGEMENT	300mm
130	DLC	400mm
131	DLC INLET I/V	400mm
132	DLC OUTLET I/V	400mm
133	DLC BYPASS IV	400mm
134	DEAERATOR STORAGE TANK	300mm
135	B DA STM INLET V/V	400mm
136	B DA STM INLET MOT BYP V/V	50mm
137	B DA STM INLET HAND BYP V/V	50mm
138	A DA STM INLET V/V	400mm
139	A DA STM INLET MOT BYP V/V	50mm
140	A DA STM INLET HAND BYP V/V	50mm
141	B DA FEEDWATER INLET V/V	300mm
142	B DA FEEDWATER INLET BYP V/V	50mm
143	A DA FEEDWATER INLET V/V	300mm
144	A DA FEEDWATER INLET BYP V/V	50mm
145	DA VENT TO ATM V/V A	25mm
146	DA VENT TO ATM V/V B	25mm
147	DA VENT TO COND V/V	25mm
148	D/A LEVEL IND ISOL V/V	25mm
149	DA CTRL ARGV ISOL V/V	50mm

150	DA CTRL ARGV ISOL V/V	50mm
151	DLC INLET ISOL BYP V/V	50mm
152	DLC OUTLET ISOL BYP V/V	50mm
153	AUX STM TO DST ISOL V/V	250mm
154	AUX STM TO DST ISOL BYP V/V	25mm
154	DST WARM STM ISOL BYP HIV	25mm
155	AUX STM TO DST NRV	250mm
156	DST CTRL ARGV 1 BOTTOM IV	50mm
157	DST CTRL ARGV 1 DRN TO EV IV	50mm
158	DST CTRL ARGV 1 TOP IV	50mm
159	DST CTRL ARGV 1 VENT TO COND IV	25mm
160	DST CTRL ARGV 1 BOTTOM IV	50mm
161	DST CTRL ARGV 1 DRN TO EV IV	50mm
162	DST CTRL ARGV 1 TOP IV	25mm
163	DST CTRL ARGV 1 VENT TO COND IV	50mm
164	DST CTRL ARGV VENT V/V	25mm
165	DST CTRL ARGV 1 BOTTOM IV	50mm
166	DST CTRL ARGV 1 DRN TO EV IV	50mm
167	DST CTRL ARGV 1 TOP IV	50mm
168	DST CTRL ARGV 1 VENT TO COND IV	50mm
169	DST LTX IV	50mm
170	DST LTX IV	50mm
171	IP BLED STM PIPE DRN V TO COND	50mm
172	IP BLED STM IV	400mm
173	IP BLED STM IV MOT BYP V	50mm
174	IP BLED STM HAND BYP V	50mm
175	IP BLED STM DRAIN VESSEL DRN	25mm
176	IP BLED STM DRAIN VESSEL DRN TO COND	25mm

177	IP BLED STM DRAIN VESSEL DRN TO COND INL IV	25mm
178	DA LEVEL CTRL DRN V	25mm
179	IP BLED STM DRAIN VESSEL STM TRAP	50mm
180	IP BLED STM DRAIN VESSEL STM TRAP OUTL IV	50mm
181	IP BLED STM TO DA SUPPLY NRV	400mm
182	IP BLED STM PP ISOL V/V	15mm
183	IP BLED STM PP ISOL V/V	15mm
184	IP BLED STM PTX ISOL V/V	15mm
185	CRH STM TO DA IV	400mm
186	CRH STM TO DA IV MOT BYP V	50mm
187	CRH STM TO DA IV MOT BYP V	50mm
188	CRH STM TO DA IV HAND BYP V	50mm
189	CRH STM TO DA CNTR V	400mm
190	AUX STM TO DA CNTRL V/V	300mm
191	AUX STM TO DA CNTRL V/V	400mm
192	AUX STM TO DA IV MOT BYP V	50mm
193	AUX STM TO DA NRV	300mm
194	AUX STM TO DA IV HAND BYP V	50mm
195	AUX STM TO DA PS IV	25mm
196	DST PRESS IND IV	15mm
197	DST PRESS TX IV	50mm
198	DST PRESS TP	15mm
199	DST DOSING V/V	15mm
200	DST SAMPLING V/V	15mm
201	DST PRESS IND V/V	50mm
202	DST LEVEL IND TOP ISOL V/V	50mm
203	DST LEVEL CONTROL ARGV BOTM ISOL V/V	50mm
204	DST CONTROL ARGV	50mm

205	DST CONTROL ARRANGEMENT (9 OFF)	50mm
206	IP B/S DRAIN POCKET/VESSEL	800mm
207	IP B/S TO DA NRV	300mm
208	SAE B	200mm
209	SAE A	200mm
210	STM EJECT A AIR CNTR V/V	200mm
211	STM EJECT A AIR IV	200mm
212	STM EJECT A STM INL IV	200mm
213	STM EJECT B AIR CNTR V	200mm
214	STM EJECT A AIR IV	200mm
215	STM EJECT A STM INL IV	200mm
216	WAE A1	200mm
217	WAE A2	200mm
218	WAE B1	200mm
219	WAE B2	200mm
220	WAE A1 AIR CV	200mm
221	WAE A2 AIR CV	200mm
222	WAE B1 AIR CV	200mm
223	WAE B2 AIR CV	200mm
224	WAE A1 AIR IV	200mm
225	WAE A2 AIR IV	200mm
226	WAE B1 AIR IV	200mm
227	WAE B2 AIR IV	200mm
228	WAE A1 WTR INL V	200mm
229	WAE A2 WTR INL V	200mm
230	WAE B1 WTR INL V	200mm

231	WAE B2 WTR INL V	200mm
232	SEC CW (GEN) P/P A SUCTION V	300mm
233	SEC CW (GEN) P/P A DISCH NRV	300mm
234	SEC CW (GEN) P/P A DISCH IV	300mm
235	SEC CW (GEN) P/P B SUCTION V	300mm
236	SEC CW (GEN) P/P B DISCH NRV	300mm
237	SEC CW (GEN) P/P B DISCH IV	300mm
238	SEC CW (GEN) EXCESS RETURN V	300mm
239	SEC CW (GEN) EXCESS RETURN V IV	300mm
240	SEC CW (GEN) EXCESS RETURN V IV	300mm
241	SEC CW (GEN) SUMP TANK LOW LEVEL CNTR V/V	150mm
242	SEC CW (GEN) SUMP TANK HIGH LEVEL CNTR V/V	150mm
243	ATMOSPHERIC TANK	300mm
244	TAPROGGE SCREENS (LOWER & UPPER)	80mm
245	TAPROGGE SCREENS (LOWER & UPPER)	80mm
246	TAPROGGE A ACCUMULATOR INL ISOL V/V	80mm
247	TAPROGGE A ACCUMULATOR OUT ISOL V/V	80mm
248	TAPROGGE B ACCUMULATOR INL ISOL V/V	80mm
249	TAPROGGE B ACCUMULATOR OUT ISOL V/V	80mm
250	TAPROGGE P/P RECIRC ISOL V/V	80mm
251	TAPROGGE P/P RECIRC ISOL V/V	80mm
252	GLAND SEAL WATER PRESSURE REDUCING VALVE	80mm
253	GLAND SEAL WATER FILTER	80mm
254	HP HTR 5A (STEAM & FEEDWATER SIDE)	300mm

255	HP HTR 6A (STEAM & FEEDWATER SIDE)	300mm
256	HP HTR 6B (STEAM & FEEDWATER SIDE)	300mm
257	HP HTR 5B (STEAM & FEEDWATER SIDE)	300mm
257	HP HTR 5A BS I/V	400mm
258	HP HTR 5A BS I/V BYP	50mm
259	HP HTR 5A BS I/V BYP	50mm
260	HP HTR 5B BS I/V	400mm
261	HP HTR 5B BS I/V BYP	50mm
262	HP HTR 5B BS I/V BYP	50mm
263	HP HTR 6A C R/H STM INL I/V	300mm
264	HP HTR 6A C R/H STM INL IV BP	25mm
265	HP HTR 6A C R/H STM INL IV BP	25mm
266	HP HTR 6B C R/H INL I/V	300mm
267	HP HTR 6B C R/H INL IV BP	25mm
268	HP HTR 6B C R/H INL IV BP	25mm
269	HP HTR 6A DRN/HP 5A CNTRL V/V	100mm
270	HP HTR 5A DRN TO DST CTRL V/V	100mm
271	HP HTR 6B DRN/HPH 5B CTRL V/V	100mm
272	HP HTR 5B DRN TO DST CTRL V/V	100mm
273	HP HTR 5A VENT TO COLD CON CTRL AIR IV	25mm
274	HP HTR 6A VENT TO COLD COND CTRL AIR IV	25mm
275	HP HTR 5B VENT TO COLD COND CTRL AIR IV	25mm
276	HP HTR 6B VENT TO COLD COND CTRL AIR IV	25mm
277	HP HTR 5A EMERG DRN/HOT COND IV	150mm
278	HP HTR 5A EMERG DRN / HOT COND CTRL	150mm
279	HP HTR 6A EMERG DRN/HOT COND IV	350mm
280	HP HTR 6A EMERG DRN/HOT COND CTRL V/V	80mm
281	HP HTR 5B EMERG DRN/HOT COND IV	350mm

282	HP HTR 5B EMERG DRN/HOT COND CTRL V/V	350mm
283	HP HTR 6B EMERG DRN/HOT COND IV	350mm
284	HP HTR 6B EMERG DRN/HOT COND CTRL V/V	350mm
285	HP HEATER 5A DRN IV	200mm
286	HP HEATER 5A DRN/DTR IV	50mm
287	HP HEATER 6A DRN/HTR 5A DRN IV	250mm
288	HP HTR 5A FEEDWATER INL DRN/DTR IV	50mm
289	HP HTR 5A FW INL DRN IV	150mm
290	HP HTR 6A FW OUTL DRN IV	50mm
291	HP HTR 6A FW OUTL DRN/DTR IV	25mm
292	HP HTR 5A FW OUTL PP IV	25mm
293	HP HTR 5A DRN/EV IV	50mm
294	HP HTR 5A FW INL DRN/EV IV	25mm
295	HP HTR 6A DRN/HTR 5A IV	250mm
296	HP HTR 6A DRN/HTR 5A IV	250mm
297	HP HTR 6A CTRL ARG 1 IV	50mm
298	HP HTR 6A CTRL ARG 2 IV	50mm
299	HP HTR 6A CTRL ARG 3 IV	50mm
300	HP HTR 6A CTRL ARG 1 IV	25mm
301	HP HTR 6A CTRL ARG 2 IV	25mm
302	HP HTR 6A CTRL ARG 3 IV	25mm
303	HP HTR 5A CTRL ARG 1 IV	50mm
304	HP HTR 5A CTRL ARG 2 IV	50mm
305	HP HTR 5A CTRL ARG 3 IV	50mm
306	HP HTR 5A CTRL ARG 1 IV	50mm
307	HP HTR 5A CTRL ARG 2 IV	50mm
308	HP HTR 5A CTRL ARG 3 IV	50mm
309	HP HTR 5A EMERGENCY DRN LINE DRN IV	200mm

310	HP HTR 5A EMERGENCY DRN LINE DRN/DTR IV	50mm
311	HP HTR 5A DRN/DST IV	50mm
312	HP HTR 5A CTRL ARGV VENT/DTR IV	25mm
313	HP HTR 6A CTRL ARGV VENT/DTR IV	25mm
314	HP HTR 6A C R/H STM INL NRV TOP COVER PLUG REMOVED	250mm
315	HP HTR 6A DRN/HP 5A DRN IV	25mm
316	HP HTR 5A VENT/EV IV	25mm
317	HP HTR 5A VENT/DTR IV	25mm
318	HP HTR 6A VENT/EV IV	25mm
319	HP HTR 6A VENT/DTR IV	25mm
320	HP HTR 6A LEVEL TX IV	25mm
321	HP HTR 6A LEVEL TX IV	50mm
322	HP HTR 6A LEVEL CTRL IV	50mm
323	HP HTR 6A LEVEL CTRL IV	50mm
324	HP HTR 5A LEVEL TX IV	50mm
325	HP HTR 5A LEVEL TX IV	50mm
326	HP HTR 5A LEVEL CTRL IV	50mm
327	HP HTR 5A LEVEL CTRL IV	50mm
328	HP HTR 6A CTRL ARGV DRN IV	50mm
329	HP HTR 6A CTRL ARGV DRN IV	50mm
330	HP HTR 5A CTRL ARGV DRN IV	50mm
331	HP HTR 6A CTRL ARGV 1/CONT IV	25mm
332	HP HTR 6A CTRL ARGV 2/COND IV	25mm
333	HP HTR 6A CTRL ARGV 3/COND IV	25mm
334	HP HTR 5A CTRL ARGV 1/COND IV	25mm
335	HP HTR 5A CTRL ARGV 2/COND IV	25mm
336	HP HTR 5A CTRL ARGV 3/COND IV	25mm
337	HP HTR 5A CTRL ARGV "1" LVL SW/IND DRN IV	15mm

338	HP HTR 5A CTRL ARGV "2" LVL SW/IND DRN IV	15mm
339	HP HTR 5A CTRL ARGV "3" LVL SW/IND DRN IV	15mm
340	HP HTR 6A CTRL ARGV "1" LVL SW/IND DRN IV	15mm
341	HP HTR 6A CTRL ARGV "2" LVL SW/IND DRN IV	15mm
342	HP HTR 6A CTRL ARGV "3" LVL SW/IND DRN IV	15mm
343	HP HTR 5A EMERGENCY DRN LINE DRN/DTR IV	25mm
344	HP HTR 5A EMERGENCY DRN LINE DRN/EV IV	25mm
345	HP HTR 5A EMERGENCY DRN LINE DRN/DTR IV	25mm
346	HP HTR 5A DRN/DST IV	25mm
347	HP HTR 5A VENT/COND IV	25mm
348	HP HTR 6A DRN/HTR 5A IV	25mm
349	HP HTR 6A DRN/HTR 5A IV BP	25mm
350	HP HTR 6A DRN/HTR 5A DRN/EV IV	25mm
351	HP HTR 6A DRN/HTR 5A DRN/DTR IV	25mm
352	HP HTR 6A EM DRN/HOT COND IV BP	25mm
353	HP HTR 6A VENT / COND IV	25mm
354	HP HTR 6A EMERGENCY DRN LINE DRN/EV IV	25mm
355	HP HTR 6A EMERGENCY DRN LINE DRN/DTR IV	25mm
356	HP HTR 6A PRESS DROP SUB COOLING ZONE DIFF IND IV	15mm
357	HP HTR PRESS DROP SUB-COOLING ZONE DIFF PRESS SW/IND IV	15mm
358	HP HTR 6A HTR 5A PP IV	15mm
359	HP HTR 5A FWT PP IV	15mm
360	HP HTR 6A BS PTX IV	15mm
361	HP HTR 6A BS PP IV	15mm
362	HP HTR 6A C R/H STM INL DIFF PRESS IND/SW IV	15mm
363	HP HTR 6A C R/H STM INL DIFF PRESS IND/SW IV	15mm
364	HP HTR 6A PI IV	15mm
365	HP HTR 6A PP IV	15mm

366	HP HTR 5A BS PTX IV	15mm
367	HP HTR 5A PP IV	15mm
368	HP HTR 5A PI IV	15mm
369	HP HTR 5A PP IV	15mm
370	HP HTR 6A DRN/DTR IV	25mm
371	HP HTR 6A C R/H STM INL NRV TOP COVER PLUG VENT/DTR IV	250mm
372	HP HTR 6A PI IV	15mm
373	HP HTR 6B EMERGENCY DRN LINE DRN IV	25mm
374	HP HTR 6B EMERGENCY DRN LINE DRN/DTR IV	25mm
375	HP HTR 6B DRN/HTR 5B IV	25mm
376	HP HTR 6B DRN/HTR 5B IV	25mm
377	HP HTR 5B EMERGENCY DRN LINE DRN IV	25mm
378	HP HTR 5B DRN IV	25mm
379	HP HTR 5B CTRL ARGT 1 IV	50mm
380	HP HTR 5B CTRL ARGT 2 IV	50mm
381	HP HTR 5B CTRL ARGT 3 IV	50mm
382	HP HTR 5B CTRL ARGT 1 IV	50mm
383	HP HTR 5B CTRL ARGT 2 IV	50mm
384	HP HTR 5B CTRL ARGT 3 IV	50mm
385	HP HTR 6B CTRL ARGT 1 IV	50mm
386	HP HTR 6B CTRL ARGT 2 IV	50mm
387	HP HTR 6B CTRL ARGT 3 IV	50mm
388	HP HTR 6B CTRL ARGT 1 IV	50mm
389	HP HTR 6B CTRL ARGT 2 IV	50mm
390	HP HTR 6B CTRL ARGT 3 IV	50mm
391	HP HTR 6B DRN/HTR 5B DRN IV	50mm
392	HP HTR 5B DRN/FWT IV	50mm
393	HP HTR 6B C R/H STM INL NRV TOP COVER PLUG REMOVED	250mm

394	HP HTR 5B EMERGENCY DRN LINE DRN/DTR IV	25mm
395	HP HTR 5B EMERGENCY DRN LINE DRN/DTR IV	25mm
396	HP HTR 5B DR/EV IV	25mm
397	HP HTR 5B DRN/DTR IV	25mm
398	HP HTR 5B DRN TO DST DRN IV	25mm
399	HP HTR 6B EMERGENCY DRN/HOT COND IV BP	25mm
400	HP HTR 6B DRN/HTR 5B DRN/DTR IV	25mm
401	HP HTR 6B DRN/HTR 5B DRN/EV IV	25mm
402	HP HTR 6B DRN/HTR 5B DRN/DTR IV	25mm
403	HP HTR 6B DRN/HTR 5B IV BP	25mm
404	HP HTR 6B DRN/HTR 5B IV BP	25mm
405	HP HTR 6B EMERGENCY DRN LINE DRN/EV IV	25mm
406	HP HTR 6B EMERGENCY DRN LINE DRN/DTR IV	25mm
407	HP HTR 5B VENT/COND IV	25mm
408	HP HTR 6B VENT/COND IV	25mm
409	HP HTR 6B LEVEL CTRL IV	25mm
410	HP HTR 6B LEVEL CTRL IV	25mm
411	HP HTR 6B LEVEL CTRL TX IV	25mm
412	HP HTR 6B LEVEL TX IV	25mm
413	HP HTR 6B CTRL ARGT 1/COND IV	25mm
414	HP HTR 6B CTRL ARGT 2/COND IV	25mm
415	HP HTR 6B CTRL ARGT DRN/DTR IV	25mm
416	HP HTR 6B CTRL ARGT 3/COND IV	25mm
417	HP HTR 5B LEVEL TX IV	15mm
418	HP HTR 5B LEVEL TX IV	15mm
419	HP HTR 5B LEVEL CTRL IV	15mm
420	HP HTR 5B LEVEL CTRL IV	15mm
421	HP HTR 5B CTRL ARGT 1 LVL SW/IND DRN IV	15mm

422	HP HTR 5B CTRL ARGV 2 LVL SW/IND DRN IV	15mm
423	HP HTR 5B CTRL ARGV 3 LVL SW/IND DRN IV	15mm
424	HP HTR 6B CTRL ARGV 1 LVL SW/IND DRN IV	15mm
425	HP HTR 6B CTRL ARGV 2 LVL SW/IND DRN IV	15mm
426	HP HTR 6B CTRL ARGV 3 LVL SW/IND DRN IV	15mm
427	HP HTR 5B CTRL ARGV DRN/DTR IV	15mm
428	HP HTR 5B CTRL ARGV 1/COND IV	15mm
429	HP HTR 5B CTRL ARGV 2/COND IV	15mm
430	HP HTR 5B CTRL ARGV 2/COND IV	15mm
431	HP HTR 6B/HP HTR PP IV	15mm
432	HP HTR 6B PRESS DROP SUB-COOLING ZONE DIFF	15mm
433	HP HTR 6B PRESS DROP SUB-COOLING ZONE DIFF	15mm
434	HP HTR 5B DRN TO DST PP IV	15mm
435	HP HTR 6B C R/H STM INL DIFF PRESS IND/SW IV	15mm
436	HP HTR 6B C R/H STM INL DIFF PRESS IND/SW IV	15mm
437	HP HTR 6B PI IV	15mm
438	HP HTR 6B C R/H STM INL PP IV	15mm
439	HP HTR 6B PP IV	15mm
440	HP HTR 6B C R/H STM INL PRESS TX IV	15mm
441	HP HTR 5B PP IV	15mm
442	HP HTR 5B PI IV	15mm
443	HP HTR 5B BS PP IV	15mm
444	HP HTR 5B BS PTX IV	15mm
445	HP HTR 5B VENT IEV IV	25mm
446	HP HTR 6B VENT IEV IV	25mm
447	HP HTR 6B VENT DTR IV	25mm
448	HP HTR 5B VENT DTR IV	25mm
449	HP HTR 5B CTR ARGV VENT/DTR IV	25mm

450	HP HTR 6B EMERGENCY DRN LINE DRN/DTR IV	25mm
451	HP HTR 6B FW OUTL P/P IV	15mm
452	HP HTR 5B FW	25mm
453	HP HTR 5B EMERGENCY DRN LINE DRN/EV IV	25mm
454	CONDENSATE POLISHER A	300mm
455	CONDENSATE POLISHER B	300mm
456	CONDENSATE POLISHER C	300mm
457	POLISHER A VENT BIN CNTRL V/V	50mm
458	CONDS POLISHER 1 A DRN WTR CTRL V/V	50mm
459	CONDS POLISHER 1A AIR & TRF WTR CTRLV/V	50mm
460	CONDS POLISHER 1 A FIL WTR INL CTRL V/V	300mm
461	Conds polisher 1A Inl isol bin ctrl v/v	300mm
462	POLISHER 1A OUTL ISOL BIN CTRL V/V	300mm
463	CONDS POLISHER 1 B VENT BIN CTRL V/V	50mm
464	CONDS POLISHER 1B RINSE WTR OUT LCTRL V/V	100mm
465	CONDS POLISHER 1B AIR & TRF WTR CTRL V/V	100mm
466	CONDS POLISHER 1B FIL WTR INLET CTRLV/V	300mm
467	Conds polisher 1B Inl isol bin ctrl v/v	300mm
468	CPP 1B OUTL ISOL BIN CTRL V/V	300mm
469	CONDS POLISHER 1 C VENT BIN CTRL V/V	50mm
470	CONDS POLISHER 1 C DRN WTR OUTL CTRL V/V	100mm
471	CONDS POLISHER 1C AIR & TRF WTR CTRL V/V	100mm
472	CONDS POLISHER 1 C FIL WTR INL CTRL V/V	300mm
473	Conds polisher 1C Inl isol bin ctrl v/v	300mm
474	CPP 1C OUTL BIN CTRL V/V (MOVB)	300mm
475	CPP EMERGENCY BYP BIN CNTRL VV	50mm
476	CPP BYPASS MOD CNTRL V/V	300mm

477	CPP RESIN MIXING AIR PRESS REG V/V	50mm
478	CPP DIRTY RESIN TRN FIL LINE VENT VLV	50mm
479	CPP DIRTY RESIN TRN WTR SEC LINE VENT VLV	50mm
480	CPP REFILL LINE VENT VLV	50mm
481	CPP DIRTY RESIN TRNS WTR SEC LINE VENT VLV	50mm
482	CONDENSATE POLISHER A OUTLET RESIN TRAP	300mm
483	CONDENSATE POLISHER B OUTLET RESIN TRAP	300mm
484	CONDENSATE POLISHER C OUTLET RESIN TRAP	300mm
485	BFPT EXTRACTION PUMP SUC STRAINER A	300mm
486	BFPT EXTRACTION PUMPS SUC STRAINER B	300mm
487	BFPT SAE AIR VALVES	200mm
488	BFPT SAE AIR VALVES	200mm
489	BFPT SAE AIR VALVES	200mm
490	BFPT SAE AIR VALVES	200mm
491	BFPT CONDENSER LEVEL CONTROL VALVE	250mm
492	BFPT VACUUM BREAKER I/V	80mm
493	BFPT CDV SPRAY VALVE	50mm
494	BFPT CONDENSER LEVEL CONTROL VALVE	250mm
495	BFPT EP A DISCH NRV	100mm
496	BFPT EP B DISCH NRV	100mm
497	BFPT EP A SUC IV	200mm
498	BFPT EP B SUC IV	200mm
499	BFPT EP A DISCH IV	150mm
500	BFPT EP B DISCH IV	150mm
501	BFPT EP A RECIRC IV	50mm
502	BFPT EP B RECIRC IV	50mm
503	BFPT COND CTRL ARGV IV	25mm

504	BFPT COND DRN/DTR IV	25mm
505	BFPT COND CTRL ARGV FLG IV	25mm
506	MC/BFPT INTERCONNECTOR	300mm
507	BFPT CONDENSER	300mm
508	BURSTING DISCS	100mm
509	BFPT PIPE DRN STM TRAP	100mm
510	BFPT PIPE DRN STM TRAP	100mm
511	OIL COOLERS CW INLET AND OUTLET ISOLATING VALVES	150mm
512	OIL COOLERS CW INLET AND OUTLET ISOLATING VALVES	150mm
513	OIL COOLERS CW INLET AND OUTLET ISOLATING VALVES	150mm
514	OIL COOLERS CW INLET AND OUTLET ISOLATING VALVES	150mm
515	EFP A LEAK OFF NRV	80mm
516	EFP B LEAK OFF NRV	80mm
517	SFP LEAK OFF NRV	80mm
518	BFPT BOOSTER P/P COOLING INLET I/V (25 mm)	25mm
519	BFPT BOOSTER P/P COOLING OUTLET I/V (25 mm)	25mm
520	BFPT A BOOSTER P/P COOLING INLET I/V (25 mm)	25mm
521	BFPT BOOSTER P/P COOLING OUTLET I/V (25 mm)	25mm
522	EFP B BOOSTER P/P COOLING INLET I/V (25 mm)	25mm
523	EFP B BOOSTER P/P COOLING OUTLET I/V (25 mm)	25mm
524	EFP A LEAK OFF CONTROL VALVE (100 mm)	100mm
525	EFP B LEAK OFF CONTROL VALVE (100 mm)	100mm
526	EFP A BALANCE LINE IV (100 mm)	100mm

527	EFP B BALANCE LINE IV (100 mm)	100mm
528	SFP BALANCE LINE IV (100 mm)	100mm
529	EFP A ATT. SPRAYWATER HIV (65 mm)	65mm
530	EFP B ATT. SPRAYWATER HIV (65 mm)	65mm
531	SFP ATT. SPRAYWATER HIV (80 mm)	80mm
532	SFP LEAK OFF VALVE (130 mm)	130mm
533	EFP A SUC DRN / EV V (100 mm)	100mm
534	EFP A SUC DRN / DTR V	25mm
535	EFP A SUC DRN IV (100 mm)	100mm
536	EFP A SUC DRN / DTR IV (25 mm)	25mm
537	EFP B SUC DRN / EV V (100 mm)	100mm
538	EFP B SUC DRN / DTR V (100 mm)	100mm
539	EFP B SUC DRN IV (100 mm)	100mm
540	EFP B SUC DRN / DTR IV (25 mm)	25mm
541	SFP SUC DRN / EV V (100 mm)	100mm
542	SFP SUC DRN / DTR V (100 mm)	100mm
543	SFP SUC DRN IV (100 mm)	100mm
544	SFP SUC DRN / DTR IV (25 mm)	25mm
545	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
546	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
547	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
548	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
549	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
550	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
551	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
552	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm

553	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
554	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
555	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
556	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
557	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
558	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
559	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
560	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
561	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
562	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
563	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
564	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
565	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
566	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
567	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
568	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
569	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
570	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
571	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
572	EFP A SUCTION VALVE (400 mm)	400mm
573	EFP B SUCTION VALVE (400 mm)	400mm
574	SFP SUCTION VALVE (500 mm)	500mm
575	MAIN FEED REG VALVE (400 mm)	400mm

576	MAIN FEED REG VALVE BYPASS (40 mm)	50mm
577	FEED REG CONTROL VALVE A (250 mm)	250mm
578	FEED REG CONTROL VALVE B (250 mm)	250mm
579	FEED REG MOTOR ISOLATING V/V A (250 mm)	250mm
580	FEED REG MOTOR ISOLATING V/V B (250 mm)	250mm
581	FEED REG MOTOR ISOLATING V/V A BYPASS (25mm)	25mm
582	FEED REG MOTOR ISOLATING V/V B BYPASS (25mm)	25mm
583	FEED REG HAND ISOLATING V/V A (250 mm)	250 mm
584	FEED REG HAND ISOLATING V/V B (250 mm)	250 mm
585	FEED REG HAND ISOLATING V/V A BYPASS (25mm)	25mm
586	FEED REG HAND ISOLATING V/V B BYPASS (25 mm)	25 mm
587	SEAL WATER ISO V/V 'A' (SUCTION) (125mm)	125mm
588	SEAL WATER ISO V/V 'B' (SUCTION) (125mm)	125mm
589	SEAL WATER ISO V/V 'A' (DISCH) (80mm)	80mm
590	SEAL WATER ISO V/V 'B' (DISCH) - (80mm)	80mm
591	SEAL WATER ISO V/V 100% BFP (50mm)	50mm
592	SEAL WATER ISO V/V 100% BFP (50mm)	50mm
593	SEAL WATER BYP ISO V/V 100% BFP (50mm)	50mm
594	SEAL WATER ISO V/V 100% EFP A (40 mm)	40mm
595	SEAL WATER ISO V/V 100% EFP A (40 mm)	40mm
596	SEAL WATER BYP ISO V/V 100% EFP (40 mm)	40mm
597	SEAL WATER ISO V/V 100% EFP B (40 mm)	40mm
598	SEAL WATER ISO V/V 100% EFP B (40 mm)	40mm
599	SEAL WATER BYP ISO V/V 100% EFP (40 mm)	40mm
600	GLAND DRAIN ISO V/V 'A' (SUCTION) - (80mm)	80mm
601	GLAND DRAIN ISO V/V 'B' (SUCTION) - (80mm)	80mm
602	GLAND DRAIN ISO V/V 'A' (DISCH) - (80mm)	80mm
603	GLAND DRAIN ISO V/V 'B' (DISCH) - (80mm)	80mm

605	SEAL WATER NON RETURN 'A' - (80mm)	80mm
606	SEAL WATER NON RETURN 'B' - (80mm)	80mm
607	GLAND DRAIN NON RETURN V/V 'A' - (80mm)	80mm
608	GLAND DRAIN NON RETURN V/V 'B' - (80mm)	80mm
609	SEAL WATER CNTRL V/V ON EFP A	80mm
610	SEAL WATER CNTRL V/V ON EFP B	80mm
611	SEAL WATER CNTRL V/V ON SFP	80mm
612	BLR AUX COOLING RETURN STRAINER MAIN	300mm
613	BLR AUX COOLING RETURN STRAINER STANDBY	250mm
614	BLR AUX COOLING TANK SUPPLY STRAINER	250mm
615	BLR AUX COOLING RETURN CONTROL V/V (150MM)	150mm
616	BLR AUX COOLING RETURN IV 1 (150MM)	150mm
617	BLR AUX COOLING RETURN IV 2 (150MM)	150mm
618	BLR AUX COOLING SUP IV 1	150mm
619	BLR AUX COOLING SUP IV 2 (150MM)	150mm
620	BLR AUX COOLING RETURN BYPASS V/V (150MM)	150mm
621	BLR AUX COOLING SUP BYPASS V/V (150NB)	150mm
622	BLR AUX COOLING RETURN BYPASS V/V (50MM)	50mm
623	BLR AUX CLG H/EXCH MAIN CW SUP IV (300MM)	300mm
624	BLR AUX CLG H/EXCH CW IV (300MM)	300mm
625	Blr Aux Clg H/EXCH A CW Supply IV (8")	200mm
626	Blr Aux Clg H/EXCH Supply IV (8")	200mm
627	BLR AUX CLG H/EXCH A CW RTN IV (250MM)	250mm
628	BLR AUX CLG H/EXCH B CW RTN IV (250MM)	250mm
629	Blr Aux Clg Wtr Heat A Outlet IV (8")	200mm
630	Blr Aux Clg Wtr Heat Exchanger A INL IV (8")	200mm
631	Blr Aux Clg Wtr Heat Exchanger B INL IV (8")	200mm

632	Blr Aux Clg Wtr Heat Exchanger B OUTL IV (8")	200mm
633	Blr Aux Clg Clg Rtn IV (10")	250mm
634	Blr Aux Clg Clg Rtn IV (10")	250mm
635	Blr Aux Clg Clg Rtn Byp IV (10")	250mm
636	Blr Aux Clg Clg Rtn Byp IV (10")	250mm
637	DEMIN WATER MAKE-UP TANK	400mm
638	COLD REHEAT SUPPLY IV	200mm
639	AUX STEAM SUPPLY NRV	200mm
640	AUX STEAM SUPPLY IV	200mm
641	AUX STEAM MANIFOLD DRN TRAP BYPASS V/V	25mm
642	AUX STEAM MANIFOLD DRN STEAM	50mm
643	AUX STEAM MANIFOLD DRAIN TRAP INLET IV	50mm
644	AUX STEAM MANIFOLD DRN TRAP OUTLET IV	50mm
645	HP/IP SUPPLY VLV	50mm
646	HP/IP DUMP VLV	300mm
647	HP/IP DUMP DESUPERHEATER SPRY WATER VLV	50mm
648	LP SUPPLY VALVE	50mm
649	LP DESUPERHEATER SPRAY WATER VLV	50mm
650	HP STEAM CHEST LH UPR DRN MARTYR IV	50mm
651	HP LWR LOOP PIPE DRAIN MARTYR ISOL V/V	50mm
652	HP CYL LH COLD REHEAT DRAIN MARTYR ISOL V/V	50mm
653	HP CYL RH COLD REHEAT DRAIN MARTYR ISOL V/V	50mm
654	IP STEAM CHEST LH UPR DRAIN MASTER ISOL V/V	50mm
655	IP STEAM CHEST RH UPR DRAIN MASTER ISOL V/V	50mm
656	IP LOWER LOOP PIPE DRAIN MARTYR ISOL V/V	50mm

657	LH COLD REHEAT EMERGENCY DRAIN NOZZLE TRAP ISOL V/V	50mm
658	GESTRA DRAIN FROM LH COLD REHEAT ISOL V/V	50mm
659	LH COLD REHEAT EMERGENCY DRAIN NOZZLE TRAP ISOL V/V	50mm
660	GESTRA DRAIN FROM RH COLD REHEAT ISOL V/V	50mm
661	GESTRA DRAIN FROM RH COLD REHEAT ISOL V/V	50mm
662	GESTRA DRAIN FROM LH COLD REHEAT ISOL V/V	50mm
663	LP HOOD SPRAY DUPLEX STRAINER	100mm
664	OVERHAUL LP TURBINE SPRAY SUPPLY ISOL V/V	100mm
665	OVERHAUL LP TURBINE EXHAUSTER SPRAY COOLING NOZZLE	25mm
666	OVERHAUL LP TURBINE SPRAY SUPPLY NON RETURN V/V	100mm
667	OVERHAUL LP TURBINE SPRAY PRESS SUSTAINING V/V	25mm
668	OVERHAUL LP TURBINE SPRAY CONTROL V/V	100mm
669	OVERHAUL LP TURBINE SPRAY CONTROL OUTLET ISOL V/V	100mm
670	OVERHAUL LP TURBINE SPRAY CONTROL BYPASS V/V	100mm
671	OVERHAUL DC EMERG SPRW P/P SUCT ISOL V/V	100mm
672	OVERHAUL DC EMERG SPRW P/P DISCHARGE ISOL V/V	100mm
673	OVERHAUL DC EMERGENCY SPRAY WATER PUMP DISCHARGE NON RETURN V/V	100mm
674	OVERHAUL LP EXHAUST SPRW FILTER DIFF PRESS IND ISOL V/V	25mm
675	OVERHAUL DC EMERG SWTR P/P DRAIN ISOL V/V	25mm
676	OVERHAUL CONDENSATE EXTRACTION P/P PRESS SW ISOL V/V	25mm
677	OVERHAUL CONDENSATE EXTRACTION P/P PRESS SW ISOL V/V	25mm
678	OVERHAUL LP EXHAUST SPRAY WTR SUPPLY STRAINER DIFF PRESS IND	100mm
679	OVERHAUL DUPLEX STRAINER VENT ISOL V/V	25mm
680	OVERHAUL LP SPRAY COOLING WTR FLOW IND	25mm
681	OVERHAUL DUPLEX STRAINER DRAIN ISOL V/V	25mm

682	OVERHAUL DUPLEX STRAINER VENT ISOL V/V	25mm
683	OVERHAUL LP TURB SPRAY INLET ISOL V/V	25mm
684	OVERHAUL DUPLEX STRAINER DRAIN ISOL V/V	25mm
685	OVERHAUL EMRG SWTR SUPPLY P/P DISCHARGE PRESS SW ISOL V/V	25mm
686	OVERHAUL LP EXHAUST SPRW FILTER DIFF PRESS IND ISOL V/V	25mm
687	OVERHAUL LP TURBINE SPRAY SUPPLY DRAIN ISOL V/V	25mm
688	OVERHAUL LP TURBINE SPRAY SUPPLY DRAIN ISOL V/V	25mm
689	OVERHAUL DC EMRG SPRW SUPPLY P/P DISCHARGE PRESS SW ISOL V/V	25mm
690	OVERHAUL CONDENSATE EXTRACTION P/P OUTLET PRESS SWITCH ISOL V/V	25mm
691	OVERHAUL DC EMRG SPRW SUPPLY P/P DISCHARGE PRESS SW ISOL V/V	25mm
692	LP DEMIN RANGE TO RFWT INLET V/V	300mm
693	LP HTR 3 CTRL ARGV VENT V/V	25mm
694	EFP A ATT SPRAYWATER NRV	80mm
695	EFP B ATT SPRAYWATER NRV	80mm
696	SFP REHEAT SPRAYWATER NRV	80mm
697	BLR AUX COOLING SUP CONTROL V/V (150MM)	150mm
698	BLR AUX COOLING SUP DRAIN CONTROL V/V (50MM)	50mm
699	BLR AUX COOLING SUP DRAIN V/V (50MM)	50mm
700	CPP RINSE WTR DRAIN BIN CTRL V/V	100mm
701	U4 CPP CLN RES TRF INLET BIN CTRL V/V	100mm
702	CLEAN RES TRF TO U5 TO 6 BIN CTRL V/V	100mm
703	DIRTY RES TRF FROM U5 TO 6 BIN CTRL V/V	100mm
704	U4 CPP DTY RES TRF OUTL BIN CTRL V/V	100mm
705	U4 CPP DTY RES TRF LINES FLUSH WTR CTRLV/V	100mm
706	U4 CPP CLN RESTRF LINES FLUSH WTR CTRLV/V	100mm

707	CPP MIXING AIR & DTY RESTRF CTRL V/V	100mm
708	CPP DTY RES TRF WTR SUPL BIN CTRL V/V	100mm
709	CPP MIXING & DTY RESTRF AIR SUPL CTRLV/V	100mm
710	CPP CLN RESTRF WTR TO RECOV WTR CTRLV/V	100mm
711	CPP DIRTY RES TRF LINE FIL BIN CTRL V/V	100mm
712	CLN RES TRF WTR TO WASTE BIN CTRL V/V	100mm
713	CPP REFILL BIN CONTROL V/V	100mm
714	CONDS POLISHER 4 A INL MOD CTRL V/V (replace)	50mm
715	CONDS POLISHER 4 A CLN RESIN CTRL V/V	50mm
716	CONDS POLISHER 4 A DTY RES OUTL CTRL V/V	50mm
717	CONDS POLISHER 4 A SEC RES TRF CTRL V/V	50mm
718	CONDS POLISHER 4 A OUTL MOD CONTROL V/V (replace	50mm
719	CONDS POLISHER 4 B INL MOD CTRL V/V (replace)	50mm
720	CONDS POLISHER 4 B CLN RESIN CTRL V/V	50mm
721	CONDS POLISHER 4 B DTY RES OUTL CTRL V/V	50mm
722	CONDS POLISHER 4 B SEC RES TRF CTRL V/V	50mm
723	CONDS POLISHER 4 B OUTL MOD CONTROL V/V (replace	50mm
724	CONDS POLISHER 4 C INL MOD CTRL V/V (replace)	50mm
725	CONDS POLISHER 4 C CLN RESIN CTRL V/V	50mm
726	CONDS POLISHER 4 C DTY RES OUTL CTRL V/V	50mm
727	CONDS POLISHER 4 C SEC RES TRF CTRL V/V	50mm
728	CONDS POLISHER 4 C OUTL MOD CONTROL V/V (replac	50mm
729	CLEAN RES TRF WTR OUTL LINE VENT V/V	50mm
730	CPP DIRTY RES TRF WTR SUPPLY LINE VNT V/V	50mm
731	CPP MIXNG AIR RES TRF SUPL LINE DRN V/V	50mm

732	CPP INLET SAMPLING LINE SECONDARY COOLER	50mm
733	CPP INL SMPLN LINE LP CAPLRY SMPLR CLR	50mm
734	CPP A SAMPLING LINE SECONDARY COOLER	50mm
735	CPP A SMPLN LINE LP CAPILLARY SMPLR CLR	50mm
736	CPP B SAMPLING LINE SECONDARY COOLER	50mm
737	CPP B SMPLN LINE LP CAPILLARY SMPLR CLR	50mm
738	CPP C SAMPLING LINE SECONDARY COOLER	50mm
739	CPP C SMPLN LINE LP CAPILLARY SMPLR CLR	50mm
740	CPP OUTL SAMPLING LINE SECONDARY COOLER	50mm
741	CPP OUTL SMPLN LINE LP CAPLRY SMPLR CLR	50mm
742	HOT COND SAMPLING LINE SECONDARY COOLER	50mm
743	CIRC WTR SMPLN LINE DISTRIBUTION MFLD	50mm
744	CIRC WTR SMPLN LINE DISTRIBUTION MFLD	50mm
745	CPP INL SMPLN LINE DISTRIBUTION MFLD	50mm
746	CPP OUTL SMPLN LINE DISTRIBUTION MFLD	50mm
747	HOT COND SMPLN LINE DISTRIBUTION MFLD	50mm
748	HP HTR 5B FW OUTL PP IV	25mm
749	HP HTR 5B FW INL DRN IV	25mm
750	HP HTR 5B FW INL DRN/DTR IV	25mm
751	HP HTR 6B FW OUTL DRN/DTR IV	25mm
752	HP HTR 6B FW OUTL DRN/DTR IV	25mm
753	HP HTR 5B FW INL DRN/EV IV	25mm
754	HP HTR 6B FW OUTL P/P IV	25mm
755	HP HTR 5B EMERGENCY DRN LINE DRN/EV IV	25mm
756	BLR AUX CLG P/P A NRV	25mm
757	BLR AUX CLG P/P B NRV	25mm
758	BLR AUX CLG P/P C NRV	25mm

TUTUKA U1 IN TURBINE VALVES (72)		
QIP	TASK NAME	SIZE
MAIN CONDENSER		
1	CW DOORS (3 Off)	500mm
2	CW DOORS (3 Off)	500mm
3	MAIN CONDENSER	500mm
4	ATMOSPHERIC TANK	300mm
TAPROGGE SYSTEM		
5	TAPROGGE SCREEN _ LOWER	80mm
6	TAPROGGE SCREEN _ UPPER	80mm
7	T2 SUCTION VALVES	80mm
8	T2 SUCTION VALVES	80mm
9	T2 SUCTION VALVES	80mm
10	T2 SUCTION VALVES	80mm
11	T2 SUCTION VALVES	80mm
12	T2 SUCTION VALVES	80mm
13	T2 SUCTION VALVES	80mm
14	T2 SUCTION VALVES	80mm
15	TAPROGGE ACCUMULATOR INL IV	100mm
16	TAPROGGE ACCUMULATOR OUTL IV	100mm
LP HEATER 3		
17	LPH 3 DRN PMP SUC STRAINER	300mm
18	LPH 3 DRN PMP SUC STRAINER	300mm
CONDENSATE EXTRACTION PUMP (CEP)&DA		
19	CLC(STROKE CHECK AND LEAK TEST TO BE WITNESS BY ENGINEER)	300mm
20	DLC	300mm
HP HEATERS		

21	HP HTR 5A (STEAM SIDE)	300mm
22	HP HTR 6A (STEAM SIDE)	300mm
23	HP HTR 5B (STEAM SIDE)	300mm
24	HP HTR 6B (STEAM SIDE)	300mm
CONDENSATE EXTRACTION PUMPS		
25	EXT P/P A 1ST STAGE DISCH NRV	400mm
26	EXT P/P B 1ST STAGE DISCH NRV	400mm
27	EXT P/P 2ND STAGE DISCH NRV	400mm
28	EXT P/P 2ND STAGE DISCH NRV	400mm
GSC AND DRAINS TANK (Non Valve)		
29	GLAND STEAM CONDENSER	800mm
30	DRAIN TANK	800mm
31	GSC DRAIN TANK DRN TO COND V/V	25mm
SECONDARY CW SYSTEM (SCW)		
32	SEC CW (GEN)P/P B DISCH IV	400mm
33	SEC CW (GEN) EXCESS RETURN V	400mm
34	SEC CW (GEN) EXCESS RETURN V IV	400mm
35	SEC CW (GEN) P/P A DISCH NRV	400mm
36	SEC CW (GEN) P/P A DISCH IV	400mm
37	SEC CW (GEN) P/P B DISCH NRV	400mm
38	SEC CW (GEN)P/P B DISCH IV	400mm
BFPT SAE AIR VALVES		
39	BFPT SAE ISOLATING VALVE A	300mm
40	BFPT SAE AIR VALVES	300mm
41	BFPT SAE AIR VALVES	300mm
42	BFPT SAE AIR VALVES	300mm
43	MC/BFPT INTERCONNECTOR	300mm
44	BFPT CONDENSER LEVEL CONTROL VALVE	200mm

45	BFPT VACUUM BREAKER I/V	100mm
46	BFPT CDV SPRAY VALVE	50mm
47	BFPT CONDENSER LEVEL CONTROL VALVE	200mm
48	BFPT CONDENSER	400mm
SCW (EJECTOR SYSTEM)		
49	WAE A1 CW Inlet CTRL vlv	300mm
50	WAE B1 CW Inlet CTRL vlv	300mm
51	WAE B2 WTR INLET VALVE	300mm
52	WAE A2 CW Inlet CTRL vlv	300mm
53	WAE B2 CW Inlet CTRL vlv	300mm
54	WAE A1 CW INLET STRAINER	300mm
55	WAE B1 CW INLET STRAINER	300mm
56	WAE A2 CW INLET STRAINER	300mm
57	WAE B2 CW INLET STRAINER	300mm
58	WAE A1 SUCTION CNTRL V/V	250mm
59	WAE A2 SUCTION CONTROL V/V	250mm
60	WAE B1 SUCTION CONTROL V/V	250mm
61	WAE B2 SUCTION CNTRL VV	250mm
62	WAE A2 Bellow (2 off)	250mm
63	WAE A1 Bellow (2 off)	250mm
64	WAE B1 Bellow (2 off)	250mm
65	WAE B2 Bellow (2 off)	250mm
66	SEC CW (GEN) EXCESS RETURN VALVE	400mm
67	SEC CW (GEN) EXCESS RETURN ISOLATING VALVE	400mm
GLAND STEAM SYSTEM		
68	HP/IP DUMP VALVE	300mm
LP SPRAY COOLING SYSTEM		
69	LP SPRAY COOLING DUPLEX STRAINER	100mm

70	HP HTR 6A EMERG DRN/HOT COND CNTRL VALVE	300mm
71	HP HTR 6B EMERG DRN/HOT COND CNTRL VALVE	300mm
72	HP HTR 5B DRN TO DST CNTRL VALVE	300mm

Tutuka Boiler Valves GO/MGO/IR (269)		
QIP	TOTAL VALVES	SIZE
	BOILER PRESSURE PARTS : SOOTBLOWER VALVE STATION	
1	S/H HAND ISOLATING VLV	200mm
2	R/H HAND ISOLATING VLV	200mm
3	R/H NRV	200mm
4	S/H MOT STOP VLV	50mm
5	R/H MOT STOP VLV	50mm
6	S/H STRAINER	200mm
7	R/H STRAINER	200mm
8	S/H REG VLV _cut out	200mm
9	S/H REG VLV _cut out	200mm
10	S/H BALANCE LINE VLV _cut out	25mm
11	R/H BALANCE LINE V/V _cut out	25mm
	SOOTBLOWER SECTION VALVE	
12	S/BLWR LHB MOT	150mm
13	S/BLWR LHB MOT	150mm
14	S/BLWR LHB MOT	150mm
15	S/BLWR LHB MOT	150mm
16	S/BLWR RHT MOT	150mm

17	A/H S/BLWR MOT	150mm
18	A/H S/BLWR MOT	150mm
19	A/H S/BLWR MOT	150mm
20	A/H S/BLWR MOT	150mm
	SOOTBLOWER DRAIN LINES	
21	S/BLWR LHB DRAIN	50mm
22	S/BLWR LHT DRAIN	50mm
23	S/BLWR RHB DRAIN	50mm
24	S/BLWR RHT DRAIN	50mm
25	S/BLWR LHB DRAIN	50mm
26	S/BLWR LHB DRAIN	50mm
27	S/BLWR S/H DRAIN	50mm
28	S/BLWR S/H DRAIN	50mm
	LP BYPASS VALVE SYSTEM	
29	LP BYPASS SW ISOL VV(150MM PEGLER & LOUDEN)	150mm
30	LP BYPASS WARNING DRN VALVE RH	50mm
31	LP BYPASS WARNING DRN VALVE LH	50mm
32	LP BYPASS WARNING LINE ISOL VALVE	50mm
33	LP BYPASS LH DRAIN TO CONDENSOR MASTER ISOL V/V	50mm
34	LP BYPASS LH DRAIN TO CONDENSOR MARTYR ISOL V/V	50mm
35	LP BYPASS RH ISOL V/V BYPASS WARNING LINE ISOL V/V	50mm
36	LP BYPASS RH DRAIN TO CONDENSOR MASTER ISOL V/V	50mm
	CIRCULATING VALVES SYSTEM	
37	CIRC P/P SUCTION MOT V/V	400mm

38	CIRC P/P SUCTION MOT V/V BYPASS(32MM VKS1 SEMPELL)	50mm
39	CIRC P/P "A" OUTLET REG MOT VALVE(250MM W&T)	250mm
40	CIRC P/P "B" OUTLET REG MOT V/V(250MM W&T)	250mm
41	CIRC P/P DISCHARGE MOT V/V	350mm
42	CIRC P/P DISCHARGE MOT V/V BYPASS(32mm sempell)	50mm
43	CIRC PMP A NON RET (250MM SEMPELL)	250mm
44	CIRC PMP B NON RET (250MM SEMPELL)	250mm
45	CIRC PMP STRAINER	400mm
46	CIRC PMP LEAK OFF(125MM SEMPELL GS2)	125mm
47	CIRC PMP LEAK OFF NRV (80MM SEMPELL)	80mm
48	CIRC PMP B LEAK OFF NRV	80mm
	AUXILIARY STEAM RANGE SYSTEM	
49	CR MAIN ISOLATING MOT VALVE	250mm
50	AUX STM REG V/V SEMPELL (200MM) 2off Motaflex	200mm
51	AUX ISOLATING VALVE (350MM SEMPELL)	350mm
52	STM TRAP ISOL VALVE	25mm
53	AUX STM TRAP BYPASS MOT VALVE (25MM SEMPELL)	25mm
54	STM TRAP ISOL VALVE	25mm
55	STM TRAP ISOL VALVE	25mm
56	STM TRAP	25mm
57	AUX STM NRV	200mm
58	AUX STM MAIN MOT ISOL VALVE (250MM SEMPELL)	250mm
59	AUX BTR COMMON ISOL VALVE (15MM SEMPELL)	15mm
60	AUX STM TRAP BYPASS MOT VALVE (25MM SEMPELL)	25mm

61	STM TRAP	25mm
62	STM TRAP ISOL VALVE	25mm
BOILER WARMING SYSTEM		
63	BLR WARM UP	200mm
64	BLR WARM UP	200mm
65	BLR WARM UP NRV	150mm
MAIN STEAM SYSTEM		
66	ISOLATING VALVE	25mm
67	ISOLATING VALVE	25mm
68	ISOLATING VALVE	25mm
COLLECTING VESSEL DRAIN AND BLOWDOWN SYSTEM		
69	BLOW DOWN VESSEL REG MOT ISOL "A" (200MM SEMPELL)	200mm
70	BLOW DOWN REG ISOL MOT VALVE "A" BYPASS(25MM SEMPELL VKS 1)	25mm
71	BLOW DOWN VESSEL REG ISOL V "B"(200 SEMPELL GS 2)	200mm
72	BLOW DOWN REG ISOL MOT VALVE "B" BYPASS (25MM SEMPELL)	25mm
57ML BOILER RHS VENT STATION		
73	ECON INLET VENT	50mm
74	ECON INLET VENT	50mm
75	DIV WALL OUTLET VENT	50mm
76	DIV WALL OUTLET VENT I/V	50mm
77	EVAP OUTLET VENT	50mm
78	EVAP OUTLET VENT I/V	50mm
79	SH 1 LHS VENT	50mm
80	SH 1 LHS VENT AND ISOLATION	50mm

81	SH 1 RHS VENT AND ISOL	50mm
82	SH 1 RHS VENT V/V	50mm
83	SH 2 INLET 1 AND 2 VENT	50mm
84	SH2 INLET 3 AND 4 VENT	50mm
85	SH 2 INLET 1 AND 2 VENT AND ISOLATION	50mm
86	SH 2 INLET 3 AND 4 VENT AND ISOLATION	50mm
87	SH ATT 3.1 AND 3.2 VENT	50mm
88	SH ATT 3.3 AND 3.4 VENT	50mm
89	SH ATT 3.1 AND 3.2 VENT AND ISOLATION	50mm
90	SH ATT 3.3 AND 3.4 VENT AND ISOLATION	50mm
91	SH 4 OUTLET HEADER 1 VENT	50mm
92	SH 4 OUTLET HEADER 2 VENT	50mm
93	SH 4 OUTLET HEADER 1 VENT AND ISOLATION	50mm
94	SH 4 OUTLET HEADER 2 VENT AND ISOLATION	50mm
95	RH 1 INLET LHS VENT	50mm
96	RH 1 INLET RHS VENT	50mm
97	RH 1 INLET LHS VENT AND ISOLATION	50mm
98	RH 1 INLET RHS VENT AND ISOLATION	50mm
	16 ML BOILER RHS DRAIN STATION	
99	S/H 1.1 OUTLET HDR DRAIN VV	50mm
100	S/H 1.1 OUTLET HDR DRAIN ISOL VV	50mm
101	S/H 1.2 OUTLET HDR DRAIN VV	50mm
102	S/H 1.2 OUTLET HDR DRAIN ISOL VV	50mm
103	S/H ATT 2.1 + 2 DRAIN VV	50mm

104	S/H ATT 2.1 + 2 DRAIN ISOL VV	50mm
105	S/H ATT 2.3 + 4 DRAIN VV	50mm
106	S/H ATT 2.3 + 4 DRAIN ISOL VV	50mm
107	S/H 3.1 INL HDR DRAIN VV	50mm
108	S/H 3.1 INL HDR DRAIN ISOL VV	50mm
109	S/H 3.2 INL HDR DRAIN VV	50mm
110	S/H ATT 3.1 + 2 DRN V/V	50mm
111	S/H ATT 3.1 + 2 DRN ISOL V/V	50mm
112	S/H ATT 3.3 + 4 DRN V/V	50mm
113	S/H ATT 3.3 + 4 DRN ISOL V/V	50mm
114	RH OUT HDR 1 DRAIN ISOL VV	50mm
115	RH OUT HDR 2 DRAIN ISOL VV	50mm
116	RH OUT HDR 1 DRAIN VV	50mm
117	RH 2 OUT HDR 2 DRAIN VV	50mm
118	SH COLLECTION DRAIN VV	50mm
119	SH COLL ISOL AND DRAIN V/V	50mm
120	RH COLLECTION DRAIN	50mm
	2 ML BOILER FRONT DRAIN STATION	
121	HP BYPASS SPR WATER DRAIN V/V	50mm
122	HP BYPASS SPR WATER DRAIN I/V	50mm
123	EVAP COIL DRN ISOL V/V	50mm
124	EVAP COIL DRN ISOL V/V	50mm
125	FEEDWATER DRAIN HIV(25MM VKS1)	50mm
126	FEEDWATER DRAIN ISOL HIV	50mm

127	DIV WALL DRAIN V/V	50mm
128	DIV WALL DRAIN I/V	50mm
129	F.INLET HELICAL EVAP DRAIN V/V LH	50mm
130	F.INLET HELICAL EVAP DRAIN V/V LH	50mm
131	F.INLET HELICAL EVAP DRAIN V/V RH	50mm
132	R.INLET HELICAL EVAP DRAIN V/V LH	50mm
133	R.INLET HELICAL EVAP DRAIN ISOL V/VLH	50mm
134	R.INLET HELICAL EVAP DRAIN V/V RH	50mm
135	R.INLET HELICAL EVAP DRAIN ISOL V/V RH	50mm
136	UPPER EVAP INLET DRAIN V/V LH	50mm
137	UPPER EVAP INLET DRAIN I/V LH	50mm
138	UPPER EVAP INLET DRAIN VV RH(25MM SEMPELL VKS1)	50mm
139	UPPER EVAP INLET DRAIN ISOL VV RH(25MM SEMPELL VKS1)	50mm
140	CIRC PUMP A DRAIN V/V	50mm
141	CIRC PUMP A DRAIN V/V	50mm
142	CIRC PUMP B DRAIN V/V	50mm
	BLOWDOWN VESSEL MANIFOLD DRAIN STATION	
143	CR LEG DRAIN 1 NRV	50mm
144	CR LEG DRAIN 1 ISOL VALVE	50mm
145	CR LEG DRAIN 2 NRV	50mm
146	CR LEG DRAIN 2 ISOL VALVE	50mm
147	HR LEG DRAIN 2 ISOL VV	50mm
148	HR TURB LEG 1 DRAIN NRV	50mm
149	HR TURB LEG 2 DRAIN NRV	50mm

150	HR TURB LEG 3 DRAIN NRV	50mm
151	HR TURB LEG 4 DRAIN NRV	50mm
152	HR LRG DRAIN 1 ISOL VV	50mm
153	LP BYPASS 1 AND 2 DRAIN NRV	50mm
154	LP BYPASS 1 AND 2 DRAIN ISOL VALVE	50mm
155	HR/LP BYPASS 1 AND 2 WARMING NRV	50mm
156	HR AND LP BYPASS WARM ISOL VV	50mm
157	HR/LP BYPASS 3 AND 4 WARMING NRV	50mm
158	LP BYPASS 3 AND 4 WARMING NRV	50mm
159	LP BYPASS 3 AND 4 NRV	50mm
160	LP BYPASS 3 AND 4 DRAIN	50mm
161	HR LEG DRAIN 4 ISOL V/V	50mm
162	HR LEG DRAIN 4 ISOL V/V	50mm
163	MS TURB LEG 1 ISOL VALVE	50mm
164	MS LEG 2 DRAIN 1 NRV	50mm
165	MS TURB LEG 2 ISOL VALVE	50mm
166	MS LEG DRAIN 1 NRV	50mm
167	MS LEG 3 DRAIN NRV	50mm
168	MS TURB LEG 3 ISOL VALVE	50mm
169	MS LEG 4 NRV	50mm
170	MS TURB LEG 4 ISOL VALVE	50mm
171	MS TURB LEG WARM NRV	50mm
172	MS TURB LEG ISOL VALVE	50mm
173	LP BYPASS 1 AND 2 DRAIN MOT	50mm

174	LP BYPASS 3 AND 4 DRAIN MOT	50mm
175	GLND WARMING LINE ISOL V/V	50mm
176	MS TURB LEG WARM MOT ISOL VV	50mm
177	AUX STEAM NRV	50mm
178	R/H SAFETY V/V NRV	50mm
179	R/H VENT TUNDISH NRV	50mm
180	AUX RING DRAIN V/V	50mm
181	FEEDWATER NRV	50mm
182	RH ATT 1 RESIDUAL DRAIN	50mm
183	RH ATT 2 RESIDUAL DRAIN	50mm
184	RH ATT 3 RESIDUAL DRAIN	50mm
185	RH ATT 4 RESIDUAL DRAIN	50mm
186	RH ATT 1 RESIDUAL DRAIN AND ISOLATION	50mm
187	RH ATT 2 RESIDUAL DRAIN AND ISOLATION	50mm
188	RH ATT 3 RESIDUAL DRAIN AND ISOLATION	50mm
189	RH ATT 4 RESIDUAL DRAIN AND ISOLATION	50mm
190	RH FILLER	50mm
191	RH FILLER NON RET	50mm
192	HP BYPASS DRAIN VALVE	50mm
193	REHEATER INLET (SWEEPING / AIR ADMISSION VALVES)	50mm
	CIRCULATING SYSTEM	
194	CIRCULATING PUMP A	500mm
195	CIRCULATING PUMP B	500mm
	S/H SPRAYWATER VALVE SYSTEM	

196	S/H 1.1 SPRAY WTR ISOL MOT V/V A	150mm
197	S/H 1.1 SPRAY WTR ISOL MOT V/V B	150mm
198	S/H 1.1 SPRAY WTR ISOL V/V A	150mm
199	S/H 1.1 SPRAY WTR ISOL V/V B	150mm
200	S/H 1.2 SPRAY WTR ISOL MOT V/V A	150mm
201	S/H 1.2 SPRAY WTR ISOL MOT V/V B	150mm
202	S/H 1.2 SPRAY WTR ISOL V/V A	150mm
203	S/H 1.2 SPRAY WTR ISOL V/V B	150mm
204	S/H 2.1 SPRAY WTR ISOL MOT V/V A	150mm
205	S/H 2.1 SPRAYWATER ISOL MOT V/V B	150mm
206	S/H 2.1 SPRAYWATER ISOL V/V A	150mm
207	S/H 2.1 SPRAYWATER ISOL V/V B	150mm
208	S/H 2.2 SPRAYWATER ISOL MOT V/V A	150mm
209	S/H 2.2 SPRAYWATER ISOL MOT V/V B	150mm
210	S/H 2.2 SPRAYWATER ISOL V/V A	150mm
211	S/H 2.2 SPRAYWATER ISOL V/V B	150mm
212	S/H 2.3 SPRAYWATER ISOL MOT V/V A	150mm
213	S/H 2.3 SPRAYWATER ISOL MOT V/V B	150mm
214	S/H 2.3 SPRAYWATER ISOL V/V A	150mm
215	S/H 2.3 SPRAYWATER ISOL V/V B	150mm
216	S/H 2.4 SPRAY WTR ISOL MOT V/V A	150mm
217	S/H 2.4 SPRAYWATER ISOL MOT V/V B	150mm
218	S/H 2.4 SPRAY WTR ISOL MOT V/V A	150mm
219	S/H 2.4 SPRAY WTR ISOL MOT V/V B	150mm

220	S/H 3.1 SPRAYWATER ISOL MOT V/V A	150mm
221	S/H 3.1 SPRAYWATER ISOL MOT V/V B	150mm
222	S/H 3.1 SPRAYWATER ISOL V/V A	150mm
223	S/H 3.1 SPRAYWATER ISOL V/V B	150mm
224	S/H 3.2 SPRAYWATER ISOL MOT V/V A	150mm
225	S/H 3.2 SPRAYWATER ISOL MOT V/V B	150mm
226	S/H 3.2 SPRAYWATER ISOL V/V A	150mm
227	S/H 3.2 SPRAYWATER ISOL V/V B	150mm
228	S/H 3.3 SPRAYWATER ISOL MOT V/V A	150mm
229	S/H 3.3 SPRAYWATER ISOL MOT V/V B	150mm
230	S/H 3.3 SPRAYWATER ISOL V/V A	150mm
231	S/H 3.3 SPRAYWATER ISOL V/V B	150mm
232	S/H 3.4 SPRAYWATER ISOL MOT V/V A	150mm
233	S/H 3.4 SPRAYWATER ISOL MOT V/V B	150mm
234	S/H 3.4 SPRAYWATER ISOL V/V A	150mm
235	S/H 3.4 SPRAYWATER ISOL V/V B	150mm
	R/H SPRAYWATER VALVE SYSTEM	
236	R/H ATT 1 SPRAY WTR ISOL MOT V/V "A"	50mm
237	R/H ATT 1 SPRAY WTR ISOL MOT V/V "B"	50mm
238	R/H ATT 1 SPR WTR ISOL V/V "A"	50mm
239	R/H ATT 1 SPR WTR ISOL V/V "B"	50mm
240	R/H ATT 2 SPR WTR ISOL MOT V/V "A"	50mm
241	R/H ATT 2 SPR WTR ISOL MOT V/V "B"	50mm
242	R/H ATT 2 SPR WTR ISOL V/V "A"	50mm

243	R/H ATT 2 SPR WTR ISOL V/V "B"	50mm
244	R/H ATT 3 SPR WTR ISOL MOT V/V "A"	50mm
245	R/H ATT 3 SPR WTR ISOL MOT V/V "B"	50mm
246	R/H ATT 3 SPR WTR ISOL V/V "A"	50mm
247	R/H ATT 3 SPR WTR ISOL V/V "B"	50mm
248	R/H ATT 4 SPR WTR ISOL MOT V/V "A"	50mm
249	R/H ATT 4 SPR WTR ISOL MOT V/V "B"	50mm
250	R/H ATT 4 SPR WTR ISOL V/V "A"	50mm
251	R/H ATT 4 SPR WTR ISOL V/V "B"	50mm
	ADDITIONAL SCOPE	
252	HP BYPASS SW STOP VALVE	200mm
253	ISOLATING VALVE	25mm
254	ISOLATING VALVE	25mm
255	ISOLATING VALVE	25mm
256	ISOLATING VALVE	25mm
257	ISOLATING VALVE	25mm
258	HP BYPASS VALVE MONOSTAT ISOL VALVE 1	50mm
259	HP BYPASS VALVE MONOSTAT ISOL VALVE 2	50mm
260	HP BYPASS VALVE MONOSTAT ISOL VALVE 3	50mm
261	REHEAT SAFETY VALVE MONOSTAT ISOL VALVE 1	50mm
262	REHEAT SAFETY VALVE MONOSTAT ISOL VALVE 2	50mm
263	REHEAT SAFETY VALVE MONOSTAT ISOL VALVE 3	50mm
264	CIRC PUMP WARMING MASTER VALVE	25mm
265	CIRC PUMP WARMING MASTER CNTR VALVE	25mm

266	CIRC A WARMING NRV	25mm
267	CIRC B WARMING NRV	25mm
268	CIRC PUMP INJ ISOL	150mm
269	CIRC PUMP INJ MOT	50mm

Tutuka U1 IN Boiler Valves (21)		
QIP NO	Task Name	Size
1	MS LEG 1 MOT ISOL VV(50MM SEMPELL VKS1)	50mm
2	MS LEG 2 MOT ISOL VV(50MM SEMPELL VKS1)	50mm
3	MS LEG 3 MOT ISOL VV(50MM SEMPELL VKS1)	50mm
4	ME LEG 4 MOT ISOL VV(50MM SEMPELL VKS1)	50mm
5	HR LEG DRAIN 1 MOT ISOL VALVE(50MM SEMPELL VKS1)	50mm
6	HR LEG DRAIN 2 MOT ISOL VALVE(50MM SEMPELL VKS1)	50mm
7	HR LEG DRAIN 3 MOT ISOL VALVE(50MM SEMPELL VKS1)	50mm
8	HR LEG DRAIN 4 MOT ISOL VALVE(50MM SEMPELL VKS1)	50mm
9	TURB CR LEG DRN 1 MOT ISOL(50MM SEMPELL VKS1)	50mm
10	TURB CR LEG DRN 2 MOT ISOL(50MM SEMPELL VKS1)	50mm
CIRCULATING PUMPS		
11	CIRCULATING PUMP A	500mm
12	CIRCULATING PUMP B	500mm
AUX RANGE SYSTEM		
13	AUX STM REG V/V SEMPELL (200MM)	200mm
14	AUX STM MAIN MOT ISOL VALVE (250MM SEMPELL)	250mm
BLOWDOWN SYSTEM		

15	BLOW DOWN VESSEL REG 50% MOT VALVE A	25mm
16	BLOW DOWN VESSEL REG MOT ISOL "A" (200MM SEMPELL)	200mm
17	BLOW DOWN REG MOT ISOL "A" BYPASS (25MM SEMPELL)	25mm
18	BLOW DOWN REG MOT ISOL "B"	250mm
19	BLOW DOWN REG 50% MOT VALVE B	250mm
20	BLOW DOWN REG MOT ISOL "B" BYPASS	250mm
21	BLOW DOWN VESSEL MOT REG VALVE	250mm

Lethabo Power Station: Boiler Valves, Turbine Valves, and Commissioning - strip, inspect, blue, box and stroke. Estimate scope below for a GO/MGO/IR (subject to change):

LETHABO TURBINE VALVES GO/MGO/IR (758)		
QIP	MAIN CONDENSER	SIZE
1	CW DOORS (3 Off)	300mm
2	CW DOORS (3 Off)	300mm
3	MAIN CONDENSER	300mm
4	MAIN CONDENSER NECK	300mm
5	HOTWELL(2 OFF)	300mm
6	HOTWELL(2 OFF)	300mm
7	VACUUM BREAKER	300mm
8	HC DOG BONE FILLING IV	1"
9	CC DOG BONE FILLING IV	1"
10	NORMAL MU A HAND I/V	100mm
11	NORMAL MU B HAND I/V	100mm
12	DEMIN MAKE-UP B TO HOT COND	100mm
13	DEMIN MAKE-UP A TO HOT COND	100mm
14	DEMIN MAKE-UP EMERG TO COLD COND	300mm
15	CDV SPRAYWATER CONTR V	50mm

16	EXT P/P A 1ST STAGE DISCH NRV	300mm
17	EXT P/P B 1ST STAGE DISCH NRV	300mm
18	EXT P/P A 2ND STAGE DISCH NRV	300mm
19	EXT P/P B 2ND STAGE DISCH NRV	300mm
20	EXT P/P SUC LINE DRN V	150mm
21	EXT P/P 1ST STAGE RECIRC CNTR V	150mm
22	EXT P/P 1ST STAGE RECIRC DRN V	25mm
23	EXT P/P 1ST STAGE RECIRC VENT	25mm
24	EXT P/P 2ND STAGE RECIRC IV	300mm
25	EXT P/P 2ND STAGE RECIRC CNTR V	300mm
26	EXT P/P A 1ST STAGE SUCTION V/V	300mm
27	EXT P/P A 1ST STAGE SUC DRN V/V	300mm
28	EXT P/P B 1ST STAGE SUCTION V/V	300mm
29	EXT P/P B 1ST STAGE SUC DRN V/V	300mm
30	EXT P/P A 1ST STAGE DISCH I/V	300mm
31	EXT P/P A 1ST STAGE LEAK OFF TO CC IV	150mm
32	EXT P/P A 1ST STAGE STRAINER FILLING I/V	25mm
33	EXT P/P A 2ND STAGE DISCH ISOL BYP V	25mm
34	EXT P/P A 2ND STAGE DISCH IV	400mm
35	EXT P/P A 2ND STAGE SUCTION V	400mm
36	EXT P/P A 1ST STAGE DISCH STRAINER VENT V	25mm
37	EXT P/P A 1ST STAGE DRN V	25mm
38	EXT P/P A 1ST STAGE STRAINER DRN V	50mm
39	EXT P/P B 1ST STAGE DISCH IV	300mm
40	EXT P/P B 1ST STAGE LEAK OFF TO CC IV	150mm
41	EXT P/P B 2ND STAGE DISCH ISOL BYP V	300mm
42	EXT P/P B 2ND STAGE DISCH IV	300mm

43	EXT P/P B 2ND STAGE SUCTION V	300mm
44	EXT P/P B 1ST STAGE DISCH DRN V	300mm
45	EXT P/P B 1ST STAGE DISCH STRAINER VENT V	25mm
46	EXT P/P B 1ST STAGE STRAINER DRN V	25mm
47	CLC INLET I/V	400mm
48	CLC OUTL I/V	400mm
49	CLC BYPASS I/V	400mm
50	CLC(STROKE CHECK AND LEAK TEST TO BE WITNESS BY ENGINEER)	400mm
51	RFWT	300mm
52	EXT P/P STAGE 2 SUCTION TO RFWT V/V	300mm
53	GLAND STEAM CONDENSER	500mm
54	DRAIN TANK	500mm
55	GSC DRAIN TANK DRN TO COND V/V	50mm
56	GSC FAN A OUTLET CONTR V/V	250mm
57	GSC FAN A OUTLET V/V	250mm
58	GSC FAN B DRAIN DTR ISOL V/V	25mm
59	GSC FAN B OUTLET CONTR V/V	250mm
60	GSC FAN B OUTLET NRV	250mm
61	DRAIN COOLER	500mm
62	LP HEATER 1 & 2 (Condensate Side)	1.2m
63	LP HEATER 1 & 2 (Steam Side)	1.2m
64	LP HTR DRN COOLER INL IV BYP V	50mm
65	LP HTR DRN COOLER INL IV	300mm
66	LP HTR DRN COOLER OUTL IV BYP V	50mm

67	LP HTR DRN COOLER OUTL IV	300mm
68	LP HTR DRN COOLER BYP V	50mm
69	LP HTR DRN COOLER BYP V BYP V	300mm
70	DRAINS COOLER DRN V/V	25mm
71	LP HEATER 1 & 2 AND DRAINS COOLER CONTROL ARRANGEMENT	50mm
72	LP HEATER 1 & 2 AND DRAINS COOLER CONTROL ARRANGEMENT	50mm
73	LP HEATER 3 VESSEL (STEAM & FEEDWATER SIDE)	300mm
74	LP HEATER 3 CONTROL ARRANGEMENT	300mm
75	LP HTR 3 STM VENT TO COLD COND	50mm
76	LP HTR 3 EMERG DRN CNTRL V	250mm
77	LP HTR 3 B/S IV A	400mm
78	LP HTR 3 B/S A TO HOT COND DRN V/V	50mm
79	LP HTR 3 B/S IV B	400mm
80	LP HTR 3 B/S B TO HOT COND DRN V/V	50mm
81	LP HTR 3 EMERG DRN IV	50mm
82	LP HTR 3 CTRL ARGT 1 FLG IV	50mm
83	LP HTR 3 CTRL ARGT 1 IV	25mm
84	LP HTR 3 CTRL	50mm
85	LP HTR 3 CTRL ARGT 2 FLG IV	50mm
86	LP HTR 3 CTRL ARGT 2 IV	25mm
87	LP HTR 3 CTRL ARGT 2 IV	50mm
88	LP HTR 3 CTRL ARGT 3 FLG IV	50mm
89	LP HTR 3 CTRL ARGT 3 IV	25mm
90	LP HTR 3 CTRL ARGT 3 IV	50mm
91	LP HTR 3 LEVEL IV	50mm
92	LP HTR 3 LEVEL IV	50mm

93	LP HTR 3 LEVEL TX IV	50mm
94	LP HTR 3 LEVEL TX IV	50mm
95	LP HTR 3 CTRL ARGV DRN V	25mm
96	LP HTR 3 DRN P/P A SUCT IV	150mm
97	LP HTR 3 DRN P/P A DISCH NRV	100mm
98	LP HTR 3 DRN P/P A DISCH IV	80mm
99	LP HTR 3 DRN P/P A LEAK-OFF IV	25mm
100	LP HTR 3 DRN P/P A DISCH DRN V	25mm
101	LP HTR 3 DRN P/P B SUCT IV	150mm
102	LP HTR 3 DRN P/P B DISCH NRV	100mm
103	LP HTR 3 DRN P/P B DISCH IV	80mm
104	LP HTR 3 DRN P/P BLEAK-OFF IV	25mm
105	LP HTR 3 DRN P/P B DISCH DRN V	25mm
106	LP HTR 3 LEVEL CNTR V	100mm
107	LP HTR 3 LEVEL CNTR IV	100mm
108	LP HTR 3 INL FW IV	300mm
109	LP HTR 3 INL FW IV BYP IV	50mm
110	LP HTR 3 FW BYP IVDRN P/P A DISCH IV	250mm
111	LP HTR 3 FW BYP IV BYP IV	25mm
112	LP HTR 3 OUTL FW IV	300mm
113	LP HTR 3 OUTL FW IV BYP IV	50mm
114	LP HTR 3 OUTL FW NRV	400mm
115	LP HTR 3 OUTL CONDS DRN IV	25mm
116	LP HTR 3 OUTL VENT IV	25mm
117	DA FW INLET VENT V/V	25mm
118	LP HTR 3 OUTL FW IV	25mm
119	LP HTR 3 OUTL DRN V/V TO EXP VES	25mm
120	LP HTR 3 OUTL DRN V/V	25mm

121	LP HTR 3A BLED STM A PRESS TX IV	25mm
122	LP HTR 3A STM PRESS TP	15mm
123	LP HTR 3B STM PRESS TP	15mm
124	LP HTR 3B BLED STM A PRESS TX IV	15mm
125	LP HTR 3 PRESS TP	15mm
126	LP HTR 3 DRAIN PIPE DRAIN V/V	50mm
127	LP HTR 3 PRESS TP	15mm
128	DEAERATOR	300mm
129	DA CONTROL ARRANGEMENT	300mm
130	DLC	400mm
131	DLC INLET I/V	400mm
132	DLC OUTLET I/V	400mm
133	DLC BYPASS IV	400mm
134	DEAERATOR STORAGE TANK	300mm
135	B DA STM INLET V/V	400mm
136	B DA STM INLET MOT BYP V/V	50mm
137	B DA STM INLET HAND BYP V/V	50mm
138	A DA STM INLET V/V	400mm
139	A DA STM INLET MOT BYP V/V	50mm
140	A DA STM INLET HAND BYP V/V	50mm
141	B DA FEEDWATER INLET V/V	300mm
142	B DA FEEDWATER INLET BYP V/V	50mm
143	A DA FEEDWATER INLET V/V	300mm
144	A DA FEEDWATER INLET BYP V/V	50mm
145	DA VENT TO ATM V/V A	25mm
146	DA VENT TO ATM V/V B	25mm
147	DA VENT TO COND V/V	25mm

148	D/A LEVEL IND ISOL V/V	25mm
149	DA CTRL ARGV ISOL V/V	50mm
150	DA CTRL ARGV ISOL V/V	50mm
151	DLC INLET ISOL BYP V/V	50mm
152	DLC OUTLET ISOL BYP V/V	50mm
153	AUX STM TO DST ISOL V/V	250mm
154	AUX STM TO DST ISOL BYP V/V	25mm
154	DST WARM STM ISOL BYP HIV	25mm
155	AUX STM TO DST NRV	250mm
156	DST CTRL ARGV 1 BOTTOM IV	50mm
157	DST CTRL ARGV 1 DRN TO EV IV	50mm
158	DST CTRL ARGV 1 TOP IV	50mm
159	DST CTRL ARGV 1 VENT TO COND IV	25mm
160	DST CTRL ARGV 1 BOTTOM IV	50mm
161	DST CTRL ARGV 1 DRN TO EV IV	50mm
162	DST CTRL ARGV 1 TOP IV	25mm
163	DST CTRL ARGV 1 VENT TO COND IV	50mm
164	DST CTRL ARGV VENT V/V	25mm
165	DST CTRL ARGV 1 BOTTOM IV	50mm
166	DST CTRL ARGV 1 DRN TO EV IV	50mm
167	DST CTRL ARGV 1 TOP IV	50mm
168	DST CTRL ARGV 1 VENT TO COND IV	50mm
169	DST LTX IV	50mm
170	DST LTX IV	50mm
171	IP BLED STM PIPE DRN V TO COND	50mm
172	IP BLED STM IV	400mm
173	IP BLED STM IV MOT BYP V	50mm
174	IP BLED STM HAND BYP V	50mm

175	IP BLED STM DRAIN VESSEL DRN	25mm
176	IP BLED STM DRAIN VESSEL DRN TO COND	25mm
177	IP BLED STM DRAIN VESSEL DRN TO COND INL IV	25mm
178	DA LEVEL CTRL DRN V	25mm
179	IP BLED STM DRAIN VESSEL STM TRAP	50mm
180	IP BLED STM DRAIN VESSEL STM TRAP OUTL IV	50mm
181	IP BLED STM TO DA SUPPLY NRV	400mm
182	IP BLED STM PP ISOL V/V	15mm
183	IP BLED STM PP ISOL V/V	15mm
184	IP BLED STM PTX ISOL V/V	15mm
185	CRH STM TO DA IV	400mm
186	CRH STM TO DA IV MOT BYP V	50mm
187	CRH STM TO DA IV MOT BYP V	50mm
188	CRH STM TO DA IV HAND BYP V	50mm
189	CRH STM TO DA CNTR V	400mm
190	AUX STM TO DA CNTRL V/V	300mm
191	AUX STM TO DA CNTRL V/V	400mm
192	AUX STM TO DA IV MOT BYP V	50mm
193	AUX STM TO DA NRV	300mm
194	AUX STM TO DA IV HAND BYP V	50mm
195	AUX STM TO DA PS IV	25mm
196	DST PRESS IND IV	15mm
197	DST PRESS TX IV	50mm
198	DST PRESS TP	15mm
199	DST DOSING V/V	15mm
200	DST SAMPLING V/V	15mm
201	DST PRESS IND V/V	50mm
202	DST LEVEL IND TOP ISOL V/V	50mm

203	DST LEVEL CONTROL ARGT BOTM ISOL V/V	50mm
204	DST CONTROL ARGT	50mm
205	DST CONTROL ARRANGEMENT (9 OFF)	50mm
206	IP B/S DRAIN POCKET/VESSEL	800mm
207	IP B/S TO DA NRV	300mm
208	SAE B	200mm
209	SAE A	200mm
210	STM EJECT A AIR CNTR V/V	200mm
211	STM EJECT A AIR IV	200mm
212	STM EJECT A STM INL IV	200mm
213	STM EJECT B AIR CNTR V	200mm
214	STM EJECT A AIR IV	200mm
215	STM EJECT A STM INL IV	200mm
216	WAE A1	200mm
217	WAE A2	200mm
218	WAE B1	200mm
219	WAE B2	200mm
220	WAE A1 AIR CV	200mm
221	WAE A2 AIR CV	200mm
222	WAE B1 AIR CV	200mm
223	WAE B2 AIR CV	200mm
224	WAE A1 AIR IV	200mm
225	WAE A2 AIR IV	200mm
226	WAE B1 AIR IV	200mm
227	WAE B2 AIR IV	200mm
228	WAE A1 WTR INL V	200mm

229	WAE A2 WTR INL V	200mm
230	WAE B1 WTR INL V	200mm
231	WAE B2 WTR INL V	200mm
232	SEC CW (GEN) P/P A SUCTION V	300mm
233	SEC CW (GEN) P/P A DISCH NRV	300mm
234	SEC CW (GEN) P/P A DISCH IV	300mm
235	SEC CW (GEN) P/P B SUCTION V	300mm
236	SEC CW (GEN) P/P B DISCH NRV	300mm
237	SEC CW (GEN) P/P B DISCH IV	300mm
238	SEC CW (GEN) EXCESS RETURN V	300mm
239	SEC CW (GEN) EXCESS RETURN V IV	300mm
240	SEC CW (GEN) EXCESS RETURN V IV	300mm
241	SEC CW (GEN) SUMP TANK LOW LEVEL CNTR V/V	150mm
242	SEC CW (GEN) SUMP TANK HIGH LEVEL CNTR V/V	150mm
243	ATMOSPHERIC TANK	300mm
244	TAPROGGE SCREENS (LOWER & UPPER)	80mm
245	TAPROGGE SCREENS (LOWER & UPPER)	80mm
246	TAPROGGE A ACCUMULATOR INL ISOL V/V	80mm
247	TAPROGGE A ACCUMULATOR OUT ISOL V/V	80mm
248	TAPROGGE B ACCUMULATOR INL ISOL V/V	80mm
249	TAPROGGE B ACCUMULATOR OUT ISOL V/V	80mm
250	TAPROGGE P/P RECIRC ISOL V/V	80mm
251	TAPROGGE P/P RECIRC ISOL V/V	80mm
252	GLAND SEAL WATER PRESSURE REDUCING VALVE	80mm
253	GLAND SEAL WATER FILTER	80mm

254	HP HTR 5A (STEAM & FEEDWATER SIDE)	300mm
255	HP HTR 6A (STEAM & FEEDWATER SIDE)	300mm
256	HP HTR 6B (STEAM & FEEDWATER SIDE)	300mm
257	HP HTR 5B (STEAM & FEEDWATER SIDE)	300mm
257	HP HTR 5A BS I/V	400mm
258	HP HTR 5A BS I/V BYP	50mm
259	HP HTR 5A BS I/V BYP	50mm
260	HP HTR 5B BS I/V	400mm
261	HP HTR 5B BS I/V BYP	50mm
262	HP HTR 5B BS I/V BYP	50mm
263	HP HTR 6A C R/H STM INL I/V	300mm
264	HP HTR 6A C R/H STM INL IV BP	25mm
265	HP HTR 6A C R/H STM INL IV BP	25mm
266	HP HTR 6B C R/H INL I/V	300mm
267	HP HTR 6B C R/H INL IV BP	25mm
268	HP HTR 6B C R/H INL IV BP	25mm
269	HP HTR 6A DRN/HP 5A CNTRL V/V	100mm
270	HP HTR 5A DRN TO DST CTRL V/V	100mm
271	HP HTR 6B DRN/HPH 5B CTRL V/V	100mm
272	HP HTR 5B DRN TO DST CTRL V/V	100mm
273	HP HTR 5A VENT TO COLD CON CTRL AIR IV	25mm
274	HP HTR 6A VENT TO COLD COND CTRL AIR IV	25mm
275	HP HTR 5B VENT TO COLD COND CTRL AIR IV	25mm
276	HP HTR 6B VENT TO COLD COND CTRL AIR IV	25mm
277	HP HTR 5A EMERG DRN/HOT COND IV	150mm
278	HP HTR 5A EMERG DRN / HOT COND CTRL	150mm
279	HP HTR 6A EMERG DRN/HOT COND IV	350mm

280	HP HTR 6A EMERG DRN/HOT COND CTRL V/V	80mm
281	HP HTR 5B EMERG DRN/HOT COND IV	350mm
282	HP HTR 5B EMERG DRN/HOT COND CTRL V/V	350mm
283	HP HTR 6B EMERG DRN/HOT COND IV	350mm
284	HP HTR 6B EMERG DRN/HOT COND CTRL V/V	350mm
285	HP HEATER 5A DRN IV	200mm
286	HP HEATER 5A DRN/DTR IV	50mm
287	HP HEATER 6A DRN/HTR 5A DRN IV	250mm
288	HP HTR 5A FEEDWATER INL DRN/DTR IV	50mm
289	HP HTR 5A FW INL DRN IV	150mm
290	HP HTR 6A FW OUTL DRN IV	50mm
291	HP HTR 6A FW OUTL DRN/DTR IV	25mm
292	HP HTR 5A FW OUTL PP IV	25mm
293	HP HTR 5A DRN/EV IV	50mm
294	HP HTR 5A FW INL DRN/EV IV	25mm
295	HP HTR 6A DRN/HTR 5A IV	250mm
296	HP HTR 6A DRN/HTR 5A IV	250mm
297	HP HTR 6A CTRL ARG 1 IV	50mm
298	HP HTR 6A CTRL ARG 2 IV	50mm
299	HP HTR 6A CTRL ARG 3 IV	50mm
300	HP HTR 6A CTRL ARG 1 IV	25mm
301	HP HTR 6A CTRL ARG 2 IV	25mm
302	HP HTR 6A CTRL ARG 3 IV	25mm
303	HP HTR 5A CTRL ARG 1 IV	50mm
304	HP HTR 5A CTRL ARG 2 IV	50mm
305	HP HTR 5A CTRL ARG 3 IV	50mm
306	HP HTR 5A CTRL ARG 1 IV	50mm
307	HP HTR 5A CTRL ARG 2 IV	50mm

308	HP HTR 5A CTRL ARGV 3 IV	50mm
309	HP HTR 5A EMERGENCY DRN LINE DRN IV	200mm
310	HP HTR 5A EMERGENCY DRN LINE DRN/DTR IV	50mm
311	HP HTR 5A DRN/DST IV	50mm
312	HP HTR 5A CTRL ARGV VENT/DTR IV	25mm
313	HP HTR 6A CTRL ARGV VENT/DTR IV	25mm
314	HP HTR 6A C R/H STM INL NRV TOP COVER PLUG REMOVED	250mm
315	HP HTR 6A DRN/HP 5A DRN IV	25mm
316	HP HTR 5A VENT/EV IV	25mm
317	HP HTR 5A VENT/DTR IV	25mm
318	HP HTR 6A VENT/EV IV	25mm
319	HP HTR 6A VENT/DTR IV	25mm
320	HP HTR 6A LEVEL TX IV	25mm
321	HP HTR 6A LEVEL TX IV	50mm
322	HP HTR 6A LEVEL CTRL IV	50mm
323	HP HTR 6A LEVEL CTRL IV	50mm
324	HP HTR 5A LEVEL TX IV	50mm
325	HP HTR 5A LEVEL TX IV	50mm
326	HP HTR 5A LEVEL CTRL IV	50mm
327	HP HTR 5A LEVEL CTRL IV	50mm
328	HP HTR 6A CTRL ARGV DRN IV	50mm
329	HP HTR 6A CTRL ARGV DRN IV	50mm
330	HP HTR 5A CTRL ARGV DRN IV	50mm
331	HP HTR 6A CTRL ARGV 1/CONT IV	25mm
332	HP HTR 6A CTRL ARGV 2/COND IV	25mm
333	HP HTR 6A CTRL ARGV 3/COND IV	25mm
334	HP HTR 5A CTRL ARGV 1/COND IV	25mm
335	HP HTR 5A CTRL ARGV 2/COND IV	25mm

336	HP HTR 5A CTRL ARGT 3/COND IV	25mm
337	HP HTR 5A CTRL ARGT "1" LVL SW/IND DRN IV	15mm
338	HP HTR 5A CTRL ARGT "2" LVL SW/IND DRN IV	15mm
339	HP HTR 5A CTRL ARGT "3" LVL SW/IND DRN IV	15mm
340	HP HTR 6A CTRL ARGT "1" LVL SW/IND DRN IV	15mm
341	HP HTR 6A CTRL ARGT "2" LVL SW/IND DRN IV	15mm
342	HP HTR 6A CTRL ARGT "3" LVL SW/IND DRN IV	15mm
343	HP HTR 5A EMERGENCY DRN LINE DRN/DTR IV	25mm
344	HP HTR 5A EMERGENCY DRN LINE DRN/EV IV	25mm
345	HP HTR 5A EMERGENCY DRN LINE DRN/DTR IV	25mm
346	HP HTR 5A DRN/DST IV	25mm
347	HP HTR 5A VENT/COND IV	25mm
348	HP HTR 6A DRN/HTR 5A IV	25mm
349	HP HTR 6A DRN/HTR 5A IV BP	25mm
350	HP HTR 6A DRN/HTR 5A DRN/EV IV	25mm
351	HP HTR 6A DRN/HTR 5A DRN/DTR IV	25mm
352	HP HTR 6A EM DRN/HOT COND IV BP	25mm
353	HP HTR 6A VENT / COND IV	25mm
354	HP HTR 6A EMERGENCY DRN LINE DRN/EV IV	25mm
355	HP HTR 6A EMERGENCY DRN LINE DRN/DTR IV	25mm
356	HP HTR 6A PRESS DROP SUB COOLING ZONE DIFF IND IV	15mm
357	HP HTR PRESS DROP SUB-COOLING ZONE DIFF PRESS SW/IND IV	15mm
358	HP HTR 6A HTR 5A PP IV	15mm
359	HP HTR 5A FWT PP IV	15mm
360	HP HTR 6A BS PTX IV	15mm
361	HP HTR 6A BS PP IV	15mm
362	HP HTR 6A C R/H STM INL DIFF PRESS IND/SW IV	15mm
363	HP HTR 6A C R/H STM INL DIFF PRESS IND/SW IV	15mm

364	HP HTR 6A PI IV	15mm
365	HP HTR 6A PP IV	15mm
366	HP HTR 5A BS PTX IV	15mm
367	HP HTR 5A PP IV	15mm
368	HP HTR 5A PI IV	15mm
369	HP HTR 5A PP IV	15mm
370	HP HTR 6A DRN/DTR IV	25mm
371	HP HTR 6A C R/H STM INL NRV TOP COVER PLUG VENT/DTR IV	250mm
372	HP HTR 6A PI IV	15mm
373	HP HTR 6B EMERGENCY DRN LINE DRN IV	25mm
374	HP HTR 6B EMERGENCY DRN LINE DRN/DTR IV	25mm
375	HP HTR 6B DRN/HTR 5B IV	25mm
376	HP HTR 6B DRN/HTR 5B IV	25mm
377	HP HTR 5B EMERGENCY DRN LINE DRN IV	25mm
378	HP HTR 5B DRN IV	25mm
379	HP HTR 5B CTRL ARGV 1 IV	50mm
380	HP HTR 5B CTRL ARGV 2 IV	50mm
381	HP HTR 5B CTRL ARGV 3 IV	50mm
382	HP HTR 5B CTRL ARGV 1 IV	50mm
383	HP HTR 5B CTRL ARGV 2 IV	50mm
384	HP HTR 5B CTRL ARGV 3 IV	50mm
385	HP HTR 6B CTRL ARGV 1 IV	50mm
386	HP HTR 6B CTRL ARGV 2 IV	50mm
387	HP HTR 6B CTRL ARGV 3 IV	50mm
388	HP HTR 6B CTRL ARGV 1 IV	50mm
389	HP HTR 6B CTRL ARGV 2 IV	50mm
390	HP HTR 6B CTRL ARGV 3 IV	50mm
391	HP HTR 6B DRN/HTR 5B DRN IV	50mm

392	HP HTR 5B DRN/FWT IV	50mm
393	HP HTR 6B C R/H STM INL NRV TOP COVER PLUG REMOVED	250mm
394	HP HTR 5B EMERGENCY DRN LINE DRN/DTR IV	25mm
395	HP HTR 5B EMERGENCY DRN LINE DRN/DTR IV	25mm
396	HP HTR 5B DR/EV IV	25mm
397	HP HTR 5B DRN/DTR IV	25mm
398	HP HTR 5B DRN TO DST DRN IV	25mm
399	HP HTR 6B EMERGENCY DRN/HOT COND IV BP	25mm
400	HP HTR 6B DRN/HTR 5B DRN/DTR IV	25mm
401	HP HTR 6B DRN/HTR 5B DRN/EV IV	25mm
402	HP HTR 6B DRN/HTR 5B DRN/DTR IV	25mm
403	HP HTR 6B DRN/HTR 5B IV BP	25mm
404	HP HTR 6B DRN/HTR 5B IV BP	25mm
405	HP HTR 6B EMERGENCY DRN LINE DRN/EV IV	25mm
406	HP HTR 6B EMERGENCY DRN LINE DRN/DTR IV	25mm
407	HP HTR 5B VENT/COND IV	25mm
408	HP HTR 6B VENT/COND IV	25mm
409	HP HTR 6B LEVEL CTRL IV	25mm
410	HP HTR 6B LEVEL CTRL IV	25mm
411	HP HTR 6B LEVEL CTRL TX IV	25mm
412	HP HTR 6B LEVEL TX IV	25mm
413	HP HTR 6B CTRL ARG1/COND IV	25mm
414	HP HTR 6B CTRL ARG2/COND IV	25mm
415	HP HTR 6B CTRL ARG3 DRN/DTR IV	25mm
416	HP HTR 6B CTRL ARG3/COND IV	25mm
417	HP HTR 5B LEVEL TX IV	15mm
418	HP HTR 5B LEVEL TX IV	15mm
419	HP HTR 5B LEVEL CTRL IV	15mm

420	HP HTR 5B LEVEL CTRL IV	15mm
421	HP HTR 5B CTRL ARG1 1 LVL SW/IND DRN IV	15mm
422	HP HTR 5B CTRL ARG1 2 LVL SW/IND DRN IV	15mm
423	HP HTR 5B CTRL ARG1 3 LVL SW/IND DRN IV	15mm
424	HP HTR 6B CTRL ARG1 1 LVL SW/IND DRN IV	15mm
425	HP HTR 6B CTRL ARG1 2 LVL SW/IND DRN IV	15mm
426	HP HTR 6B CTRL ARG1 3 LVL SW/IND DRN IV	15mm
427	HP HTR 5B CTRL ARG1 DRN/DTR IV	15mm
428	HP HTR 5B CTRL ARG1 1/COND IV	15mm
429	HP HTR 5B CTRL ARG1 2/COND IV	15mm
430	HP HTR 5B CTRL ARG1 2/COND IV	15mm
431	HP HTR 6B/HP HTR PP IV	15mm
432	HP HTR 6B PRESS DROP SUB-COOLING ZONE DIFF	15mm
433	HP HTR 6B PRESS DROP SUB-COOLING ZONE DIFF	15mm
434	HP HTR 5B DRN TO DST PP IV	15mm
435	HP HTR 6B C R/H STM INL DIFF PRESS IND/SW IV	15mm
436	HP HTR 6B C R/H STM INL DIFF PRESS IND/SW IV	15mm
437	HP HTR 6B PI IV	15mm
438	HP HTR 6B C R/H STM INL PP IV	15mm
439	HP HTR 6B PP IV	15mm
440	HP HTR 6B C R/H STM INL PRESS TX IV	15mm
441	HP HTR 5B PP IV	15mm
442	HP HTR 5B PI IV	15mm
443	HP HTR 5B BS PP IV	15mm
444	HP HTR 5B BS PTX IV	15mm
445	HP HTR 5B VENT IEV IV	25mm
446	HP HTR 6B VENT IEV IV	25mm
447	HP HTR 6B VENT DTR IV	25mm

448	HP HTR 5B VENT DTR IV	25mm
449	HP HTR 5B CTR ARGT VENT/DTR IV	25mm
450	HP HTR 6B EMERGENCY DRN LINE DRN/DTR IV	25mm
451	HP HTR 6B FW OUTL P/P IV	15mm
452	HP HTR 5B FW	25mm
453	HP HTR 5B EMERGENCY DRN LINE DRN/EV IV	25mm
454	CONDENSATE POLISHER A	300mm
455	CONDENSATE POLISHER B	300mm
456	CONDENSATE POLISHER C	300mm
457	POLISHER A VENT BIN CNTRL V/V	50mm
458	CONDS POLISHER 1 A DRN WTR CTRL V/V	50mm
459	CONDS POLISHER 1A AIR & TRF WTR CTRLV/V	50mm
460	CONDS POLISHER 1 A FIL WTR INL CTRL V/V	300mm
461	Conds polisher 1A Inl isol bin ctrl v/v	300mm
462	POLISHER 1A OUTL ISOL BIN CTRL V/V	300mm
463	CONDS POLISHER 1 B VENT BIN CTRL V/V	50mm
464	CONDS POLISHER 1B RINSE WTR OUT LCTRL V/V	100mm
465	CONDS POLISHER 1B AIR & TRF WTR CTRL V/V	100mm
466	CONDS POLISHER 1B FIL WTR INLET CTRLV/V	300mm
467	Conds polisher 1B Inl isol bin ctrl v/v	300mm
468	CPP 1B OUTL ISOL BIN CTRL V/V	300mm
469	CONDS POLISHER 1 C VENT BIN CTRL V/V	50mm
470	CONDS POLISHER 1 C DRN WTR OUTL CTRL V/V	100mm
471	CONDS POLISHER 1C AIR & TRF WTR CTRL V/V	100mm
472	CONDS POLISHER 1 C FIL WTR INL CTRL V/V	300mm
473	Conds polisher 1C Inl isol bin ctrl v/v	300mm
474	CPP 1C OUTL BIN CTRL V/V (MOVB)	300mm

475	CPP EMERGENCY BYP BIN CNTRL VV	50mm
476	CPP BYPASS MOD CNTRL V/V	300mm
477	CPP RESIN MIXING AIR PRESS REG V/V	50mm
478	CPP DIRTY RESIN TRN FIL LINE VENT VLV	50mm
479	CPP DIRTY RESIN TRN WTR SEC LINE VENT VLV	50mm
480	CPP REFILL LINE VENT VLV	50mm
481	CPP DIRTY RESIN TRNS WTR SEC LINE VENT VLV	50mm
482	CONDENSATE POLISHER A OUTLET RESIN TRAP	300mm
483	CONDENSATE POLISHER B OUTLET RESIN TRAP	300mm
484	CONDENSATE POLISHER C OUTLET RESIN TRAP	300mm
485	BFPT EXTRACTION PUMP SUC STRAINER A	300mm
486	BFPT EXTRACTION PUMPS SUC STRAINER B	300mm
487	BFPT SAE AIR VALVES	200mm
488	BFPT SAE AIR VALVES	200mm
489	BFPT SAE AIR VALVES	200mm
490	BFPT SAE AIR VALVES	200mm
491	BFPT CONDENSER LEVEL CONTROL VALVE	250mm
492	BFPT VACUUM BREAKER I/V	80mm
493	BFPT CDV SPRAY VALVE	50mm
494	BFPT CONDENSER LEVEL CONTROL VALVE	250mm
495	BFPT EP A DISCH NRV	100mm
496	BFPT EP B DISCH NRV	100mm
497	BFPT EP A SUC IV	200mm
498	BFPT EP B SUC IV	200mm
499	BFPT EP A DISCH IV	150mm
500	BFPT EP B DISCH IV	150mm
501	BFPT EP A RECIRC IV	50mm

502	BFPT EP B RECIRC IV	50mm
503	BFPT COND CTRL ARGV IV	25mm
504	BFPT COND DRN/DTR IV	25mm
505	BFPT COND CTRL ARGV FLG IV	25mm
506	MC/BFPT INTERCONNECTOR	300mm
507	BFPT CONDENSER	300mm
508	BURSTING DISCS	100mm
509	BFPT PIPE DRN STM TRAP	100mm
510	BFPT PIPE DRN STM TRAP	100mm
511	OIL COOLERS CW INLET AND OUTLET ISOLATING VALVES	150mm
512	OIL COOLERS CW INLET AND OUTLET ISOLATING VALVES	150mm
513	OIL COOLERS CW INLET AND OUTLET ISOLATING VALVES	150mm
514	OIL COOLERS CW INLET AND OUTLET ISOLATING VALVES	150mm
515	EFP A LEAK OFF NRV	80mm
516	EFP B LEAK OFF NRV	80mm
517	SFP LEAK OFF NRV	80mm
518	BFPT BOOSTER P/P COOLING INLET I/V (25 mm)	25mm
519	BFPT BOOSTER P/P COOLING OUTLET I/V (25 mm)	25mm
520	BFPT A BOOSTER P/P COOLING INLET I/V (25 mm)	25mm
521	BFPT BOOSTER P/P COOLING OUTLET I/V (25 mm)	25mm
522	EFP B BOOSTER P/P COOLING INLET I/V (25 mm)	25mm
523	EFP B BOOSTER P/P COOLING OUTLET I/V (25 mm)	25mm
524	EFP A LEAK OFF CONTROL VALVE (100 mm)	100mm

525	EFP B LEAK OFF CONTROL VALVE (100 mm)	100mm
526	EFP A BALANCE LINE IV (100 mm)	100mm
527	EFP B BALANCE LINE IV (100 mm)	100mm
528	SFP BALANCE LINE IV (100 mm)	100mm
529	EFP A ATT. SPRAYWATER HIV (65 mm)	65mm
530	EFP B ATT. SPRAYWATER HIV (65 mm)	65mm
531	SFP ATT. SPRAYWATER HIV (80 mm)	80mm
532	SFP LEAK OFF VALVE (130 mm)	130mm
533	EFP A SUC DRN / EV V (100 mm)	100mm
534	EFP A SUC DRN / DTR V	25mm
535	EFP A SUC DRN IV (100 mm)	100mm
536	EFP A SUC DRN / DTR IV (25 mm)	25mm
537	EFP B SUC DRN / EV V (100 mm)	100mm
538	EFP B SUC DRN / DTR V (100 mm)	100mm
539	EFP B SUC DRN IV (100 mm)	100mm
540	EFP B SUC DRN / DTR IV (25 mm)	25mm
541	SFP SUC DRN / EV V (100 mm)	100mm
542	SFP SUC DRN / DTR V (100 mm)	100mm
543	SFP SUC DRN IV (100 mm)	100mm
544	SFP SUC DRN / DTR IV (25 mm)	25mm
545	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
546	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
547	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
548	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
549	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
550	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm

551	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
552	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
553	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
554	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
555	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
556	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
557	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
558	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
559	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
560	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
561	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
562	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
563	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
564	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
565	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
566	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
567	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
568	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
569	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
570	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
571	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
572	EFP A SUCTION VALVE (400 mm)	400mm

573	EFP B SUCTION VALVE (400 mm)	400mm
574	SFP SUCTION VALVE (500 mm)	500mm
575	MAIN FEED REG VALVE (400 mm)	400mm
576	MAIN FEED REG VALVE BYPASS (40 mm)	50mm
577	FEED REG CONTROL VALVE A (250 mm)	250mm
578	FEED REG CONTROL VALVE B (250 mm)	250mm
579	FEED REG MOTOR ISOLATING V/V A (250 mm)	250mm
580	FEED REG MOTOR ISOLATING V/V B (250 mm)	250mm
581	FEED REG MOTOR ISOLATING V/V A BYPASS (25mm)	25mm
582	FEED REG MOTOR ISOLATING V/V B BYPASS (25mm)	25mm
583	FEED REG HAND ISOLATING V/V A (250 mm)	250 mm
584	FEED REG HAND ISOLATING V/V B (250 mm)	250 mm
585	FEED REG HAND ISOLATING V/V A BYPASS (25mm)	25mm
586	FEED REG HAND ISOLATING V/V B BYPASS (25 mm)	25 mm
587	SEAL WATER ISO V/V 'A' (SUCTION) (125mm)	125mm
588	SEAL WATER ISO V/V 'B' (SUCTION) (125mm)	125mm
589	SEAL WATER ISO V/V 'A' (DISCH) (80mm)	80mm
590	SEAL WATER ISO V/V 'B' (DISCH) - (80mm)	80mm
591	SEAL WATER ISO V/V 100% BFP (50mm)	50mm
592	SEAL WATER ISO V/V 100% BFP (50mm)	50mm
593	SEAL WATER BYP ISO V/V 100% BFP (50mm)	50mm
594	SEAL WATER ISO V/V 100% EFP A (40 mm)	40mm
595	SEAL WATER ISO V/V 100% EFP A (40 mm)	40mm
596	SEAL WATER BYP ISO V/V 100% EFP (40 mm)	40mm
597	SEAL WATER ISO V/V 100% EFP B (40 mm)	40mm
598	SEAL WATER ISO V/V 100% EFP B (40 mm)	40mm
599	SEAL WATER BYP ISO V/V 100% EFP (40 mm)	40mm
600	GLAND DRAIN ISO V/V 'A' (SUCTION) - (80mm)	80mm

601	GLAND DRAIN ISO V/V 'B' (SUCTION) - (80mm)	80mm
602	GLAND DRAIN ISO V/V 'A' (DISCH) - (80mm)	80mm
603	GLAND DRAIN ISO V/V 'B' (DISCH) - (80mm)	80mm
605	SEAL WATER NON RETURN 'A' - (80mm)	80mm
606	SEAL WATER NON RETURN 'B' - (80mm)	80mm
607	GLAND DRAIN NON RETURN V/V 'A' - (80mm)	80mm
608	GLAND DRAIN NON RETURN V/V 'B' - (80mm)	80mm
609	SEAL WATER CNTRL V/V ON EFP A	80mm
610	SEAL WATER CNTRL V/V ON EFP B	80mm
611	SEAL WATER CNTRL V/V ON SFP	80mm
612	BLR AUX COOLING RETURN STRAINER MAIN	300mm
613	BLR AUX COOLING RETURN STRAINER STANDBY	250mm
614	BLR AUX COOLING TANK SUPPLY STRAINER	250mm
615	BLR AUX COOLING RETURN CONTROL V/V (150MM)	150mm
616	BLR AUX COOLING RETURN IV 1 (150MM)	150mm
617	BLR AUX COOLING RETURN IV 2 (150MM)	150mm
618	BLR AUX COOLING SUP IV 1	150mm
619	BLR AUX COOLING SUP IV 2 (150MM)	150mm
620	BLR AUX COOLING RETURN BYPASS V/V (150MM)	150mm
621	BLR AUX COOLING SUP BYPASS V/V (150NB)	150mm
622	BLR AUX COOLING RETURN BYPASS V/V (50MM)	50mm
623	BLR AUX CLG H/EXCH MAIN CW SUP IV (300MM)	300mm
624	BLR AUX CLG H/EXCH CW IV (300MM)	300mm
625	Blr Aux Clg H/EXCH A CW Supply IV (8")	200mm
626	Blr Aux Clg H/EXCH Supply IV (8")	200mm
627	BLR AUX CLG H/EXCH A CW RTN IV (250MM)	250mm
628	BLR AUX CLG H/EXCH B CW RTN IV (250MM)	250mm

629	Blr Aux Clg Wtr Heat A Outlet IV (8")	200mm
630	Blr Aux Clg Wtr Heat Exchanger A INL IV (8")	200mm
631	Blr Aux Clg Wtr Heat Exchanger B INL IV (8")	200mm
632	Blr Aux Clg Wtr Heat Exchanger B OUTL IV (8")	200mm
633	Blr Aux Clg Clg Rtn IV (10")	250mm
634	Blr Aux Clg Clg Rtn IV (10")	250mm
635	Blr Aux Clg Clg Rtn Byp IV (10")	250mm
636	Blr Aux Clg Clg Rtn Byp IV (10")	250mm
637	DEMIN WATER MAKE-UP TANK	400mm
638	COLD REHEAT SUPPLY IV	200mm
639	AUX STEAM SUPPLY NRV	200mm
640	AUX STEAM SUPPLY IV	200mm
641	AUX STEAM MANIFOLD DRN TRAP BYPASS V/V	25mm
642	AUX STEAM MANIFOLD DRN STEAM	50mm
643	AUX STEAM MANIFOLD DRAIN TRAP INLET IV	50mm
644	AUX STEAM MANIFOLD DRN TRAP OUTLET IV	50mm
645	HP/IP SUPPLY VLV	50mm
646	HP/IP DUMP VLV	300mm
647	HP/IP DUMP DESUPERHEATER SPRY WATER VLV	50mm
648	LP SUPPLY VALVE	50mm
649	LP DESUPERHEATER SPRAY WATER VLV	50mm
650	HP STEAM CHEST LH UPR DRN MARTYR IV	50mm
651	HP LWR LOOP PIPE DRAIN MARTYR ISOL V/V	50mm
652	HP CYL LH COLD REHEAT DRAIN MARTYR ISOL V/V	50mm
653	HP CYL RH COLD REHEAT DRAIN MARTYR ISOL V/V	50mm
654	IP STEAM CHEST LH UPR DRAIN MASTER ISOL V/V	50mm

655	IP STEAM CHEST RH UPR DRAIN MASTER ISOL V/V	50mm
656	IP LOWER LOOP PIPE DRAIN MARTYR ISOL V/V	50mm
657	LH COLD REHEAT EMERGENCY DRAIN NOZZLE TRAP ISOL V/V	50mm
658	GESTRA DRAIN FROM LH COLD REHEAT ISOL V/V	50mm
659	LH COLD REHEAT EMERGENCY DRAIN NOZZLE TRAP ISOL V/V	50mm
660	GESTRA DRAIN FROM RH COLD REHEAT ISOL V/V	50mm
661	GESTRA DRAIN FROM RH COLD REHEAT ISOL V/V	50mm
662	GESTRA DRAIN FROM LH COLD REHEAT ISOL V/V	50mm
663	LP HOOD SPRAY DUPLEX STRAINER	100mm
664	OVERHAUL LP TURBINE SPRAY SUPPLY ISOL V/V	100mm
665	OVERHAUL LP TURBINE EXHAUSTER SPRAY COOLING NOZZLE	25mm
666	OVERHAUL LP TURBINE SPRAY SUPPLY NON RETURN V/V	100mm
667	OVERHAUL LP TURBINE SPRAY PRESS SUSTAINING V/V	25mm
668	OVERHAUL LP TURBINE SPRAY CONTROL V/V	100mm
669	OVERHAUL LP TURBINE SPRAY CONTROL OUTLET ISOL V/V	100mm
670	OVERHAUL LP TURBINE SPRAY CONTROL BYPASS V/V	100mm
671	OVERHAUL DC EMERG SPRW P/P SUCT ISOL V/V	100mm
672	OVERHAUL DC EMERG SPRW P/P DISCHARGE ISOL V/V	100mm
673	OVERHAUL DC EMERGENCY SPRAY WATER PUMP DISCHARGE NON RETURN V/V	100mm
674	OVERHAUL LP EXHAUST SPRW FILTER DIFF PRESS IND ISOL V/V	25mm
675	OVERHAUL DC EMERG SWTR P/P DRAIN ISOL V/V	25mm
676	OVERHAUL CONDENSATE EXTRACTION P/P PRESS SW ISOL V/V	25mm
677	OVERHAUL CONDENSATE EXTRACTION P/P PRESS SW ISOL V/V	25mm
678	OVERHAUL LP EXHAUST SPRAY WTR SUPPLY STRAINER DIFF PRESS IND	100mm
679	OVERHAUL DUPLEX STRAINER VENT ISOL V/V	25mm

680	OVERHAUL LP SPRAY COOLING WTR FLOW IND	25mm
681	OVERHAUL DUPLEX STRAINER DRAIN ISOL V/V	25mm
682	OVERHAUL DUPLEX STRAINER VENT ISOL V/V	25mm
683	OVERHAUL LP TURB SPRAY INLET ISOL V/V	25mm
684	OVERHAUL DUPLEX STRAINER DRAIN ISOL V/V	25mm
685	OVERHAUL EMRG SWTR SUPPLY P/P DISCHARGE PRESS SW ISOL V/V	25mm
686	OVERHAUL LP EXHAUST SPRW FILTER DIFF PRESS IND ISOL V/V	25mm
687	OVERHAUL LP TURBINE SPRAY SUPPLY DRAIN ISOL V/V	25mm
688	OVERHAUL LP TURBINE SPRAY SUPPLY DRAIN ISOL V/V	25mm
689	OVERHAUL DC EMRG SPRW SUPPLY P/P DISCHARGE PRESS SW ISOL V/V	25mm
690	OVERHAUL CONDENSATE EXTRACTION P/P OUTLET PRESS SWITCH ISOL V/V	25mm
691	OVERHAUL DC EMRG SPRW SUPPLY P/P DISCHARGE PRESS SW ISOL V/V	25mm
692	LP DEMIN RANGE TO RFWT INLET V/V	300mm
693	LP HTR 3 CTRL ARGV VENT V/V	25mm
694	EFP A ATT SPRAYWATER NRV	80mm
695	EFP B ATT SPRAYWATER NRV	80mm
696	SFP REHEAT SPRAYWATER NRV	80mm
697	BLR AUX COOLING SUP CONTROL V/V (150MM)	150mm
698	BLR AUX COOLING SUP DRAIN CONTROL V/V (50MM)	50mm
699	BLR AUX COOLING SUP DRAIN V/V (50MM)	50mm
700	CPP RINSE WTR DRAIN BIN CTRL V/V	100mm
701	U4 CPP CLN RES TRF INLET BIN CTRL V/V	100mm
702	CLEAN RES TRF TO U5 TO 6 BIN CTRL V/V	100mm
703	DIRTY RES TRF FROM U5 TO 6 BIN CTRL V/V	100mm
704	U4 CPP DTY RES TRF OUTL BIN CTRL V/V	100mm

705	U4 CPP DTY RES TRF LINES FLUSH WTR CTRLV/V	100mm
706	U4 CPP CLN RESTRF LINES FLUSH WTR CTRLV/V	100mm
707	CPP MIXING AIR & DTY RESTRF CTRL V/V	100mm
708	CPP DTY RES TRF WTR SUPL BIN CTRL V/V	100mm
709	CPP MIXING & DTY RESTRF AIR SUPL CTRLV/V	100mm
710	CPP CLN RESTRF WTR TO RECOV WTR CTRLV/V	100mm
711	CPP DIRTY RES TRF LINE FIL BIN CTRL V/V	100mm
712	CLN RES TRF WTR TO WASTE BIN CTRL V/V	100mm
713	CPP REFILL BIN CONTROL V/V	100mm
714	CONDS POLISHER 4 A INL MOD CTRL V/V (replace)	50mm
715	CONDS POLISHER 4 A CLN RESIN CTRL V/V	50mm
716	CONDS POLISHER 4 A DTY RES OUTL CTRL V/V	50mm
717	CONDS POLISHER 4 A SEC RES TRF CTRL V/V	50mm
718	CONDS POLISHER 4 A OUTL MOD CONTROL V/V (replace	50mm
719	CONDS POLISHER 4 B INL MOD CTRL V/V (replace)	50mm
720	CONDS POLISHER 4 B CLN RESIN CTRL V/V	50mm
721	CONDS POLISHER 4 B DTY RES OUTL CTRL V/V	50mm
722	CONDS POLISHER 4 B SEC RES TRF CTRL V/V	50mm
723	CONDS POLISHER 4 B OUTL MOD CONTROL V/V (replace	50mm
724	CONDS POLISHER 4 C INL MOD CTRL V/V (replace)	50mm
725	CONDS POLISHER 4 C CLN RESIN CTRL V/V	50mm
726	CONDS POLISHER 4 C DTY RES OUTL CTRL V/V	50mm
727	CONDS POLISHER 4 C SEC RES TRF CTRL V/V	50mm
728	CONDS POLISHER 4 C OUTL MOD CONTROL V/V (replac	50mm
729	CLEAN RES TRF WTR OUTL LINE VENT V/V	50mm

730	CPP DIRTY RES TRF WTR SUPPLY LINE VNT V/V	50mm
731	CPP MIXNG AIR RES TRF SUPL LINE DRN V/V	50mm
732	CPP INLET SAMPLING LINE SECONDARY COOLER	50mm
733	CPP INL SMPLN LINE LP CAPLRY SMPLR CLR	50mm
734	CPP A SAMPLING LINE SECONDARY COOLER	50mm
735	CPP A SMPLN LINE LP CAPILLARY SMPLR CLR	50mm
736	CPP B SAMPLING LINE SECONDARY COOLER	50mm
737	CPP B SMPLN LINE LP CAPILLARY SMPLR CLR	50mm
738	CPP C SAMPLING LINE SECONDARY COOLER	50mm
739	CPP C SMPLN LINE LP CAPILLARY SMPLR CLR	50mm
740	CPP OUTL SAMPLING LINE SECONDARY COOLER	50mm
741	CPP OUTL SMPLN LINE LP CAPLRY SMPLR CLR	50mm
742	HOT COND SAMPLING LINE SECONDARY COOLER	50mm
743	CIRC WTR SMPLN LINE DISTRIBUTION MFLD	50mm
744	CIRC WTR SMPLN LINE DISTRIBUTION MFLD	50mm
745	CPP INL SMPLN LINE DISTRIBUTION MFLD	50mm
746	CPP OUTL SMPLN LINE DISTRIBUTION MFLD	50mm
747	HOT COND SMPLN LINE DISTRIBUTION MFLD	50mm
748	HP HTR 5B FW OUTL PP IV	25mm
749	HP HTR 5B FW INL DRN IV	25mm
750	HP HTR 5B FW INL DRN/DTR IV	25mm
751	HP HTR 6B FW OUTL DRN/DTR IV	25mm
752	HP HTR 6B FW OUTL DRN/DTR IV	25mm
753	HP HTR 5B FW INL DRN/EV IV	25mm
754	HP HTR 6B FW OUTL P/P IV	25mm
755	HP HTR 5B EMERGENCY DRN LINE DRN/EV IV	25mm
756	BLR AUX CLG P/P A NRV	25mm

757	BLR AUX CLG P/P B NRV	25mm
758	BLR AUX CLG P/P C NRV	25mm

LETHABO U1 IN TURBINE VALVES (72)		
QIP	TASK NAME	SIZE
MAIN CONDENSER		
1	CW DOORS (3 Off)	500mm
2	CW DOORS (3 Off)	500mm
3	MAIN CONDENSER	500mm
4	ATMOSPHERIC TANK	300mm
TAPROGGE SYSTEM		
5	TAPROGGE SCREEN _ LOWER	80mm
6	TAPROGGE SCREEN _ UPPER	80mm
7	T2 SUCTION VALVES	80mm
8	T2 SUCTION VALVES	80mm
9	T2 SUCTION VALVES	80mm
10	T2 SUCTION VALVES	80mm
11	T2 SUCTION VALVES	80mm
12	T2 SUCTION VALVES	80mm
13	T2 SUCTION VALVES	80mm
14	T2 SUCTION VALVES	80mm
15	TAPROGGE ACCUMULATOR INL IV	100mm
16	TAPROGGE ACCUMULATOR OUTL IV	100mm
LP HEATER 3		
17	LPH 3 DRN PMP SUC STRAINER	300mm
18	LPH 3 DRN PMP SUC STRAINER	300mm
CONDENSATE EXTRACTION PUMP (CEP)&DA		
19	CLC(STROKE CHECK AND LEAK TEST TO BE WITNESS BY ENGINEER)	300mm

20	DLC	300mm
HP HEATERS		
21	HP HTR 5A (STEAM SIDE)	300mm
22	HP HTR 6A (STEAM SIDE)	300mm
23	HP HTR 5B (STEAM SIDE)	300mm
24	HP HTR 6B (STEAM SIDE)	300mm
CONDENSATE EXTRACTION PUMPS		
25	EXT P/P A 1ST STAGE DISCH NRV	400mm
26	EXT P/P B 1ST STAGE DISCH NRV	400mm
27	EXT P/P 2ND STAGE DISCH NRV	400mm
28	EXT P/P 2ND STAGE DISCH NRV	400mm
GSC AND DRAINS TANK (Non Valve)		
29	GLAND STEAM CONDENSER	800mm
30	DRAIN TANK	800mm
31	GSC DRAIN TANK DRN TO COND VV	25mm
SECONDARY CW SYSTEM (SCW)		
32	SEC CW (GEN)P/P B DISCH IV	400mm
33	SEC CW (GEN) EXCESS RETURN V	400mm
34	SEC CW (GEN) EXCESS RETURN V IV	400mm
35	SEC CW (GEN) P/P A DISCH NRV	400mm
36	SEC CW (GEN) P/P A DISCH IV	400mm
37	SEC CW (GEN) P/P B DISCH NRV	400mm
38	SEC CW (GEN)P/P B DISCH IV	400mm
BFPT SAE AIR VALVES		
39	BFPT SAE ISOLATING VALVE A	300mm
40	BFPT SAE AIR VALVES	300mm
41	BFPT SAE AIR VALVES	300mm
42	BFPT SAE AIR VALVES	300mm

43	MC/BFPT INTERCONNECTOR	300mm
44	BFPT CONDENSER LEVEL CONTROL VALVE	200mm
45	BFPT VACUUM BREAKER I/V	100mm
46	BFPT CDV SPRAY VALVE	50mm
47	BFPT CONDENSER LEVEL CONTROL VALVE	200mm
48	BFPT CONDENSER	400mm
SCW (EJECTOR SYSTEM)		
49	WAE A1 CW Inlet CTRL vlv	300mm
50	WAE B1 CW Inlet CTRL vlv	300mm
51	WAE B2 WTR INLET VALVE	300mm
52	WAE A2 CW Inlet CTRL vlv	300mm
53	WAE B2 CW Inlet CTRL vlv	300mm
54	WAE A1 CW INLET STRAINER	300mm
55	WAE B1 CW INLET STRAINER	300mm
56	WAE A2 CW INLET STRAINER	300mm
57	WAE B2 CW INLET STRAINER	300mm
58	WAE A1 SUCTION CNTRL V/V	250mm
59	WAE A2 SUCTION CONTROL V/V	250mm
60	WAE B1 SUCTION CONTROL V/V	250mm
61	WAE B2 SUCTION CNTRL VV	250mm
62	WAE A2 Bellow (2 off)	250mm
63	WAE A1 Bellow (2 off)	250mm
64	WAE B1 Bellow (2 off)	250mm
65	WAE B2 Bellow (2 off)	250mm
66	SEC CW (GEN) EXCESS RETURN VALVE	400mm
67	SEC CW (GEN) EXCESS RETURN ISOLATING VALVE	400mm
GLAND STEAM SYSTEM		
68	HP/IP DUMP VALVE	300mm

LP SPRAY COOLING SYSTEM		
69	LP SPRAY COOLING DUPLEX STRAINER	100mm
70	HP HTR 6A EMERG DRN/HOT COND CNTRL VALVE	300mm
71	HP HTR 6B EMERG DRN/HOT COND CNTRL VALVE	300mm
72	HP HTR 5B DRN TO DST CNTRL VALVE	300mm

Lethabo Boiler Valves GO/MGO/IR (269)		
QIP	TOTAL VALVES	SIZE
	BOILER PRESSURE PARTS : SOOTBLOWER VALVE STATION	
1	S/H HAND ISOLATING VLV	200mm
2	R/H HAND ISOLATING VLV	200mm
3	R/H NRV	200mm
4	S/H MOT STOP VLV	50mm
5	R/H MOT STOP VLV	50mm
6	S/H STRAINER	200mm
7	R/H STRAINER	200mm
8	S/H REG VLV _cut out	200mm
9	S/H REG VLV _cut out	200mm
10	S/H BALANCE LINE VLV _cut out	25mm
11	R/H BALANCE LINE V/V _cut out	25mm
	SOOTBLOWER SECTION VALVE	
12	S/BLWR LHB MOT	150mm
13	S/BLWR LHB MOT	150mm
14	S/BLWR LHB MOT	150mm

15	S/BLWR LHB MOT	150mm
16	S/BLWR RHT MOT	150mm
17	A/H S/BLWR MOT	150mm
18	A/H S/BLWR MOT	150mm
19	A/H S/BLWR MOT	150mm
20	A/H S/BLWR MOT	150mm
	SOOTBLOWER DRAIN LINES	
21	S/BLWR LHB DRAIN	50mm
22	S/BLWR LHT DRAIN	50mm
23	S/BLWR RHB DRAIN	50mm
24	S/BLWR RHT DRAIN	50mm
25	S/BLWR LHB DRAIN	50mm
26	S/BLWR LHB DRAIN	50mm
27	S/BLWR S/H DRAIN	50mm
28	S/BLWR S/H DRAIN	50mm
	LP BYPASS VALVE SYSTEM	
29	LP BYPASS SW ISOL VV(150MM PEGLER & LOUDEN)	150mm
30	LP BYPASS WARNING DRN VALVE RH	50mm
31	LP BYPASS WARNING DRN VALVE LH	50mm
32	LP BYPASS WARNING LINE ISOL VALVE	50mm
33	LP BYPASS LH DRAIN TO CONDENSOR MASTER ISOL V/V	50mm
34	LP BYPASS LH DRAIN TO CONDENSOR MARTYR ISOL V/V	50mm
35	LP BYPASS RH ISOL V/V BYPASS WARNING LINE ISOL V/V	50mm
36	LP BYPASS RH DRAIN TO CONDENSOR MASTER ISOL V/V	50mm

CIRCULATING VALVES SYSTEM		
37	CIRC P/P SUCTION MOT V/V	400mm
38	CIRC P/P SUCTION MOT V/V BYPASS(32MM VKS1 SEMPELL)	50mm
39	CIRC P/P "A" OUTLET REG MOT VALVE(250MM W&T)	250mm
40	CIRC P/P "B" OUTLET REG MOT V/V(250MM W&T)	250mm
41	CIRC P/P DISCHARGE MOT V/V	350mm
42	CIRC P/P DISCHARGE MOT V/V BYPASS(32mm sempell)	50mm
43	CIRC PMP A NON RET (250MM SEMPELL)	250mm
44	CIRC PMP B NON RET (250MM SEMPELL)	250mm
45	CIRC PMP STRAINER	400mm
46	CIRC PMP LEAK OFF(125MM SEMPELL GS2)	125mm
47	CIRC PMP LEAK OFF NRV (80MM SEMPELL)	80mm
48	CIRC PMP B LEAK OFF NRV	80mm
AUXILIARY STEAM RANGE SYSTEM		
49	CR MAIN ISOLATING MOT VALVE	250mm
50	AUX STM REG V/V SEMPELL (200MM) 2off Motaflex	200mm
51	AUX ISOLATING VALVE (350MM SEMPELL)	350mm
52	STM TRAP ISOL VALVE	25mm
53	AUX STM TRAP BYPASS MOT VALVE (25MM SEMPELL)	25mm
54	STM TRAP ISOL VALVE	25mm
55	STM TRAP ISOL VALVE	25mm
56	STM TRAP	25mm
57	AUX STM NRV	200mm
58	AUX STM MAIN MOT ISOL VALVE (250MM SEMPELL)	250mm

59	AUX BTR COMMON ISOL VALVE (15MM SEMELL)	15mm
60	AUX STM TRAP BYPASS MOT VALVE (25MM SEMPELL)	25mm
61	STM TRAP	25mm
62	STM TRAP ISOL VALVE	25mm
	BOILER WARMING SYSTEM	
63	BLR WARM UP	200mm
64	BLR WARM UP	200mm
65	BLR WARM UP NRV	150mm
	MAIN STEAM SYSTEM	
66	ISOLATING VALVE	25mm
67	ISOLATING VALVE	25mm
68	ISOLATING VALVE	25mm
	COLLECTING VESSEL DRAIN AND BLOWDOWN SYSTEM	
69	BLOW DOWN VESSEL REG MOT ISOL "A" (200MM SEMPELL)	200mm
70	BLOW DOWN REG ISOL MOT VALVE "A" BYPASS(25MM SEMPELL VKS 1)	25mm
71	BLOW DOWN VESSEL REG ISOL V "B"(200 SEMPELL GS 2)	200mm
72	BLOW DOWN REG ISOL MOT VALVE "B" BYPASS (25MM SEMPELL)	25mm
	57ML BOILER RHS VENT STATION	
73	ECON INLET VENT	50mm
74	ECON INLET VENT	50mm
75	DIV WALL OUTLET VENT	50mm
76	DIV WALL OUTLET VENT I/V	50mm
77	EVAP OUTLET VENT	50mm
78	EVAP OUTLET VENT I/V	50mm

79	SH 1 LHS VENT	50mm
80	SH 1 LHS VENT AND ISOLATION	50mm
81	SH 1 RHS VENT AND ISOL	50mm
82	SH 1 RHS VENT V/V	50mm
83	SH 2 INLET 1 AND 2 VENT	50mm
84	SH2 INLET 3 AND 4 VENT	50mm
85	SH 2 INLET 1 AND 2 VENT AND ISOLATION	50mm
86	SH 2 INLET 3 AND 4 VENT AND ISOLATION	50mm
87	SH ATT 3.1 AND 3.2 VENT	50mm
88	SH ATT 3.3 AND 3.4 VENT	50mm
89	SH ATT 3.1 AND 3.2 VENT AND ISOLATION	50mm
90	SH ATT 3.3 AND 3.4 VENT AND ISOLATION	50mm
91	SH 4 OUTLET HEADER 1 VENT	50mm
92	SH 4 OUTLET HEADER 2 VENT	50mm
93	SH 4 OUTLET HEADER 1 VENT AND ISOLATION	50mm
94	SH 4 OUTLET HEADER 2 VENT AND ISOLATION	50mm
95	RH 1 INLET LHS VENT	50mm
96	RH 1 INLET RHS VENT	50mm
97	RH 1 INLET LHS VENT AND ISOLATION	50mm
98	RH 1 INLET RHS VENT AND ISOLATION	50mm
	16 ML BOILER RHS DRAIN STATION	
99	S/H 1.1 OUTLET HDR DRAIN VV	50mm
100	S/H 1.1 OUTLET HDR DRAIN ISOL VV	50mm
101	S/H 1.2 OUTLET HDR DRAIN VV	50mm

102	S/H 1.2 OUTLET HDR DRAIN ISOL VV	50mm
103	S/H ATT 2.1 + 2 DRAIN VV	50mm
104	S/H ATT 2.1 + 2 DRAIN ISOL VV	50mm
105	S/H ATT 2.3 + 4 DRAIN VV	50mm
106	S/H ATT 2.3 + 4 DRAIN ISOL VV	50mm
107	S/H 3.1 INL HDR DRAIN VV	50mm
108	S/H 3.1 INL HDR DRAIN ISOL VV	50mm
109	S/H 3.2 INL HDR DRAIN VV	50mm
110	S/H ATT 3.1 + 2 DRN V/V	50mm
111	S/H ATT 3.1 + 2 DRN ISOL V/V	50mm
112	S/H ATT 3.3 + 4 DRN V/V	50mm
113	S/H ATT 3.3 + 4 DRN ISOL V/V	50mm
114	RH OUT HDR 1 DRAIN ISOL VV	50mm
115	RH OUT HDR 2 DRAIN ISOL VV	50mm
116	RH OUT HDR 1 DRAIN VV	50mm
117	RH 2 OUT HDR 2 DRAIN VV	50mm
118	SH COLLECTION DRAIN VV	50mm
119	SH COLL ISOL AND DRAIN V/V	50mm
120	RH COLLECTION DRAIN	50mm
	2 ML BOILER FRONT DRAIN STATION	
121	HP BYPASS SPR WATER DRAIN V/V	50mm
122	HP BYPASS SPR WATER DRAIN I/V	50mm
123	EVAP COIL DRN ISOL V/V	50mm
124	EVAP COIL DRN ISOL V/V	50mm

125	FEEDWATER DRAIN HIV(25MM VKS1)	50mm
126	FEEDWATER DRAIN ISOL HIV	50mm
127	DIV WALL DRAIN V/V	50mm
128	DIV WALL DRAIN I/V	50mm
129	F.INLET HELICAL EVAP DRAIN V/V LH	50mm
130	F.INLET HELICAL EVAP DRAIN V/V LH	50mm
131	F.INLET HELICAL EVAP DRAIN V/V RH	50mm
132	R.INLET HELICAL EVAP DRAIN V/V LH	50mm
133	R.INLET HELICAL EVAP DRAIN ISOL V/VLH	50mm
134	R.INLET HELICAL EVAP DRAIN V/V RH	50mm
135	R.INLET HELICAL EVAP DRAIN ISOL V/V RH	50mm
136	UPPER EVAP INLET DRAIN V/V LH	50mm
137	UPPER EVAP INLET DRAIN I/V LH	50mm
138	UPPER EVAP INLET DRAIN VV RH(25MM SEMPELL VKS1)	50mm
139	UPPER EVAP INLET DRAIN ISOL VV RH(25MM SEMPELL VKS1)	50mm
140	CIRC PUMP A DRAIN V/V	50mm
141	CIRC PUMP A DRAIN V/V	50mm
142	CIRC PUMP B DRAIN V/V	50mm
	BLOWDOWN VESSEL MANIFOLD DRAIN STATION	
143	CR LEG DRAIN 1 NRV	50mm
144	CR LEG DRAIN 1 ISOL VALVE	50mm
145	CR LEG DRAIN 2 NRV	50mm
146	CR LEG DRAIN 2 ISOL VALVE	50mm
147	HR LEG DRAIN 2 ISOL VV	50mm

148	HR TURB LEG 1 DRAIN NRV	50mm
149	HR TURB LEG 2 DRAIN NRV	50mm
150	HR TURB LEG 3 DRAIN NRV	50mm
151	HR TURB LEG 4 DRAIN NRV	50mm
152	HR LRG DRAIN 1 ISOL VV	50mm
153	LP BYPASS 1 AND 2 DRAIN NRV	50mm
154	LP BYPASS 1 AND 2 DRAIN ISOL VALVE	50mm
155	HR/LP BYPASS 1 AND 2 WARMING NRV	50mm
156	HR AND LP BYPASS WARM ISOL VV	50mm
157	HR/LP BYPASS 3 AND 4 WARMING NRV	50mm
158	LP BYPASS 3 AND 4 WARMING NRV	50mm
159	LP BYPASS 3 AND 4 NRV	50mm
160	LP BYPASS 3 AND 4 DRAIN	50mm
161	HR LEG DRAIN 4 ISOL V/V	50mm
162	HR LEG DRAIN 4 ISOL V/V	50mm
163	MS TURB LEG 1 ISOL VALVE	50mm
164	MS LEG 2 DRAIN 1 NRV	50mm
165	MS TURB LEG 2 ISOL VALVE	50mm
166	MS LEG DRAIN 1 NRV	50mm
167	MS LEG 3 DRAIN NRV	50mm
168	MS TURB LEG 3 ISOL VALVE	50mm
169	MS LEG 4 NRV	50mm
170	MS TURB LEG 4 ISOL VALVE	50mm
171	MS TURB LEG WARM NRV	50mm

172	MS TURB LEG ISOL VALVE	50mm
173	LP BYPASS 1 AND 2 DRAIN MOT	50mm
174	LP BYPASS 3 AND 4 DRAIN MOT	50mm
175	GLND WARMING LINE ISOL V/V	50mm
176	MS TURB LEG WARM MOT ISOL VV	50mm
177	AUX STEAM NRV	50mm
178	R/H SAFETY V/V NRV	50mm
179	R/H VENT TUNDISH NRV	50mm
180	AUX RING DRAIN V/V	50mm
181	FEEDWATER NRV	50mm
182	RH ATT 1 RESIDUAL DRAIN	50mm
183	RH ATT 2 RESIDUAL DRAIN	50mm
184	RH ATT 3 RESIDUAL DRAIN	50mm
185	RH ATT 4 RESIDUAL DRAIN	50mm
186	RH ATT 1 RESIDUAL DRAIN AND ISOLATION	50mm
187	RH ATT 2 RESIDUAL DRAIN AND ISOLATION	50mm
188	RH ATT 3 RESIDUAL DRAIN AND ISOLATION	50mm
189	RH ATT 4 RESIDUAL DRAIN AND ISOLATION	50mm
190	RH FILLER	50mm
191	RH FILLER NON RET	50mm
192	HP BYPASS DRAIN VALVE	50mm
193	REHEATER INLET (SWEEPING / AIR ADMISSION VALVES)	50mm
	CIRCULATING SYSTEM	
194	CIRCULATING PUMP A	500mm

195	CIRCULATING PUMP B	500mm
	S/H SPRAYWATER VALVE SYSTEM	
196	S/H 1.1 SPRAY WTR ISOL MOT V/V A	150mm
197	S/H 1.1 SPRAY WTR ISOL MOT V/V B	150mm
198	S/H 1.1 SPRAY WTR ISOL V/V A	150mm
199	S/H 1.1 SPRAY WTR ISOL V/V B	150mm
200	S/H 1.2 SPRAY WTR ISOL MOT V/V A	150mm
201	S/H 1.2 SPRAY WTR ISOL MOT V/V B	150mm
202	S/H 1.2 SPRAY WTR ISOL V/V A	150mm
203	S/H 1.2 SPRAY WTR ISOL V/V B	150mm
204	S/H 2.1 SPRAY WTR ISOL MOT V/V A	150mm
205	S/H 2.1 SPRAYWATER ISOL MOT V/V B	150mm
206	S/H 2.1 SPRAYWATER ISOL V/V A	150mm
207	S/H 2.1 SPRAYWATER ISOL V/V B	150mm
208	S/H 2.2 SPRAYWATER ISOL MOT V/V A	150mm
209	S/H 2.2 SPRAYWATER ISOL MOT V/V B	150mm
210	S/H 2.2 SPRAYWATER ISOL V/V A	150mm
211	S/H 2.2 SPRAYWATER ISOL V/V B	150mm
212	S/H 2.3 SPRAYWATER ISOL MOT V/V A	150mm
213	S/H 2.3 SPRAYWATER ISOL MOT V/V B	150mm
214	S/H 2.3 SPRAYWATER ISOL V/V A	150mm
215	S/H 2.3 SPRAYWATER ISOL V/V B	150mm
216	S/H 2.4 SPRAY WTR ISOL MOT V/V A	150mm
217	S/H 2.4 SPRAYWATER ISOL MOT V/V B	150mm

218	S/H 2.4 SPRAY WTR ISOL MOT V/V A	150mm
219	S/H 2.4 SPRAY WTR ISOL MOT V/V B	150mm
220	S/H 3.1 SPRAYWATER ISOL MOT V/V A	150mm
221	S/H 3.1 SPRAYWATER ISOL MOT V/V B	150mm
222	S/H 3.1 SPRAYWATER ISOL V/V A	150mm
223	S/H 3.1 SPRAYWATER ISOL V/V B	150mm
224	S/H 3.2 SPRAYWATER ISOL MOT V/V A	150mm
225	S/H 3.2 SPRAYWATER ISOL MOT V/V B	150mm
226	S/H 3.2 SPRAYWATER ISOL V/V A	150mm
227	S/H 3.2 SPRAYWATER ISOL V/V B	150mm
228	S/H 3.3 SPRAYWATER ISOL MOT V/V A	150mm
229	S/H 3.3 SPRAYWATER ISOL MOT V/V B	150mm
230	S/H 3.3 SPRAYWATER ISOL V/V A	150mm
231	S/H 3.3 SPRAYWATER ISOL V/V B	150mm
232	S/H 3.4 SPRAYWATER ISOL MOT V/V A	150mm
233	S/H 3.4 SPRAYWATER ISOL MOT V/V B	150mm
234	S/H 3.4 SPRAYWATER ISOL V/V A	150mm
235	S/H 3.4 SPRAYWATER ISOL V/V B	150mm
	R/H SPRAYWATER VALVE SYSTEM	
236	R/H ATT 1 SPRAY WTR ISOL MOT V/V "A"	50mm
237	R/H ATT 1 SPRAY WTR ISOL MOT V/V "B"	50mm
238	R/H ATT 1 SPR WTR ISOL V/V "A"	50mm
239	R/H ATT 1 SPR WTR ISOL V/V "B"	50mm
240	R/H ATT 2 SPR WTR ISOL MOT V/V "A"	50mm

241	R/H ATT 2 SPR WTR ISOL MOT V/V "B"	50mm
242	R/H ATT 2 SPR WTR ISOL V/V "A"	50mm
243	R/H ATT 2 SPR WTR ISOL V/V "B"	50mm
244	R/H ATT 3 SPR WTR ISOL MOT V/V "A"	50mm
245	R/H ATT 3 SPR WTR ISOL MOT V/V "B"	50mm
246	R/H ATT 3 SPR WTR ISOL V/V "A"	50mm
247	R/H ATT 3 SPR WTR ISOL V/V "B"	50mm
248	R/H ATT 4 SPR WTR ISOL MOT V/V "A"	50mm
249	R/H ATT 4 SPR WTR ISOL MOT V/V "B"	50mm
250	R/H ATT 4 SPR WTR ISOL V/V "A"	50mm
251	R/H ATT 4 SPR WTR ISOL V/V "B"	50mm
	ADDITIONAL SCOPE	
252	HP BYPASS SW STOP VALVE	200mm
253	ISOLATING VALVE	25mm
254	ISOLATING VALVE	25mm
255	ISOLATING VALVE	25mm
256	ISOLATING VALVE	25mm
257	ISOLATING VALVE	25mm
258	HP BYPASS VALVE MONOSTAT ISOL VALVE 1	50mm
259	HP BYPASS VALVE MONOSTAT ISOL VALVE 2	50mm
260	HP BYPASS VALVE MONOSTAT ISOL VALVE 3	50mm
261	REHEAT SAFETY VALVE MONOSTAT ISOL VALVE 1	50mm
262	REHEAT SAFETY VALVE MONOSTAT ISOL VALVE 2	50mm
263	REHEAT SAFETY VALVE MONOSTAT ISOL VALVE 3	50mm

264	CIRC PUMP WARMING MASTER VALVE	25mm
265	CIRC PUMP WARMING MASTER CNTR VALVE	25mm
266	CIRC A WARMING NRV	25mm
267	CIRC B WARMING NRV	25mm
268	CIRC PUMP INJ ISOL	150mm
269	CIRC PUMP INJ MOT	50mm

Lethabo U1 IN Boiler Valves (21)		
QIP NO	Task Name	Size
1	MS LEG 1 MOT ISOL VV(50MM SEMPELL VKS1)	50mm
2	MS LEG 2 MOT ISOL VV(50MM SEMPELL VKS1)	50mm
3	MS LEG 3 MOT ISOL VV(50MM SEMPELL VKS1)	50mm
4	ME LEG 4 MOT ISOL VV(50MM SEMPELL VKS1)	50mm
5	HR LEG DRAIN 1 MOT ISOL VALVE(50MM SEMPELL VKS1)	50mm
6	HR LEG DRAIN 2 MOT ISOL VALVE(50MM SEMPELL VKS1)	50mm
7	HR LEG DRAIN 3 MOT ISOL VALVE(50MM SEMPELL VKS1)	50mm
8	HR LEG DRAIN 4 MOT ISOL VALVE(50MM SEMPELL VKS1)	50mm
9	TURB CR LEG DRN 1 MOT ISOL(50MM SEMPELL VKS1)	50mm
10	TURB CR LEG DRN 2 MOT ISOL(50MM SEMPELL VKS1)	50mm
CIRCULATING PUMPS		
11	CIRCULATING PUMP A	500mm
12	CIRCULATING PUMP B	500mm
AUX RANGE SYSTEM		
13	AUX STM REG V/V SEMPELL (200MM)	200mm

14	AUX STM MAIN MOT ISOL VALVE (250MM SEMPELL)	250mm
BLOWDOWN SYSTEM		
15	BLOW DOWN VESSEL REG 50% MOT VALVE A	25mm
16	BLOW DOWN VESSEL REG MOT ISOL "A" (200MM SEMPELL)	200mm
17	BLOW DOWN REG MOT ISOL "A" BYPASS (25MM SEMPELL)	25mm
18	BLOW DOWN REG MOT ISOL "B"	250mm
19	BLOW DOWN REG 50% MOT VALVE B	250mm
20	BLOW DOWN REG MOT ISOL "B" BYPASS	250mm
21	BLOW DOWN VESSEL MOT REG VALVE	250mm

Matla Power Station: Boiler Valves, Turbine Valves, and Commissioning - strip, inspect, blue, box and stroke. Estimate scope below for a GO/MGO/IR (subject to change):

MATLA TURBINE VALVES GO/MGO/IR (758)		
QIP	MAIN CONDENSER	SIZE
1	CW DOORS (3 Off)	300mm
2	CW DOORS (3 Off)	300mm
3	MAIN CONDENSER	300mm
4	MAIN CONDENSER NECK	300mm
5	HOTWELL(2 OFF)	300mm
6	HOTWELL(2 OFF)	300mm
7	VACUUM BREAKER	300mm
8	HC DOG BONE FILLING IV	1"
9	CC DOG BONE FILLING IV	1"
10	NORMAL MU A HAND I/V	100mm
11	NORMAL MU B HAND I/V	100mm
12	DEMIN MAKE-UP B TO HOT COND	100mm

13	DEMIN MAKE-UP A TO HOT COND	100mm
14	DEMIN MAKE-UP EMERG TO COLD COND	300mm
15	CDV SPRAYWATER CONTR V	50mm
16	EXT P/P A 1ST STAGE DISCH NRV	300mm
17	EXT P/P B 1ST STAGE DISCH NRV	300mm
18	EXT P/P A 2ND STAGE DISCH NRV	300mm
19	EXT P/P B 2ND STAGE DISCH NRV	300mm
20	EXT P/P SUC LINE DRN V	150mm
21	EXT P/P 1ST STAGE RECIRC CNTR V	150mm
22	EXT P/P 1ST STAGE RECIRC DRN V	25mm
23	EXT P/P 1ST STAGE RECIRC VENT	25mm
24	EXT P/P 2ND STAGE RECIRC IV	300mm
25	EXT P/P 2ND STAGE RECIRC CNTR V	300mm
26	EXT P/P A 1ST STAGE SUCTION V/V	300mm
27	EXT P/P A 1ST STAGE SUC DRN V/V	300mm
28	EXT P/P B 1ST STAGE SUCTION V/V	300mm
29	EXT P/P B 1ST STAGE SUC DRN V/V	300mm
30	EXT P/P A 1ST STAGE DISCH I/V	300mm
31	EXT P/P A 1ST STAGE LEAK OFF TO CC IV	150mm
32	EXT P/P A 1ST STAGE STRAINER FILLING I/V	25mm
33	EXT P/P A 2ND STAGE DISCH ISOL BYP V	25mm
34	EXT P/P A 2ND STAGE DISCH IV	400mm
35	EXT P/P A 2ND STAGE SUCTION V	400mm
36	EXT P/P A 1ST STAGE DISCH STRAINER VENT V	25mm
37	EXT P/P A 1ST STAGE DRN V	25mm
38	EXT P/P A 1ST STAGE STRAINER DRN V	50mm
39	EXT P/P B 1ST STAGE DISCH IV	300mm

40	EXT P/P B 1ST STAGE LEAK OFF TO CC IV	150mm
41	EXT P/P B 2ND STAGE DISCH ISOL BYP V	300mm
42	EXT P/P B 2ND STAGE DISCH IV	300mm
43	EXT P/P B 2ND STAGE SUCTION V	300mm
44	EXT P/P B 1ST STAGE DISCH DRN V	300mm
45	EXT P/P B 1ST STAGE DISCH STRAINER VENT V	25mm
46	EXT P/P B 1ST STAGE STRAINER DRN V	25mm
47	CLC INLET I/V	400mm
48	CLC OUTL I/V	400mm
49	CLC BYPASS I/V	400mm
50	CLC(STROKE CHECK AND LEAK TEST TO BE WITNESS BY ENGINEER)	400mm
51	RFWT	300mm
52	EXT P/P STAGE 2 SUCTION TO RFWT V/V	300mm
53	GLAND STEAM CONDENSER	500mm
54	DRAIN TANK	500mm
55	GSC DRAIN TANK DRN TO COND V/V	50mm
56	GSC FAN A OUTLET CONTR V/V	250mm
57	GSC FAN A OUTLET V/V	250mm
58	GSC FAN B DRAIN DTR ISOL V/V	25mm
59	GSC FAN B OUTLET CONTR V/V	250mm
60	GSC FAN B OUTLET NRV	250mm
61	DRAIN COOLER	500mm
62	LP HEATER 1 & 2 (Condensate Side)	1.2m
63	LP HEATER 1 & 2 (Steam Side)	1.2m

64	LP HTR DRN COOLER INL IV BYP V	50mm
65	LP HTR DRN COOLER INL IV	300mm
66	LP HTR DRN COOLER OUTL IV BYP V	50mm
67	LP HTR DRN COOLER OUTL IV	300mm
68	LP HTR DRN COOLER BYP V	50mm
69	LP HTR DRN COOLER BYP V BYP V	300mm
70	DRAINS COOLER DRN V/V	25mm
71	LP HEATER 1 & 2 AND DRAINS COOLER CONTROL ARRANGEMENT	50mm
72	LP HEATER 1 & 2 AND DRAINS COOLER CONTROL ARRANGEMENT	50mm
73	LP HEATER 3 VESSEL (STEAM & FEEDWATER SIDE)	300mm
74	LP HEATER 3 CONTROL ARRANGEMENT	300mm
75	LP HTR 3 STM VENT TO COLD COND	50mm
76	LP HTR 3 EMERG DRN CNTRL V	250mm
77	LP HTR 3 B/S IV A	400mm
78	LP HTR 3 B/S A TO HOT COND DRN V/V	50mm
79	LP HTR 3 B/S IV B	400mm
80	LP HTR 3 B/S B TO HOT COND DRN V/V	50mm
81	LP HTR 3 EMERG DRN IV	50mm
82	LP HTR 3 CTRL ARGT 1 FLG IV	50mm
83	LP HTR 3 CTRL ARGT 1 IV	25mm
84	LP HTR 3 CTRL	50mm
85	LP HTR 3 CTRL ARGT 2 FLG IV	50mm
86	LP HTR 3 CTRL ARGT 2 IV	25mm
87	LP HTR 3 CTRL ARGT 2 IV	50mm
88	LP HTR 3 CTRL ARGT 3 FLG IV	50mm
89	LP HTR 3 CTRL ARGT 3 IV	25mm

90	LP HTR 3 CTRL ARGT 3 IV	50mm
91	LP HTR 3 LEVEL IV	50mm
92	LP HTR 3 LEVEL IV	50mm
93	LP HTR 3 LEVEL TX IV	50mm
94	LP HTR 3 LEVEL TX IV	50mm
95	LP HTR 3 CTRL ARGT DRN V	25mm
96	LP HTR 3 DRN P/P A SUCT IV	150mm
97	LP HTR 3 DRN P/P A DISCH NRV	100mm
98	LP HTR 3 DRN P/P A DISCH IV	80mm
99	LP HTR 3 DRN P/P A LEAK-OFF IV	25mm
100	LP HTR 3 DRN P/P A DISCH DRN V	25mm
101	LP HTR 3 DRN P/P B SUCT IV	150mm
102	LP HTR 3 DRN P/P B DISCH NRV	100mm
103	LP HTR 3 DRN P/P B DISCH IV	80mm
104	LP HTR 3 DRN P/P BLEAK-OFF IV	25mm
105	LP HTR 3 DRN P/P B DISCH DRN V	25mm
106	LP HTR 3 LEVEL CNTR V	100mm
107	LP HTR 3 LEVEL CNTR IV	100mm
108	LP HTR 3 INL FW IV	300mm
109	LP HTR 3 INL FW IV BYP IV	50mm
110	LP HTR 3 FW BYP IVDRN P/P A DISCH IV	250mm
111	LP HTR 3 FW BYP IV BYP IV	25mm
112	LP HTR 3 OUTL FW IV	300mm
113	LP HTR 3 OUTL FW IV BYP IV	50mm
114	LP HTR 3 OUTL FW NRV	400mm
115	LP HTR 3 OUTL CONDS DRN IV	25mm
116	LP HTR 3 OUTL VENT IV	25mm
117	DA FW INLET VENT V/V	25mm

118	LP HTR 3 OUTL FW IV	25mm
119	LP HTR 3 OUTL DRN V/V TO EXP VES	25mm
120	LP HTR 3 OUTL DRN V/V	25mm
121	LP HTR 3A BLED STM A PRESS TX IV	25mm
122	LP HTR 3A STM PRESS TP	15mm
123	LP HTR 3B STM PRESS TP	15mm
124	LP HTR 3B BLED STM A PRESS TX IV	15mm
125	LP HTR 3 PRESS TP	15mm
126	LP HTR 3 DRAIN PIPE DRAIN V/V	50mm
127	LP HTR 3 PRESS TP	15mm
128	DEAERATOR	300mm
129	DA CONTROL ARRANGEMENT	300mm
130	DLC	400mm
131	DLC INLET I/V	400mm
132	DLC OUTLET I/V	400mm
133	DLC BYPASS IV	400mm
134	DEAERATOR STORAGE TANK	300mm
135	B DA STM INLET V/V	400mm
136	B DA STM INLET MOT BYP V/V	50mm
137	B DA STM INLET HAND BYP V/V	50mm
138	A DA STM INLET V/V	400mm
139	A DA STM INLET MOT BYP V/V	50mm
140	A DA STM INLET HAND BYP V/V	50mm
141	B DA FEEDWATER INLET V/V	300mm
142	B DA FEEDWATER INLET BYP V/V	50mm
143	A DA FEEDWATER INLET V/V	300mm
144	A DA FEEDWATER INLET BYP V/V	50mm

145	DA VENT TO ATM V/V A	25mm
146	DA VENT TO ATM V/V B	25mm
147	DA VENT TO COND V/V	25mm
148	D/A LEVEL IND ISOL V/V	25mm
149	DA CTRL ARGT ISOL V/V	50mm
150	DA CTRL ARGT ISOL V/V	50mm
151	DLC INLET ISOL BYP V/V	50mm
152	DLC OUTLET ISOL BYP V/V	50mm
153	AUX STM TO DST ISOL V/V	250mm
154	AUX STM TO DST ISOL BYP V/V	25mm
154	DST WARM STM ISOL BYP HIV	25mm
155	AUX STM TO DST NRV	250mm
156	DST CTRL ARGT 1 BOTTOM IV	50mm
157	DST CTRL ARGT 1 DRN TO EV IV	50mm
158	DST CTRL ARGT 1 TOP IV	50mm
159	DST CTRL ARGT 1 VENT TO COND IV	25mm
160	DST CTRL ARGT 1 BOTTOM IV	50mm
161	DST CTRL ARGT 1 DRN TO EV IV	50mm
162	DST CTRL ARGT 1 TOP IV	25mm
163	DST CTRL ARGT 1 VENT TO COND IV	50mm
164	DST CTRL ARGT VENT V/V	25mm
165	DST CTRL ARGT 1 BOTTOM IV	50mm
166	DST CTRL ARGT 1 DRN TO EV IV	50mm
167	DST CTRL ARGT 1 TOP IV	50mm
168	DST CTRL ARGT 1 VENT TO COND IV	50mm
169	DST LTX IV	50mm
170	DST LTX IV	50mm
171	IP BLED STM PIPE DRN V TO COND	50mm

172	IP BLED STM IV	400mm
173	IP BLED STM IV MOT BYP V	50mm
174	IP BLED STM HAND BYP V	50mm
175	IP BLED STM DRAIN VESSEL DRN	25mm
176	IP BLED STM DRAIN VESSEL DRN TO COND	25mm
177	IP BLED STM DRAIN VESSEL DRN TO COND INL IV	25mm
178	DA LEVEL CTRL DRN V	25mm
179	IP BLED STM DRAIN VESSEL STM TRAP	50mm
180	IP BLED STM DRAIN VESSEL STM TRAP OUTL IV	50mm
181	IP BLED STM TO DA SUPPLY NRV	400mm
182	IP BLED STM PP ISOL V/V	15mm
183	IP BLED STM PP ISOL V/V	15mm
184	IP BLED STM PTX ISOL V/V	15mm
185	CRH STM TO DA IV	400mm
186	CRH STM TO DA IV MOT BYP V	50mm
187	CRH STM TO DA IV MOT BYP V	50mm
188	CRH STM TO DA IV HAND BYP V	50mm
189	CRH STM TO DA CNTR V	400mm
190	AUX STM TO DA CNTRL V/V	300mm
191	AUX STM TO DA CNTRL V/V	400mm
192	AUX STM TO DA IV MOT BYP V	50mm
193	AUX STM TO DA NRV	300mm
194	AUX STM TO DA IV HAND BYP V	50mm
195	AUX STM TO DA PS IV	25mm
196	DST PRESS IND IV	15mm
197	DST PRESS TX IV	50mm
198	DST PRESS TP	15mm
199	DST DOSING V/V	15mm

200	DST SAMPLING V/V	15mm
201	DST PRESS IND V/V	50mm
202	DST LEVEL IND TOP ISOL V/V	50mm
203	DST LEVEL CONTROL ARGV BOTM ISOL V/V	50mm
204	DST CONTROL ARGV	50mm
205	DST CONTROL ARRANGEMENT (9 OFF)	50mm
206	IP B/S DRAIN POCKET/VESSEL	800mm
207	IP B/S TO DA NRV	300mm
208	SAE B	200mm
209	SAE A	200mm
210	STM EJECT A AIR CNTR V/V	200mm
211	STM EJECT A AIR IV	200mm
212	STM EJECT A STM INL IV	200mm
213	STM EJECT B AIR CNTR V	200mm
214	STM EJECT A AIR IV	200mm
215	STM EJECT A STM INL IV	200mm
216	WAE A1	200mm
217	WAE A2	200mm
218	WAE B1	200mm
219	WAE B2	200mm
220	WAE A1 AIR CV	200mm
221	WAE A2 AIR CV	200mm
222	WAE B1 AIR CV	200mm
223	WAE B2 AIR CV	200mm
224	WAE A1 AIR IV	200mm
225	WAE A2 AIR IV	200mm

226	WAE B1 AIR IV	200mm
227	WAE B2 AIR IV	200mm
228	WAE A1 WTR INL V	200mm
229	WAE A2 WTR INL V	200mm
230	WAE B1 WTR INL V	200mm
231	WAE B2 WTR INL V	200mm
232	SEC CW (GEN) P/P A SUCTION V	300mm
233	SEC CW (GEN) P/P A DISCH NRV	300mm
234	SEC CW (GEN) P/P A DISCH IV	300mm
235	SEC CW (GEN) P/P B SUCTION V	300mm
236	SEC CW (GEN) P/P B DISCH NRV	300mm
237	SEC CW (GEN) P/P B DISCH IV	300mm
238	SEC CW (GEN) EXCESS RETURN V	300mm
239	SEC CW (GEN) EXCESS RETURN V IV	300mm
240	SEC CW (GEN) EXCESS RETURN V IV	300mm
241	SEC CW (GEN) SUMP TANK LOW LEVEL CNTR V/V	150mm
242	SEC CW (GEN) SUMP TANK HIGH LEVEL CNTR V/V	150mm
243	ATMOSPHERIC TANK	300mm
244	TAPROGGE SCREENS (LOWER & UPPER)	80mm
245	TAPROGGE SCREENS (LOWER & UPPER)	80mm
246	TAPROGGE A ACCUMULATOR INL ISOL V/V	80mm
247	TAPROGGE A ACCUMULATOR OUT ISOL V/V	80mm
248	TAPROGGE B ACCUMULATOR INL ISOL V/V	80mm
249	TAPROGGE B ACCUMULATOR OUT ISOL V/V	80mm
250	TAPROGGE P/P RECIRC ISOL V/V	80mm
251	TAPROGGE P/P RECIRC ISOL V/V	80mm

252	GLAND SEAL WATER PRESSURE REDUCING VALVE	80mm
253	GLAND SEAL WATER FILTER	80mm
254	HP HTR 5A (STEAM & FEEDWATER SIDE)	300mm
255	HP HTR 6A (STEAM & FEEDWATER SIDE)	300mm
256	HP HTR 6B (STEAM & FEEDWATER SIDE)	300mm
257	HP HTR 5B (STEAM & FEEDWATER SIDE)	300mm
257	HP HTR 5A BS I/V	400mm
258	HP HTR 5A BS I/V BYP	50mm
259	HP HTR 5A BS I/V BYP	50mm
260	HP HTR 5B BS I/V	400mm
261	HP HTR 5B BS I/V BYP	50mm
262	HP HTR 5B BS I/V BYP	50mm
263	HP HTR 6A C R/H STM INL I/V	300mm
264	HP HTR 6A C R/H STM INL IV BP	25mm
265	HP HTR 6A C R/H STM INL IV BP	25mm
266	HP HTR 6B C R/H INL I/V	300mm
267	HP HTR 6B C R/H INL IV BP	25mm
268	HP HTR 6B C R/H INL IV BP	25mm
269	HP HTR 6A DRN/HP 5A CNTRL V/V	100mm
270	HP HTR 5A DRN TO DST CTRL V/V	100mm
271	HP HTR 6B DRN/HPH 5B CTRL V/V	100mm
272	HP HTR 5B DRN TO DST CTRL V/V	100mm
273	HP HTR 5A VENT TO COLD CON CTRL AIR IV	25mm
274	HP HTR 6A VENT TO COLD COND CTRL AIR IV	25mm
275	HP HTR 5B VENT TO COLD COND CTRL AIR IV	25mm
276	HP HTR 6B VENT TO COLD COND CTRL AIR IV	25mm

277	HP HTR 5A EMERG DRN/HOT COND IV	150mm
278	HP HTR 5A EMERG DRN / HOT COND CTRL	150mm
279	HP HTR 6A EMERG DRN/HOT COND IV	350mm
280	HP HTR 6A EMERG DRN/HOT COND CTRL V/V	80mm
281	HP HTR 5B EMERG DRN/HOT COND IV	350mm
282	HP HTR 5B EMERG DRN/HOT COND CTRL V/V	350mm
283	HP HTR 6B EMERG DRN/HOT COND IV	350mm
284	HP HTR 6B EMERG DRN/HOT COND CTRL V/V	350mm
285	HP HEATER 5A DRN IV	200mm
286	HP HEATER 5A DRN/DTR IV	50mm
287	HP HEATER 6A DRN/HTR 5A DRN IV	250mm
288	HP HTR 5A FEEDWATER INL DRN/DTR IV	50mm
289	HP HTR 5A FW INL DRN IV	150mm
290	HP HTR 6A FW OUTL DRN IV	50mm
291	HP HTR 6A FW OUTL DRN/DTR IV	25mm
292	HP HTR 5A FW OUTL PP IV	25mm
293	HP HTR 5A DRN/EV IV	50mm
294	HP HTR 5A FW INL DRN/EV IV	25mm
295	HP HTR 6A DRN/HTR 5A IV	250mm
296	HP HTR 6A DRN/HTR 5A IV	250mm
297	HP HTR 6A CTRL ARGT 1 IV	50mm
298	HP HTR 6A CTRL ARGT 2 IV	50mm
299	HP HTR 6A CTRL ARGT 3 IV	50mm
300	HP HTR 6A CTRL ARGT 1 IV	25mm
301	HP HTR 6A CTRL ARGT 2 IV	25mm
302	HP HTR 6A CTRL ARGT 3 IV	25mm
303	HP HTR 5A CTRL ARGT 1 IV	50mm
304	HP HTR 5A CTRL ARGT 2 IV	50mm

305	HP HTR 5A CTRL ARGT 3 IV	50mm
306	HP HTR 5A CTRL ARGT 1 IV	50mm
307	HP HTR 5A CTRL ARGT 2 IV	50mm
308	HP HTR 5A CTRL ARGT 3 IV	50mm
309	HP HTR 5A EMERGENCY DRN LINE DRN IV	200mm
310	HP HTR 5A EMERGENCY DRN LINE DRN/DTR IV	50mm
311	HP HTR 5A DRN/DST IV	50mm
312	HP HTR 5A CTRL ARGT VENT/DTR IV	25mm
313	HP HTR 6A CTRL ARGT VENT/DTR IV	25mm
314	HP HTR 6A C R/H STM INL NRV TOP COVER PLUG REMOVED	250mm
315	HP HTR 6A DRN/HP 5A DRN IV	25mm
316	HP HTR 5A VENT/EV IV	25mm
317	HP HTR 5A VENT/DTR IV	25mm
318	HP HTR 6A VENT/EV IV	25mm
319	HP HTR 6A VENT/DTR IV	25mm
320	HP HTR 6A LEVEL TX IV	25mm
321	HP HTR 6A LEVEL TX IV	50mm
322	HP HTR 6A LEVEL CTRL IV	50mm
323	HP HTR 6A LEVEL CTRL IV	50mm
324	HP HTR 5A LEVEL TX IV	50mm
325	HP HTR 5A LEVEL TX IV	50mm
326	HP HTR 5A LEVEL CTRL IV	50mm
327	HP HTR 5A LEVEL CTRL IV	50mm
328	HP HTR 6A CTRL ARGT DRN IV	50mm
329	HP HTR 6A CTRL ARGT DRN IV	50mm
330	HP HTR 5A CTRL ARGT DRN IV	50mm
331	HP HTR 6A CTRL ARGT 1/CONT IV	25mm
332	HP HTR 6A CTRL ARGT 2/COND IV	25mm

333	HP HTR 6A CTRL ARGT 3/COND IV	25mm
334	HP HTR 5A CTRL ARGT 1/COND IV	25mm
335	HP HTR 5A CTRL ARGT 2/COND IV	25mm
336	HP HTR 5A CTRL ARGT 3/COND IV	25mm
337	HP HTR 5A CTRL ARGT "1" LVL SW/IND DRN IV	15mm
338	HP HTR 5A CTRL ARGT "2" LVL SW/IND DRN IV	15mm
339	HP HTR 5A CTRL ARGT "3" LVL SW/IND DRN IV	15mm
340	HP HTR 6A CTRL ARGT "1" LVL SW/IND DRN IV	15mm
341	HP HTR 6A CTRL ARGT "2" LVL SW/IND DRN IV	15mm
342	HP HTR 6A CTRL ARGT "3" LVL SW/IND DRN IV	15mm
343	HP HTR 5A EMERGENCY DRN LINE DRN/DTR IV	25mm
344	HP HTR 5A EMERGENCY DRN LINE DRN/EV IV	25mm
345	HP HTR 5A EMERGENCY DRN LINE DRN/DTR IV	25mm
346	HP HTR 5A DRN/DST IV	25mm
347	HP HTR 5A VENT/COND IV	25mm
348	HP HTR 6A DRN/HTR 5A IV	25mm
349	HP HTR 6A DRN/HTR 5A IV BP	25mm
350	HP HTR 6A DRN/HTR 5A DRN/EV IV	25mm
351	HP HTR 6A DRN/HTR 5A DRN/DTR IV	25mm
352	HP HTR 6A EM DRN/HOT COND IV BP	25mm
353	HP HTR 6A VENT / COND IV	25mm
354	HP HTR 6A EMERGENCY DRN LINE DRN/EV IV	25mm
355	HP HTR 6A EMERGENCY DRN LINE DRN/DTR IV	25mm
356	HP HTR 6A PRESS DROP SUB COOLING ZONE DIFF IND IV	15mm
357	HP HTR PRESS DROP SUB-COOLING ZONE DIFF PRESS SW/IND IV	15mm
358	HP HTR 6A HTR 5A PP IV	15mm
359	HP HTR 5A FWT PP IV	15mm
360	HP HTR 6A BS PTX IV	15mm

361	HP HTR 6A BS PP IV	15mm
362	HP HTR 6A C R/H STM INL DIFF PRESS IND/SW IV	15mm
363	HP HTR 6A C R/H STM INL DIFF PRESS IND/SW IV	15mm
364	HP HTR 6A PI IV	15mm
365	HP HTR 6A PP IV	15mm
366	HP HTR 5A BS PTX IV	15mm
367	HP HTR 5A PP IV	15mm
368	HP HTR 5A PI IV	15mm
369	HP HTR 5A PP IV	15mm
370	HP HTR 6A DRN/DTR IV	25mm
371	HP HTR 6A C R/H STM INL NRV TOP COVER PLUG VENT/DTR IV	250mm
372	HP HTR 6A PI IV	15mm
373	HP HTR 6B EMERGENCY DRN LINE DRN IV	25mm
374	HP HTR 6B EMERGENCY DRN LINE DRN/DTR IV	25mm
375	HP HTR 6B DRN/HTR 5B IV	25mm
376	HP HTR 6B DRN/HTR 5B IV	25mm
377	HP HTR 5B EMERGENCY DRN LINE DRN IV	25mm
378	HP HTR 5B DRN IV	25mm
379	HP HTR 5B CTRL ARG 1 IV	50mm
380	HP HTR 5B CTRL ARG 2 IV	50mm
381	HP HTR 5B CTRL ARG 3 IV	50mm
382	HP HTR 5B CTRL ARG 1 IV	50mm
383	HP HTR 5B CTRL ARG 2 IV	50mm
384	HP HTR 5B CTRL ARG 3 IV	50mm
385	HP HTR 6B CTRL ARG 1 IV	50mm
386	HP HTR 6B CTRL ARG 2 IV	50mm
387	HP HTR 6B CTRL ARG 3 IV	50mm
388	HP HTR 6B CTRL ARG 1 IV	50mm

389	HP HTR 6B CTRL ARG2 2 IV	50mm
390	HP HTR 6B CTRL ARG2 3 IV	50mm
391	HP HTR 6B DRN/HTR 5B DRN IV	50mm
392	HP HTR 5B DRN/FWT IV	50mm
393	HP HTR 6B C R/H STM INL NRV TOP COVER PLUG REMOVED	250mm
394	HP HTR 5B EMERGENCY DRN LINE DRN/DTR IV	25mm
395	HP HTR 5B EMERGENCY DRN LINE DRN/DTR IV	25mm
396	HP HTR 5B DR/IV IV	25mm
397	HP HTR 5B DRN/DTR IV	25mm
398	HP HTR 5B DRN TO DST DRN IV	25mm
399	HP HTR 6B EMERGENCY DRN/HOT COND IV BP	25mm
400	HP HTR 6B DRN/HTR 5B DRN/DTR IV	25mm
401	HP HTR 6B DRN/HTR 5B DRN/IV IV	25mm
402	HP HTR 6B DRN/HTR 5B DRN/DTR IV	25mm
403	HP HTR 6B DRN/HTR 5B IV BP	25mm
404	HP HTR 6B DRN/HTR 5B IV BP	25mm
405	HP HTR 6B EMERGENCY DRN LINE DRN/IV IV	25mm
406	HP HTR 6B EMERGENCY DRN LINE DRN/DTR IV	25mm
407	HP HTR 5B VENT/COND IV	25mm
408	HP HTR 6B VENT/COND IV	25mm
409	HP HTR 6B LEVEL CTRL IV	25mm
410	HP HTR 6B LEVEL CTRL IV	25mm
411	HP HTR 6B LEVEL CTRL TX IV	25mm
412	HP HTR 6B LEVEL TX IV	25mm
413	HP HTR 6B CTRL ARG2 1/COND IV	25mm
414	HP HTR 6B CTRL ARG2 2/COND IV	25mm
415	HP HTR 6B CTRL ARG2 DRN/DTR IV	25mm
416	HP HTR 6B CTRL ARG2 3/COND IV	25mm

417	HP HTR 5B LEVEL TX IV	15mm
418	HP HTR 5B LEVEL TX IV	15mm
419	HP HTR 5B LEVEL CTRL IV	15mm
420	HP HTR 5B LEVEL CTRL IV	15mm
421	HP HTR 5B CTRL ARG1 1 LVL SW/IND DRN IV	15mm
422	HP HTR 5B CTRL ARG1 2 LVL SW/IND DRN IV	15mm
423	HP HTR 5B CTRL ARG1 3 LVL SW/IND DRN IV	15mm
424	HP HTR 6B CTRL ARG1 1 LVL SW/IND DRN IV	15mm
425	HP HTR 6B CTRL ARG1 2 LVL SW/IND DRN IV	15mm
426	HP HTR 6B CTRL ARG1 3 LVL SW/IND DRN IV	15mm
427	HP HTR 5B CTRL ARG1 DRN/DTR IV	15mm
428	HP HTR 5B CTRL ARG1 1/COND IV	15mm
429	HP HTR 5B CTRL ARG1 2/COND IV	15mm
430	HP HTR 5B CTRL ARG1 2/COND IV	15mm
431	HP HTR 6B/HP HTR PP IV	15mm
432	HP HTR 6B PRESS DROP SUB-COOLING ZONE DIFF	15mm
433	HP HTR 6B PRESS DROP SUB-COOLING ZONE DIFF	15mm
434	HP HTR 5B DRN TO DST PP IV	15mm
435	HP HTR 6B C R/H STM INL DIFF PRESS IND/SW IV	15mm
436	HP HTR 6B C R/H STM INL DIFF PRESS IND/SW IV	15mm
437	HP HTR 6B PI IV	15mm
438	HP HTR 6B C R/H STM INL PP IV	15mm
439	HP HTR 6B PP IV	15mm
440	HP HTR 6B C R/H STM INL PRESS TX IV	15mm
441	HP HTR 5B PP IV	15mm
442	HP HTR 5B PI IV	15mm
443	HP HTR 5B BS PP IV	15mm
444	HP HTR 5B BS PTX IV	15mm

445	HP HTR 5B VENT IEV IV	25mm
446	HP HTR 6B VENT IEV IV	25mm
447	HP HTR 6B VENT DTR IV	25mm
448	HP HTR 5B VENT DTR IV	25mm
449	HP HTR 5B CTR ARGV VENT/DTR IV	25mm
450	HP HTR 6B EMERGENCY DRN LINE DRN/DTR IV	25mm
451	HP HTR 6B FW OUTL P/P IV	15mm
452	HP HTR 5B FW	25mm
453	HP HTR 5B EMERGENCY DRN LINE DRN/EV IV	25mm
454	CONDENSATE POLISHER A	300mm
455	CONDENSATE POLISHER B	300mm
456	CONDENSATE POLISHER C	300mm
457	POLISHER A VENT BIN CNTRL V/V	50mm
458	CONDS POLISHER 1 A DRN WTR CTRL V/V	50mm
459	CONDS POLISHER 1A AIR & TRF WTR CTRLV/V	50mm
460	CONDS POLISHER 1 A FIL WTR INL CTRL V/V	300mm
461	Conds polisher 1A Inl isol bin ctrl v/v	300mm
462	POLISHER 1A OUTL ISOL BIN CTRL V/V	300mm
463	CONDS POLISHER 1 B VENT BIN CTRL V/V	50mm
464	CONDS POLISHER 1B RINSE WTR OUT LCTRL V/V	100mm
465	CONDS POLISHER 1B AIR & TRF WTR CTRL V/V	100mm
466	CONDS POLISHER 1B FIL WTR INLET CTRLV/V	300mm
467	Conds polisher 1B Inl isol bin ctrl v/v	300mm
468	CPP 1B OUTL ISOL BIN CTRL V/V	300mm
469	CONDS POLISHER 1 C VENT BIN CTRL V/V	50mm
470	CONDS POLISHER 1 C DRN WTR OUTL CTRL V/V	100mm
471	CONDS POLISHER 1C AIR & TRF WTR CTRL V/V	100mm

472	CONDS POLISHER 1 C FIL WTR INL CTRL V/V	300mm
473	Conds polisher 1C Inl isol bin ctrl v/v	300mm
474	CPP 1C OUTL BIN CTRL V/V (MOVB)	300mm
475	CPP EMERGENCY BYP BIN CNTRL VV	50mm
476	CPP BYPASS MOD CNTRL V/V	300mm
477	CPP RESIN MIXING AIR PRESS REG V/V	50mm
478	CPP DIRTY RESIN TRN FIL LINE VENT VLV	50mm
479	CPP DIRTY RESIN TRN WTR SEC LINE VENT VLV	50mm
480	CPP REFILL LINE VENT VLV	50mm
481	CPP DIRTY RESIN TRNS WTR SEC LINE VENT VLV	50mm
482	CONDENSATE POLISHER A OUTLET RESIN TRAP	300mm
483	CONDENSATE POLISHER B OUTLET RESIN TRAP	300mm
484	CONDENSATE POLISHER C OUTLET RESIN TRAP	300mm
485	BFPT EXTRACTION PUMP SUC STRAINER A	300mm
486	BFPT EXTRACTION PUMPS SUC STRAINER B	300mm
487	BFPT SAE AIR VALVES	200mm
488	BFPT SAE AIR VALVES	200mm
489	BFPT SAE AIR VALVES	200mm
490	BFPT SAE AIR VALVES	200mm
491	BFPT CONDENSER LEVEL CONTROL VALVE	250mm
492	BFPT VACUUM BREAKER I/V	80mm
493	BFPT CDV SPRAY VALVE	50mm
494	BFPT CONDENSER LEVEL CONTROL VALVE	250mm
495	BFPT EP A DISCH NRV	100mm
496	BFPT EP B DISCH NRV	100mm
497	BFPT EP A SUC IV	200mm
498	BFPT EP B SUC IV	200mm

499	BFPT EP A DISCH IV	150mm
500	BFPT EP B DISCH IV	150mm
501	BFPT EP A RECIRC IV	50mm
502	BFPT EP B RECIRC IV	50mm
503	BFPT COND CTRL ARGV IV	25mm
504	BFPT COND DRN/DTR IV	25mm
505	BFPT COND CTRL ARGV FLG IV	25mm
506	MC/BFPT INTERCONNECTOR	300mm
507	BFPT CONDENSER	300mm
508	BURSTING DISCS	100mm
509	BFPT PIPE DRN STM TRAP	100mm
510	BFPT PIPE DRN STM TRAP	100mm
511	OIL COOLERS CW INLET AND OUTLET ISOLATING VALVES	150mm
512	OIL COOLERS CW INLET AND OUTLET ISOLATING VALVES	150mm
513	OIL COOLERS CW INLET AND OUTLET ISOLATING VALVES	150mm
514	OIL COOLERS CW INLET AND OUTLET ISOLATING VALVES	150mm
515	EFP A LEAK OFF NRV	80mm
516	EFP B LEAK OFF NRV	80mm
517	SFP LEAK OFF NRV	80mm
518	BFPT BOOSTER P/P COOLING INLET I/V (25 mm)	25mm
519	BFPT BOOSTER P/P COOLING OUTLET I/V (25 mm)	25mm
520	BFPT A BOOSTER P/P COOLING INLET I/V (25 mm)	25mm
521	BFPT BOOSTER P/P COOLING OUTLET I/V (25 mm)	25mm

522	EFP B BOOSTER P/P COOLING INLET I/V (25 mm)	25mm
523	EFP B BOOSTER P/P COOLING OUTLET I/V (25 mm)	25mm
524	EFP A LEAK OFF CONTROL VALVE (100 mm)	100mm
525	EFP B LEAK OFF CONTROL VALVE (100 mm)	100mm
526	EFP A BALANCE LINE IV (100 mm)	100mm
527	EFP B BALANCE LINE IV (100 mm)	100mm
528	SFP BALANCE LINE IV (100 mm)	100mm
529	EFP A ATT. SPRAYWATER HIV (65 mm)	65mm
530	EFP B ATT. SPRAYWATER HIV (65 mm)	65mm
531	SFP ATT. SPRAYWATER HIV (80 mm)	80mm
532	SFP LEAK OFF VALVE (130 mm)	130mm
533	EFP A SUC DRN / EV V (100 mm)	100mm
534	EFP A SUC DRN / DTR V	25mm
535	EFP A SUC DRN IV (100 mm)	100mm
536	EFP A SUC DRN / DTR IV (25 mm)	25mm
537	EFP B SUC DRN / EV V (100 mm)	100mm
538	EFP B SUC DRN / DTR V (100 mm)	100mm
539	EFP B SUC DRN IV (100 mm)	100mm
540	EFP B SUC DRN / DTR IV (25 mm)	25mm
541	SFP SUC DRN / EV V (100 mm)	100mm
542	SFP SUC DRN / DTR V (100 mm)	100mm
543	SFP SUC DRN IV (100 mm)	100mm
544	SFP SUC DRN / DTR IV (25 mm)	25mm
545	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
546	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
547	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
548	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm

549	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
550	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
551	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
552	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
553	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
554	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
555	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
556	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
557	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
558	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
559	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
560	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
561	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
562	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
563	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
564	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
565	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
566	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
567	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
568	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
569	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
570	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm

571	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
572	EFP A SUCTION VALVE (400 mm)	400mm
573	EFP B SUCTION VALVE (400 mm)	400mm
574	SFP SUCTION VALVE (500 mm)	500mm
575	MAIN FEED REG VALVE (400 mm)	400mm
576	MAIN FEED REG VALVE BYPASS (40 mm)	50mm
577	FEED REG CONTROL VALVE A (250 mm)	250mm
578	FEED REG CONTROL VALVE B (250 mm)	250mm
579	FEED REG MOTOR ISOLATING V/V A (250 mm)	250mm
580	FEED REG MOTOR ISOLATING V/V B (250 mm)	250mm
581	FEED REG MOTOR ISOLATING V/V A BYPASS (25mm)	25mm
582	FEED REG MOTOR ISOLATING V/V B BYPASS (25mm)	25mm
583	FEED REG HAND ISOLATING V/V A (250 mm)	250 mm
584	FEED REG HAND ISOLATING V/V B (250 mm)	250 mm
585	FEED REG HAND ISOLATING V/V A BYPASS (25mm)	25mm
586	FEED REG HAND ISOLATING V/V B BYPASS (25 mm)	25 mm
587	SEAL WATER ISO V/V 'A' (SUCTION) (125mm)	125mm
588	SEAL WATER ISO V/V 'B' (SUCTION) (125mm)	125mm
589	SEAL WATER ISO V/V 'A' (DISCH) (80mm)	80mm
590	SEAL WATER ISO V/V 'B' (DISCH) - (80mm)	80mm
591	SEAL WATER ISO V/V 100% BFP (50mm)	50mm
592	SEAL WATER ISO V/V 100% BFP (50mm)	50mm
593	SEAL WATER BYP ISO V/V 100% BFP (50mm)	50mm
594	SEAL WATER ISO V/V 100% EFP A (40 mm)	40mm
595	SEAL WATER ISO V/V 100% EFP A (40 mm)	40mm
596	SEAL WATER BYP ISO V/V 100% EFP (40 mm)	40mm
597	SEAL WATER ISO V/V 100% EFP B (40 mm)	40mm
598	SEAL WATER ISO V/V 100% EFP B (40 mm)	40mm

599	SEAL WATER BYP ISO V/V 100% EFP (40 mm)	40mm
600	GLAND DRAIN ISO V/V 'A' (SUCTION) - (80mm)	80mm
601	GLAND DRAIN ISO V/V 'B' (SUCTION) - (80mm)	80mm
602	GLAND DRAIN ISO V/V 'A' (DISCH) - (80mm)	80mm
603	GLAND DRAIN ISO V/V 'B' (DISCH) - (80mm)	80mm
605	SEAL WATER NON RETURN 'A' - (80mm)	80mm
606	SEAL WATER NON RETURN 'B' - (80mm)	80mm
607	GLAND DRAIN NON RETURN V/V 'A' - (80mm)	80mm
608	GLAND DRAIN NON RETURN V/V 'B' - (80mm)	80mm
609	SEAL WATER CNTRL V/V ON EFP A	80mm
610	SEAL WATER CNTRL V/V ON EFP B	80mm
611	SEAL WATER CNTRL V/V ON SFP	80mm
612	BLR AUX COOLING RETURN STRAINER MAIN	300mm
613	BLR AUX COOLING RETURN STRAINER STANDBY	250mm
614	BLR AUX COOLING TANK SUPPLY STRAINER	250mm
615	BLR AUX COOLING RETURN CONTROL V/V (150MM)	150mm
616	BLR AUX COOLING RETURN IV 1 (150MM)	150mm
617	BLR AUX COOLING RETURN IV 2 (150MM)	150mm
618	BLR AUX COOLING SUP IV 1	150mm
619	BLR AUX COOLING SUP IV 2 (150MM)	150mm
620	BLR AUX COOLING RETURN BYPASS V/V (150MM)	150mm
621	BLR AUX COOLING SUP BYPASS V/V (150NB)	150mm
622	BLR AUX COOLING RETURN BYPASS V/V (50MM)	50mm
623	BLR AUX CLG H/EXCH MAIN CW SUP IV (300MM)	300mm
624	BLR AUX CLG H/EXCH CW IV (300MM)	300mm
625	Blr Aux Clg H/EXCH A CW Supply IV (8")	200mm
626	Blr Aux Clg H/EXCH Supply IV (8")	200mm

627	BLR AUX CLG H/EXCH A CW RTN IV (250MM)	250mm
628	BLR AUX CLG H/EXCH B CW RTN IV (250MM)	250mm
629	Blr Aux Clg Wtr Heat A Outlet IV (8")	200mm
630	Blr Aux Clg Wtr Heat Exchanger A INL IV (8")	200mm
631	Blr Aux Clg Wtr Heat Exchanger B INL IV (8")	200mm
632	Blr Aux Clg Wtr Heat Exchanger B OUTL IV (8")	200mm
633	Blr Aux Clg Clg Rtn IV (10")	250mm
634	Blr Aux Clg Clg Rtn IV (10")	250mm
635	Blr Aux Clg Clg Rtn Byp IV (10")	250mm
636	Blr Aux Clg Clg Rtn Byp IV (10")	250mm
637	DEMIN WATER MAKE-UP TANK	400mm
638	COLD REHEAT SUPPLY IV	200mm
639	AUX STEAM SUPPLY NRV	200mm
640	AUX STEAM SUPPLY IV	200mm
641	AUX STEAM MANIFOLD DRN TRAP BYPASS V/V	25mm
642	AUX STEAM MANIFOLD DRN STEAM	50mm
643	AUX STEAM MANIFOLD DRAIN TRAP INLET IV	50mm
644	AUX STEAM MANIFOLD DRN TRAP OUTLET IV	50mm
645	HP/IP SUPPLY VLV	50mm
646	HP/IP DUMP VLV	300mm
647	HP/IP DUMP DESUPERHEATER SPRY WATER VLV	50mm
648	LP SUPPLY VALVE	50mm
649	LP DESUPERHEATER SPRAY WATER VLV	50mm
650	HP STEAM CHEST LH UPR DRN MARTYR IV	50mm
651	HP LWR LOOP PIPE DRAIN MARTYR ISOL V/V	50mm
652	HP CYL LH COLD REHEAT DRAIN MARTYR ISOL V/V	50mm

653	HP CYL RH COLD REHEAT DRAIN MARTYR ISOL V/V	50mm
654	IP STEAM CHEST LH UPR DRAIN MASTER ISOL V/V	50mm
655	IP STEAM CHEST RH UPR DRAIN MASTER ISOL V/V	50mm
656	IP LOWER LOOP PIPE DRAIN MARTYR ISOL V/V	50mm
657	LH COLD REHEAT EMERGENCY DRAIN NOZZLE TRAP ISOL V/V	50mm
658	GESTRA DRAIN FROM LH COLD REHEAT ISOL V/V	50mm
659	LH COLD REHEAT EMERGENCY DRAIN NOZZLE TRAP ISOL V/V	50mm
660	GESTRA DRAIN FROM RH COLD REHEAT ISOL V/V	50mm
661	GESTRA DRAIN FROM RH COLD REHEAT ISOL V/V	50mm
662	GESTRA DRAIN FROM LH COLD REHEAT ISOL V/V	50mm
663	LP HOOD SPRAY DUPLEX STRAINER	100mm
664	OVERHAUL LP TURBINE SPRAY SUPPLY ISOL V/V	100mm
665	OVERHAUL LP TURBINE EXHAUSTER SPRAY COOLING NOZZLE	25mm
666	OVERHAUL LP TURBINE SPRAY SUPPLY NON RETURN V/V	100mm
667	OVERHAUL LP TURBINE SPRAY PRESS SUSTAINING V/V	25mm
668	OVERHAUL LP TURBINE SPRAY CONTROL V/V	100mm
669	OVERHAUL LP TURBINE SPRAY CONTROL OUTLET ISOL V/V	100mm
670	OVERHAUL LP TURBINE SPRAY CONTROL BYPASS V/V	100mm
671	OVERHAUL DC EMERG SPRW P/P SUCT ISOL V/V	100mm
672	OVERHAUL DC EMERG SPRW P/P DISCHARGE ISOL V/V	100mm
673	OVERHAUL DC EMERGENCY SPRAY WATER PUMP DISCHARGE NON RETURN V/V	100mm
674	OVERHAUL LP EXHAUST SPRW FILTER DIFF PRESS IND ISOL V/V	25mm
675	OVERHAUL DC EMERG SWTR P/P DRAIN ISOL V/V	25mm
676	OVERHAUL CONDENSATE EXTRACTION P/P PRESS SW ISOL V/V	25mm
677	OVERHAUL CONDENSATE EXTRACTION P/P PRESS SW ISOL V/V	25mm

678	OVERHAUL LP EXHAUST SPRAY WTR SUPPLY STRAINER DIFF PRESS IND	100mm
679	OVERHAUL DUPLEX STRAINER VENT ISOL V/V	25mm
680	OVERHAUL LP SPRAY COOLING WTR FLOW IND	25mm
681	OVERHAUL DUPLEX STRAINER DRAIN ISOL V/V	25mm
682	OVERHAUL DUPLEX STRAINER VENT ISOL V/V	25mm
683	OVERHAUL LP TURB SPRAY INLET ISOL V/V	25mm
684	OVERHAUL DUPLEX STRAINER DRAIN ISOL V/V	25mm
685	OVERHAUL EMRG SWTR SUPPLY P/P DISCHARGE PRESS SW ISOL V/V	25mm
686	OVERHAUL LP EXHAUST SPRW FILTER DIFF PRESS IND ISOL V/V	25mm
687	OVERHAUL LP TURBINE SPRAY SUPPLY DRAIN ISOL V/V	25mm
688	OVERHAUL LP TURBINE SPRAY SUPPLY DRAIN ISOL V/V	25mm
689	OVERHAUL DC EMRG SPRW SUPPLY P/P DISCHARGE PRESS SW ISOL V/V	25mm
690	OVERHAUL CONDENSATE EXTRACTION P/P OUTLET PRESS SWITCH ISOL V/V	25mm
691	OVERHAUL DC EMRG SPRW SUPPLY P/P DISCHARGE PRESS SW ISOL V/V	25mm
692	LP DEMIN RANGE TO RFWT INLET V/V	300mm
693	LP HTR 3 CTRL ARGV VENT V/V	25mm
694	EFP A ATT SPRAYWATER NRV	80mm
695	EFP B ATT SPRAYWATER NRV	80mm
696	SFP REHEAT SPRAYWATER NRV	80mm
697	BLR AUX COOLING SUP CONTROL V/V (150MM)	150mm
698	BLR AUX COOLING SUP DRAIN CONTROL V/V (50MM)	50mm
699	BLR AUX COOLING SUP DRAIN V/V (50MM)	50mm
700	CPP RINSE WTR DRAIN BIN CTRL V/V	100mm
701	U4 CPP CLN RES TRF INLET BIN CTRL V/V	100mm
702	CLEAN RES TRF TO U5 TO 6 BIN CTRL V/V	100mm

703	DIRTY RES TRF FROM U5 TO 6 BIN CTRL V/V	100mm
704	U4 CPP DTY RES TRF OUTL BIN CTRL V/V	100mm
705	U4 CPP DTY RES TRF LINES FLUSH WTR CTRLV/V	100mm
706	U4 CPP CLN RESTRF LINES FLUSH WTR CTRLV/V	100mm
707	CPP MIXING AIR & DTY RESTRF CTRL V/V	100mm
708	CPP DTY RES TRF WTR SUPL BIN CTRL V/V	100mm
709	CPP MIXING & DTY RESTRF AIR SUPL CTRLV/V	100mm
710	CPP CLN RESTRF WTR TO RECOV WTR CTRLV/V	100mm
711	CPP DIRTY RES TRF LINE FIL BIN CTRL V/V	100mm
712	CLN RES TRF WTR TO WASTE BIN CTRL V/V	100mm
713	CPP REFILL BIN CONTROL V/V	100mm
714	CONDS POLISHER 4 A INL MOD CTRL V/V (replace)	50mm
715	CONDS POLISHER 4 A CLN RESIN CTRL V/V	50mm
716	CONDS POLISHER 4 A DTY RES OUTL CTRL V/V	50mm
717	CONDS POLISHER 4 A SEC RES TRF CTRL V/V	50mm
718	CONDS POLISHER 4 A OUTL MOD CONTROL V/V (replace	50mm
719	CONDS POLISHER 4 B INL MOD CTRL V/V (replace)	50mm
720	CONDS POLISHER 4 B CLN RESIN CTRL V/V	50mm
721	CONDS POLISHER 4 B DTY RES OUTL CTRL V/V	50mm
722	CONDS POLISHER 4 B SEC RES TRF CTRL V/V	50mm
723	CONDS POLISHER 4 B OUTL MOD CONTROL V/V (replace	50mm
724	CONDS POLISHER 4 C INL MOD CTRL V/V (replace)	50mm
725	CONDS POLISHER 4 C CLN RESIN CTRL V/V	50mm
726	CONDS POLISHER 4 C DTY RES OUTL CTRL V/V	50mm
727	CONDS POLISHER 4 C SEC RES TRF CTRL V/V	50mm
728	CONDS POLISHER 4 C OUTL MOD CONTROL V/V (replac	50mm

729	CLEAN RES TRF WTR OUTL LINE VENT V/V	50mm
730	CPP DIRTY RES TRF WTR SUPPLY LINE VNT V/V	50mm
731	CPP MIXNG AIR RES TRF SUPL LINE DRN V/V	50mm
732	CPP INLET SAMPLING LINE SECONDARY COOLER	50mm
733	CPP INL SMPLN LINE LP CAPLRY SMPLR CLR	50mm
734	CPP A SAMPLING LINE SECONDARY COOLER	50mm
735	CPP A SMPLN LINE LP CAPILLARY SMPLR CLR	50mm
736	CPP B SAMPLING LINE SECONDARY COOLER	50mm
737	CPP B SMPLN LINE LP CAPILLARY SMPLR CLR	50mm
738	CPP C SAMPLING LINE SECONDARY COOLER	50mm
739	CPP C SMPLN LINE LP CAPILLARY SMPLR CLR	50mm
740	CPP OUTL SAMPLING LINE SECONDARY COOLER	50mm
741	CPP OUTL SMPLN LINE LP CAPLRY SMPLR CLR	50mm
742	HOT COND SAMPLING LINE SECONDARY COOLER	50mm
743	CIRC WTR SMPLN LINE DISTRIBUTION MFLD	50mm
744	CIRC WTR SMPLN LINE DISTRIBUTION MFLD	50mm
745	CPP INL SMPLN LINE DISTRIBUTION MFLD	50mm
746	CPP OUTL SMPLN LINE DISTRIBUTION MFLD	50mm
747	HOT COND SMPLN LINE DISTRIBUTION MFLD	50mm
748	HP HTR 5B FW OUTL PP IV	25mm
749	HP HTR 5B FW INL DRN IV	25mm
750	HP HTR 5B FW INL DRN/DTR IV	25mm
751	HP HTR 6B FW OUTL DRN/DTR IV	25mm
752	HP HTR 6B FW OUTL DRN/DTR IV	25mm
753	HP HTR 5B FW INL DRN/EV IV	25mm
754	HP HTR 6B FW OUTL P/P IV	25mm

755	HP HTR 5B EMERGENCY DRN LINE DRN/EV IV	25mm
756	BLR AUX CLG P/P A NRV	25mm
757	BLR AUX CLG P/P B NRV	25mm
758	BLR AUX CLG P/P C NRV	25mm

MATLA U1 IN TURBINE VALVES (72)		
QIP	TASK NAME	SIZE
MAIN CONDENSER		
1	CW DOORS (3 Off)	500mm
2	CW DOORS (3 Off)	500mm
3	MAIN CONDENSER	500mm
4	ATMOSPHERIC TANK	300mm
TAPROGGE SYSTEM		
5	TAPROGGE SCREEN _ LOWER	80mm
6	TAPROGGE SCREEN _ UPPER	80mm
7	T2 SUCTION VALVES	80mm
8	T2 SUCTION VALVES	80mm
9	T2 SUCTION VALVES	80mm
10	T2 SUCTION VALVES	80mm
11	T2 SUCTION VALVES	80mm
12	T2 SUCTION VALVES	80mm
13	T2 SUCTION VALVES	80mm
14	T2 SUCTION VALVES	80mm
15	TAPROGGE ACCUMULATOR INL IV	100mm
16	TAPROGGE ACCUMULATOR OUTL IV	100mm
LP HEATER 3		
17	LPH 3 DRN PMP SUC STRAINER	300mm
18	LPH 3 DRN PMP SUC STRAINER	300mm

CONDENSATE EXTRACTION PUMP (CEP)&DA		
19	CLC(STROKE CHECK AND LEAK TEST TO BE WITNESS BY ENGINEER)	300mm
20	DLC	300mm
HP HEATERS		
21	HP HTR 5A (STEAM SIDE)	300mm
22	HP HTR 6A (STEAM SIDE)	300mm
23	HP HTR 5B (STEAM SIDE)	300mm
24	HP HTR 6B (STEAM SIDE)	300mm
CONDENSATE EXTRACTION PUMPS		
25	EXT P/P A 1ST STAGE DISCH NRV	400mm
26	EXT P/P B 1ST STAGE DISCH NRV	400mm
27	EXT P\ P 2ND STAGE DISCH NRV	400mm
28	EXT P\ P 2ND STAGE DISCH NRV	400mm
GSC AND DRAINS TANK (Non Valve)		
29	GLAND STEAM CONDENSER	800mm
30	DRAIN TANK	800mm
31	GSC DRAIN TANK DRN TO COND V\ V	25mm
SECONDARY CW SYSTEM (SCW)		
32	SEC CW (GEN)P\ P B DISCH IV	400mm
33	SEC CW (GEN) EXCESS RETURN V	400mm
34	SEC CW (GEN) EXCESS RETURN V IV	400mm
35	SEC CW (GEN) P/P A DISCH NRV	400mm
36	SEC CW (GEN) P/P A DISCH IV	400mm
37	SEC CW (GEN) P/P B DISCH NRV	400mm
38	SEC CW (GEN)P\ P B DISCH IV	400mm
BFPT SAE AIR VALVES		
39	BFPT SAE ISOLATING VALVE A	300mm
40	BFPT SAE AIR VALVES	300mm

41	BFPT SAE AIR VALVES	300mm
42	BFPT SAE AIR VALVES	300mm
43	MC/BFPT INTERCONNECTOR	300mm
44	BFPT CONDENSER LEVEL CONTROL VALVE	200mm
45	BFPT VACUUM BREAKER I/V	100mm
46	BFPT CDV SPRAY VALVE	50mm
47	BFPT CONDENSER LEVEL CONTROL VALVE	200mm
48	BFPT CONDENSER	400mm
SCW (EJECTOR SYSTEM)		
49	WAE A1 CW Inlet CTRL vlv	300mm
50	WAE B1 CW Inlet CTRL vlv	300mm
51	WAE B2 WTR INLET VALVE	300mm
52	WAE A2 CW Inlet CTRL vlv	300mm
53	WAE B2 CW Inlet CTRL vlv	300mm
54	WAE A1 CW INLET STRAINER	300mm
55	WAE B1 CW INLET STRAINER	300mm
56	WAE A2 CW INLET STRAINER	300mm
57	WAE B2 CW INLET STRAINER	300mm
58	WAE A1 SUCTION CNTRL V/V	250mm
59	WAE A2 SUCTION CONTROL V/V	250mm
60	WAE B1 SUCTION CONTROL V/V	250mm
61	WAE B2 SUCTION CNTRL V/V	250mm
62	WAE A2 Bellow (2 off)	250mm
63	WAE A1 Bellow (2 off)	250mm
64	WAE B1 Bellow (2 off)	250mm
65	WAE B2 Bellow (2 off)	250mm
66	SEC CW (GEN) EXCESS RETURN VALVE	400mm
67	SEC CW (GEN) EXCESS RETURN ISOLATING VALVE	400mm

GLAND STEAM SYSTEM		
68	HP/IP DUMP VALVE	300mm
LP SPRAY COOLING SYSTEM		
69	LP SPRAY COOLING DUPLEX STRAINER	100mm
70	HP HTR 6A EMERG DRN/HOT COND CNTRL VALVE	300mm
71	HP HTR 6B EMERG DRN/HOT COND CNTRL VALVE	300mm
72	HP HTR 5B DRN TO DST CNTRL VALVE	300mm

Matla Boiler Valves GO/MGO/IR (269)		
QIP	TOTAL VALVES	SIZE
	BOILER PRESSURE PARTS : SOOTBLOWER VALVE STATION	
1	S/H HAND ISOLATING VLV	200mm
2	R/H HAND ISOLATING VLV	200mm
3	R/H NRV	200mm
4	S/H MOT STOP VLV	50mm
5	R/H MOT STOP VLV	50mm
6	S/H STRAINER	200mm
7	R/H STRAINER	200mm
8	S/H REG VLV _cut out	200mm
9	S/H REG VLV _cut out	200mm
10	S/H BALANCE LINE VLV _cut out	25mm
11	R/H BALANCE LINE V/V _cut out	25mm
	SOOTBLOWER SECTION VALVE	
12	S/BLWR LHB MOT	150mm
13	S/BLWR LHB MOT	150mm

14	S/BLWR LHB MOT	150mm
15	S/BLWR LHB MOT	150mm
16	S/BLWR RHT MOT	150mm
17	A/H S/BLWR MOT	150mm
18	A/H S/BLWR MOT	150mm
19	A/H S/BLWR MOT	150mm
20	A/H S/BLWR MOT	150mm
	SOOTBLOWER DRAIN LINES	
21	S/BLWR LHB DRAIN	50mm
22	S/BLWR LHT DRAIN	50mm
23	S/BLWR RHB DRAIN	50mm
24	S/BLWR RHT DRAIN	50mm
25	S/BLWR LHB DRAIN	50mm
26	S/BLWR LHB DRAIN	50mm
27	S/BLWR S/H DRAIN	50mm
28	S/BLWR S/H DRAIN	50mm
	LP BYPASS VALVE SYSTEM	
29	LP BYPASS SW ISOL VV(150MM PEGLER & LOUDEN)	150mm
30	LP BYPASS WARNING DRN VALVE RH	50mm
31	LP BYPASS WARNING DRN VALVE LH	50mm
32	LP BYPASS WARNING LINE ISOL VALVE	50mm
33	LP BYPASS LH DRAIN TO CONDENSOR MASTER ISOL V/V	50mm
34	LP BYPASS LH DRAIN TO CONDENSOR MARTYR ISOL V/V	50mm
35	LP BYPASS RH ISOL V/V BYPASS WARNING LINE ISOL V/V	50mm

36	LP BYPASS RH DRAIN TO CONDENSOR MASTER ISOL V/V	50mm
	CIRCULATING VALVES SYSTEM	
37	CIRC P/P SUCTION MOT V/V	400mm
38	CIRC P/P SUCTION MOT V/V BYPASS(32MM VKS1 SEMPELL)	50mm
39	CIRC P/P "A" OUTLET REG MOT VALVE(250MM W&T)	250mm
40	CIRC P/P "B" OUTLET REG MOT V/V(250MM W&T)	250mm
41	CIRC P/P DISCHARGE MOT V/V	350mm
42	CIRC P/P DISCHARGE MOT V/V BYPASS(32mm sempell)	50mm
43	CIRC PMP A NON RET (250MM SEMPELL)	250mm
44	CIRC PMP B NON RET (250MM SEMPELL)	250mm
45	CIRC PMP STRAINER	400mm
46	CIRC PMP LEAK OFF(125MM SEMPELL GS2)	125mm
47	CIRC PMP LEAK OFF NRV (80MM SEMPELL)	80mm
48	CIRC PMP B LEAK OFF NRV	80mm
	AUXILIARY STEAM RANGE SYSTEM	
49	CR MAIN ISOLATIN MOT VALVE	250mm
50	AUX STM REG V/V SEMPELL (200MM) 2off Motaflex	200mm
51	AUX ISOLATING VALVE (350MM SEMPELL)	350mm
52	STM TRAP ISOL VALVE	25mm
53	AUX STM TRAP BYPASS MOT VALVE (25MM SEMPELL)	25mm
54	STM TRAP ISOL VALVE	25mm
55	STM TRAP ISOL VALVE	25mm
56	STM TRAP	25mm
57	AUX STM NRV	200mm

58	AUX STM MAIN MOT ISOL VALVE (250MM SEMPELL)	250mm
59	AUX BTR COMMON ISOL VALVE (15MM SEMELL)	15mm
60	AUX STM TRAP BYPASS MOT VALVE (25MM SEMPELL)	25mm
61	STM TRAP	25mm
62	STM TRAP ISOL VALVE	25mm
	BOILER WARMING SYSTEM	
63	BLR WARM UP	200mm
64	BLR WARM UP	200mm
65	BLR WARM UP NRV	150mm
	MAIN STEAM SYSTEM	
66	ISOLATING VALVE	25mm
67	ISOLATING VALVE	25mm
68	ISOLATING VALVE	25mm
	COLLECTING VESSEL DRAIN AND BLOWDOWN SYSTEM	
69	BLOW DOWN VESSEL REG MOT ISOL "A" (200MM SEMPELL)	200mm
70	BLOW DOWN REG ISOL MOT VALVE "A" BYPASS(25MM SEMPELL VKS 1)	25mm
71	BLOW DOWN VESSEL REG ISOL V "B"(200 SEMPELL GS 2)	200mm
72	BLOW DOWN REG ISOL MOT VALVE "B" BYPASS (25MM SEMPELL)	25mm
	57ML BOILER RHS VENT STATION	
73	ECON INLET VENT	50mm
74	ECON INLET VENT	50mm
75	DIV WALL OUTLET VENT	50mm
76	DIV WALL OUTLET VENT I/V	50mm
77	EVAP OUTLET VENT	50mm

78	EVAP OUTLET VENT I/V	50mm
79	SH 1 LHS VENT	50mm
80	SH 1 LHS VENT AND ISOLATION	50mm
81	SH 1 RHS VENT AND ISOL	50mm
82	SH 1 RHS VENT V/V	50mm
83	SH 2 INLET 1 AND 2 VENT	50mm
84	SH2 INLET 3 AND 4 VENT	50mm
85	SH 2 INLET 1 AND 2 VENT AND ISOLATION	50mm
86	SH 2 INLET 3 AND 4 VENT AND ISOLATION	50mm
87	SH ATT 3.1 AND 3.2 VENT	50mm
88	SH ATT 3.3 AND 3.4 VENT	50mm
89	SH ATT 3.1 AND 3.2 VENT AND ISOLATION	50mm
90	SH ATT 3.3 AND 3.4 VENT AND ISOLATION	50mm
91	SH 4 OUTLET HEADER 1 VENT	50mm
92	SH 4 OUTLET HEADER 2 VENT	50mm
93	SH 4 OUTLET HEADER 1 VENT AND ISOLATION	50mm
94	SH 4 OUTLET HEADER 2 VENT AND ISOLATION	50mm
95	RH 1 INLET LHS VENT	50mm
96	RH 1 INLET RHS VENT	50mm
97	RH 1 INLET LHS VENT AND ISOLATION	50mm
98	RH 1 INLET RHS VENT AND ISOLATION	50mm
	16 ML BOILER RHS DRAIN STATION	
99	S/H 1.1 OUTLET HDR DRAIN VV	50mm
100	S/H 1.1 OUTLET HDR DRAIN ISOL VV	50mm

101	S/H 1.2 OUTLET HDR DRAIN VV	50mm
102	S/H 1.2 OUTLET HDR DRAIN ISOL VV	50mm
103	S/H ATT 2.1 + 2 DRAIN VV	50mm
104	S/H ATT 2.1 + 2 DRAIN ISOL VV	50mm
105	S/H ATT 2.3 + 4 DRAIN VV	50mm
106	S/H ATT 2.3 + 4 DRAIN ISOL VV	50mm
107	S/H 3.1 INL HDR DRAIN VV	50mm
108	S/H 3.1 INL HDR DRAIN ISOL VV	50mm
109	S/H 3.2 INL HDR DRAIN VV	50mm
110	S/H ATT 3.1 + 2 DRN V/V	50mm
111	S/H ATT 3.1 + 2 DRN ISOL V/V	50mm
112	S/H ATT 3.3 + 4 DRN V/V	50mm
113	S/H ATT 3.3 + 4 DRN ISOL V/V	50mm
114	RH OUT HDR 1 DRAIN ISOL VV	50mm
115	RH OUT HDR 2 DRAIN ISOL VV	50mm
116	RH OUT HDR 1 DRAIN VV	50mm
117	RH 2 OUT HDR 2 DRAIN VV	50mm
118	SH COLLECTION DRAIN VV	50mm
119	SH COLL ISOL AND DRAIN V/V	50mm
120	RH COLLECTION DRAIN	50mm
	2 ML BOILER FRONT DRAIN STATION	
121	HP BYPASS SPR WATER DRAIN V/V	50mm
122	HP BYPASS SPR WATER DRAIN I/V	50mm
123	EVAP COIL DRN ISOL V/V	50mm

124	EVAP COIL DRN ISOL V/V	50mm
125	FEEDWATER DRAIN HIV(25MM VKS1)	50mm
126	FEEDWATER DRAIN ISOL HIV	50mm
127	DIV WALL DRAIN V/V	50mm
128	DIV WALL DRAIN I/V	50mm
129	F.INLET HELICAL EVAP DRAIN V/V LH	50mm
130	F.INLET HELICAL EVAP DRAIN V/V LH	50mm
131	F.INLET HELICAL EVAP DRAIN V/V RH	50mm
132	R.INLET HELICAL EVAP DRAIN V/V LH	50mm
133	R.INLET HELICAL EVAP DRAIN ISOL V/VLH	50mm
134	R.INLET HELICAL EVAP DRAIN V/V RH	50mm
135	R.INLET HELICAL EVAP DRAIN ISOL V/V RH	50mm
136	UPPER EVAP INLET DRAIN V/V LH	50mm
137	UPPER EVAP INLET DRAIN I/V LH	50mm
138	UPPER EVAP INLET DRAIN VV RH(25MM SEMPELL VKS1)	50mm
139	UPPER EVAP INLET DRAIN ISOL VV RH(25MM SEMPELL VKS1)	50mm
140	CIRC PUMP A DRAIN V/V	50mm
141	CIRC PUMP A DRAIN V/V	50mm
142	CIRC PUMP B DRAIN V/V	50mm
	BLOWDOWN VESSEL MANIFOLD DRAIN STATION	
143	CR LEG DRAIN 1 NRV	50mm
144	CR LEG DRAIN 1 ISOL VALVE	50mm
145	CR LEG DRAIN 2 NRV	50mm
146	CR LEG DRAIN 2 ISOL VALVE	50mm

147	HR LEG DRAIN 2 ISOL VV	50mm
148	HR TURB LEG 1 DRAIN NRV	50mm
149	HR TURB LEG 2 DRAIN NRV	50mm
150	HR TURB LEG 3 DRAIN NRV	50mm
151	HR TURB LEG 4 DRAIN NRV	50mm
152	HR LRG DRAIN 1 ISOL VV	50mm
153	LP BYPASS 1 AND 2 DRAIN NRV	50mm
154	LP BYPASS 1 AND 2 DRAIN ISOL VALVE	50mm
155	HR/LP BYPASS 1 AND 2 WARMING NRV	50mm
156	HR AND LP BYPASS WARM ISOL VV	50mm
157	HR/LP BYPASS 3 AND 4 WARMING NRV	50mm
158	LP BYPASS 3 AND 4 WARMING NRV	50mm
159	LP BYPASS 3 AND 4 NRV	50mm
160	LP BYPASS 3 AND 4 DRAIN	50mm
161	HR LEG DRAIN 4 ISOL V/V	50mm
162	HR LEG DRAIN 4 ISOL V/V	50mm
163	MS TURB LEG 1 ISOL VALVE	50mm
164	MS LEG 2 DRAIN 1 NRV	50mm
165	MS TURB LEG 2 ISOL VALVE	50mm
166	MS LEG DRAIN 1 NRV	50mm
167	MS LEG 3 DRAIN NRV	50mm
168	MS TURB LEG 3 ISOL VALVE	50mm
169	MS LEG 4 NRV	50mm
170	MS TURB LEG 4 ISOL VALVE	50mm

171	MS TURB LEG WARM NRV	50mm
172	MS TURB LEG ISOL VALVE	50mm
173	LP BYPASS 1 AND 2 DRAIN MOT	50mm
174	LP BYPASS 3 AND 4 DRAIN MOT	50mm
175	GLND WARMING LINE ISOL V/V	50mm
176	MS TURB LEG WARM MOT ISOL VV	50mm
177	AUX STEAM NRV	50mm
178	R/H SAFETY V/V NRV	50mm
179	R/H VENT TUNDISH NRV	50mm
180	AUX RING DRAIN V/V	50mm
181	FEEDWATER NRV	50mm
182	RH ATT 1 RESIDUAL DRAIN	50mm
183	RH ATT 2 RESIDUAL DRAIN	50mm
184	RH ATT 3 RESIDUAL DRAIN	50mm
185	RH ATT 4 RESIDUAL DRAIN	50mm
186	RH ATT 1 RESIDUAL DRAIN AND ISOLATION	50mm
187	RH ATT 2 RESIDUAL DRAIN AND ISOLATION	50mm
188	RH ATT 3 RESIDUAL DRAIN AND ISOLATION	50mm
189	RH ATT 4 RESIDUAL DRAIN AND ISOLATION	50mm
190	RH FILLER	50mm
191	RH FILLER NON RET	50mm
192	HP BYPASS DRAIN VALVE	50mm
193	REHEATER INLET (SWEEPING / AIR ADMISSION VALVES)	50mm
	CIRCULATING SYSTEM	

194	CIRCULATING PUMP A	500mm
195	CIRCULATING PUMP B	500mm
	S/H SPRAYWATER VALVE SYSTEM	
196	S/H 1.1 SPRAY WTR ISOL MOT V/V A	150mm
197	S/H 1.1 SPRAY WTR ISOL MOT V/V B	150mm
198	S/H 1.1 SPRAY WTR ISOL V/V A	150mm
199	S/H 1.1 SPRAY WTR ISOL V/V B	150mm
200	S/H 1.2 SPRAY WTR ISOL MOT V/V A	150mm
201	S/H 1.2 SPRAY WTR ISOL MOT V/V B	150mm
202	S/H 1.2 SPRAY WTR ISOL V/V A	150mm
203	S/H 1.2 SPRAY WTR ISOL V/V B	150mm
204	S/H 2.1 SPRAY WTR ISOL MOT V/V A	150mm
205	S/H 2.1 SPRAYWATER ISOL MOT V/V B	150mm
206	S/H 2.1 SPRAYWATER ISOL V/V A	150mm
207	S/H 2.1 SPRAYWATER ISOL V/V B	150mm
208	S/H 2.2 SPRAYWATER ISOL MOT V/V A	150mm
209	S/H 2.2 SPRAYWATER ISOL MOT V/V B	150mm
210	S/H 2.2 SPRAYWATER ISOL V/V A	150mm
211	S/H 2.2 SPRAYWATER ISOL V/V B	150mm
212	S/H 2.3 SPRAYWATER ISOL MOT V/V A	150mm
213	S/H 2.3 SPRAYWATER ISOL MOT V/V B	150mm
214	S/H 2.3 SPRAYWATER ISOL V/V A	150mm
215	S/H 2.3 SPRAYWATER ISOL V/V B	150mm
216	S/H 2.4 SPRAY WTR ISOL MOT V/V A	150mm

217	S/H 2.4 SPRAYWATER ISOL MOT V/V B	150mm
218	S/H 2.4 SPRAY WTR ISOL MOT V/V A	150mm
219	S/H 2.4 SPRAY WTR ISOL MOT V/V B	150mm
220	S/H 3.1 SPRAYWATER ISOL MOT V/V A	150mm
221	S/H 3.1 SPRAYWATER ISOL MOT V/V B	150mm
222	S/H 3.1 SPRAYWATER ISOL V/V A	150mm
223	S/H 3.1 SPRAYWATER ISOL V/V B	150mm
224	S/H 3.2 SPRAYWATER ISOL MOT V/V A	150mm
225	S/H 3.2 SPRAYWATER ISOL MOT V/V B	150mm
226	S/H 3.2 SPRAYWATER ISOL V/V A	150mm
227	S/H 3.2 SPRAYWATER ISOL V/V B	150mm
228	S/H 3.3 SPRAYWATER ISOL MOT V/V A	150mm
229	S/H 3.3 SPRAYWATER ISOL MOT V/V B	150mm
230	S/H 3.3 SPRAYWATER ISOL V/V A	150mm
231	S/H 3.3 SPRAYWATER ISOL V/V B	150mm
232	S/H 3.4 SPRAYWATER ISOL MOT V/V A	150mm
233	S/H 3.4 SPRAYWATER ISOL MOT V/V B	150mm
234	S/H 3.4 SPRAYWATER ISOL V/V A	150mm
235	S/H 3.4 SPRAYWATER ISOL V/V B	150mm
	R/H SPRAYWATER VALVE SYSTEM	
236	R/H ATT 1 SPRAY WTR ISOL MOT V/V "A"	50mm
237	R/H ATT 1 SPRAY WTR ISOL MOT V/V "B"	50mm
238	R/H ATT 1 SPR WTR ISOL V/V "A"	50mm
239	R/H ATT 1 SPR WTR ISOL V/V "B"	50mm

240	R/H ATT 2 SPR WTR ISOL MOT V/V "A"	50mm
241	R/H ATT 2 SPR WTR ISOL MOT V/V "B"	50mm
242	R/H ATT 2 SPR WTR ISOL V/V "A"	50mm
243	R/H ATT 2 SPR WTR ISOL V/V "B"	50mm
244	R/H ATT 3 SPR WTR ISOL MOT V/V "A"	50mm
245	R/H ATT 3 SPR WTR ISOL MOT V/V "B"	50mm
246	R/H ATT 3 SPR WTR ISOL V/V "A"	50mm
247	R/H ATT 3 SPR WTR ISOL V/V "B"	50mm
248	R/H ATT 4 SPR WTR ISOL MOT V/V "A"	50mm
249	R/H ATT 4 SPR WTR ISOL MOT V/V "B"	50mm
250	R/H ATT 4 SPR WTR ISOL V/V "A"	50mm
251	R/H ATT 4 SPR WTR ISOL V/V "B"	50mm
	ADDITIONAL SCOPE	
252	HP BYPASS SW STOP VALVE	200mm
253	ISOLATING VALVE	25mm
254	ISOLATING VALVE	25mm
255	ISOLATING VALVE	25mm
256	ISOLATING VALVE	25mm
257	ISOLATING VALVE	25mm
258	HP BYPASS VALVE MONOSTAT ISOL VALVE 1	50mm
259	HP BYPASS VALVE MONOSTAT ISOL VALVE 2	50mm
260	HP BYPASS VALVE MONOSTAT ISOL VALVE 3	50mm
261	REHEAT SAFETY VALVE MONOSTAT ISOL VALVE 1	50mm
262	REHEAT SAFETY VALVE MONOSTAT ISOL VALVE 2	50mm

263	REHEAT SAFETY VALVE MONOSTAT ISOL VALVE 3	50mm
264	CIRC PUMP WARMING MASTER VALVE	25mm
265	CIRC PUMP WARMING MASTER CNTR VALVE	25mm
266	CIRC A WARMING NRV	25mm
267	CIRC B WARMING NRV	25mm
268	CIRC PUMP INJ ISOL	150mm
269	CIRC PUMP INJ MOT	50mm

Matla U1 IN Boiler Valves (21)		
QIP NO	Task Name	Size
1	MS LEG 1 MOT ISOL VV(50MM SEMPELL VKS1)	50mm
2	MS LEG 2 MOT ISOL VV(50MM SEMPELL VKS1)	50mm
3	MS LEG 3 MOT ISOL VV(50MM SEMPELL VKS1)	50mm
4	ME LEG 4 MOT ISOL VV(50MM SEMPELL VKS1)	50mm
5	HR LEG DRAIN 1 MOT ISOL VALVE(50MM SEMPELL VKS1)	50mm
6	HR LEG DRAIN 2 MOT ISOL VALVE(50MM SEMPELL VKS1)	50mm
7	HR LEG DRAIN 3 MOT ISOL VALVE(50MM SEMPELL VKS1)	50mm
8	HR LEG DRAIN 4 MOT ISOL VALVE(50MM SEMPELL VKS1)	50mm
9	TURB CR LEG DRN 1 MOT ISOL(50MM SEMPELL VKS1)	50mm
10	TURB CR LEG DRN 2 MOT ISOL(50MM SEMPELL VKS1)	50mm
CIRCULATING PUMPS		
11	CIRCULATING PUMP A	500mm
12	CIRCULATING PUMP B	500mm
AUX RANGE SYSTEM		

13	AUX STM REG V/V SEMPELL (200MM)	200mm
14	AUX STM MAIN MOT ISOL VALVE (250MM SEMPELL)	250mm
BLOWDOWN SYSTEM		
15	BLOW DOWN VESSEL REG 50% MOT VALVE A	25mm
16	BLOW DOWN VESSEL REG MOT ISOL "A" (200MM SEMPELL)	200mm
17	BLOW DOWN REG MOT ISOL "A" BYPASS (25MM SEMPELL)	25mm
18	BLOW DOWN REG MOT ISOL "B"	250mm
19	BLOW DOWN REG 50% MOT VALVE B	250mm
20	BLOW DOWN REG MOT ISOL "B" BYPASS	250mm
21	BLOW DOWN VESSEL MOT REG VALVE	250mm

Koeberg Power Station: Turbine Valves and Commissioning - strip, inspect, blue, box and stroke. Estimate scope below for a GO/MGO/IR (subject to change):

KOEBERG TURBINE VALVES GO/MGO/IR (758)		
QIP	MAIN CONDENSER	SIZE
1	CW DOORS (3 Off)	300mm
2	CW DOORS (3 Off)	300mm
3	MAIN CONDENSER	300mm
4	MAIN CONDENSER NECK	300mm
5	HOTWELL(2 OFF)	300mm
6	HOTWELL(2 OFF)	300mm
7	VACUUM BREAKER	300mm
8	HC DOG BONE FILLING IV	1"
9	CC DOG BONE FILLING IV	1"
10	NORMAL MU A HAND I/V	100mm
11	NORMAL MU B HAND I/V	100mm
12	DEMIN MAKE-UP B TO HOT COND	100mm

13	DEMIN MAKE-UP A TO HOT COND	100mm
14	DEMIN MAKE-UP EMERG TO COLD COND	300mm
15	CDV SPRAYWATER CONTR V	50mm
16	EXT P/P A 1ST STAGE DISCH NRV	300mm
17	EXT P/P B 1ST STAGE DISCH NRV	300mm
18	EXT P/P A 2ND STAGE DISCH NRV	300mm
19	EXT P/P B 2ND STAGE DISCH NRV	300mm
20	EXT P/P SUC LINE DRN V	150mm
21	EXT P/P 1ST STAGE RECIRC CNTR V	150mm
22	EXT P/P 1ST STAGE RECIRC DRN V	25mm
23	EXT P/P 1ST STAGE RECIRC VENT	25mm
24	EXT P/P 2ND STAGE RECIRC IV	300mm
25	EXT P/P 2ND STAGE RECIRC CNTR V	300mm
26	EXT P/P A 1ST STAGE SUCTION V/V	300mm
27	EXT P/P A 1ST STAGE SUC DRN V/V	300mm
28	EXT P/P B 1ST STAGE SUCTION V/V	300mm
29	EXT P/P B 1ST STAGE SUC DRN V/V	300mm
30	EXT P/P A 1ST STAGE DISCH I/V	300mm
31	EXT P/P A 1ST STAGE LEAK OFF TO CC IV	150mm
32	EXT P/P A 1ST STAGE STRAINER FILLING I/V	25mm
33	EXT P/P A 2ND STAGE DISCH ISOL BYP V	25mm
34	EXT P/P A 2ND STAGE DISCH IV	400mm
35	EXT P/P A 2ND STAGE SUCTION V	400mm
36	EXT P/P A 1ST STAGE DISCH STRAINER VENT V	25mm
37	EXT P/P A 1ST STAGE DRN V	25mm
38	EXT P/P A 1ST STAGE STRAINER DRN V	50mm
39	EXT P/P B 1ST STAGE DISCH IV	300mm

40	EXT P/P B 1ST STAGE LEAK OFF TO CC IV	150mm
41	EXT P/P B 2ND STAGE DISCH ISOL BYP V	300mm
42	EXT P/P B 2ND STAGE DISCH IV	300mm
43	EXT P/P B 2ND STAGE SUCTION V	300mm
44	EXT P/P B 1ST STAGE DISCH DRN V	300mm
45	EXT P/P B 1ST STAGE DISCH STRAINER VENT V	25mm
46	EXT P/P B 1ST STAGE STRAINER DRN V	25mm
47	CLC INLET I/V	400mm
48	CLC OUTL I/V	400mm
49	CLC BYPASS I/V	400mm
50	CLC(STROKE CHECK AND LEAK TEST TO BE WITNESS BY ENGINEER)	400mm
51	RFWT	300mm
52	EXT P/P STAGE 2 SUCTION TO RFWT V/V	300mm
53	GLAND STEAM CONDENSER	500mm
54	DRAIN TANK	500mm
55	GSC DRAIN TANK DRN TO COND V/V	50mm
56	GSC FAN A OUTLET CONTR V/V	250mm
57	GSC FAN A OUTLET V/V	250mm
58	GSC FAN B DRAIN DTR ISOL V/V	25mm
59	GSC FAN B OUTLET CONTR V/V	250mm
60	GSC FAN B OUTLET NRV	250mm
61	DRAIN COOLER	500mm
62	LP HEATER 1 & 2 (Condensate Side)	1.2m
63	LP HEATER 1 & 2 (Steam Side)	1.2m

64	LP HTR DRN COOLER INL IV BYP V	50mm
65	LP HTR DRN COOLER INL IV	300mm
66	LP HTR DRN COOLER OUTL IV BYP V	50mm
67	LP HTR DRN COOLER OUTL IV	300mm
68	LP HTR DRN COOLER BYP V	50mm
69	LP HTR DRN COOLER BYP V BYP V	300mm
70	DRAINS COOLER DRN V/V	25mm
71	LP HEATER 1 & 2 AND DRAINS COOLER CONTROL ARRANGEMENT	50mm
72	LP HEATER 1 & 2 AND DRAINS COOLER CONTROL ARRANGEMENT	50mm
73	LP HEATER 3 VESSEL (STEAM & FEEDWATER SIDE)	300mm
74	LP HEATER 3 CONTROL ARRANGEMENT	300mm
75	LP HTR 3 STM VENT TO COLD COND	50mm
76	LP HTR 3 EMERG DRN CNTRL V	250mm
77	LP HTR 3 B/S IV A	400mm
78	LP HTR 3 B/S A TO HOT COND DRN V/V	50mm
79	LP HTR 3 B/S IV B	400mm
80	LP HTR 3 B/S B TO HOT COND DRN V/V	50mm
81	LP HTR 3 EMERG DRN IV	50mm
82	LP HTR 3 CTRL ARGT 1 FLG IV	50mm
83	LP HTR 3 CTRL ARGT 1 IV	25mm
84	LP HTR 3 CTRL	50mm
85	LP HTR 3 CTRL ARGT 2 FLG IV	50mm
86	LP HTR 3 CTRL ARGT 2 IV	25mm
87	LP HTR 3 CTRL ARGT 2 IV	50mm
88	LP HTR 3 CTRL ARGT 3 FLG IV	50mm
89	LP HTR 3 CTRL ARGT 3 IV	25mm

90	LP HTR 3 CTRL ARGT 3 IV	50mm
91	LP HTR 3 LEVEL IV	50mm
92	LP HTR 3 LEVEL IV	50mm
93	LP HTR 3 LEVEL TX IV	50mm
94	LP HTR 3 LEVEL TX IV	50mm
95	LP HTR 3 CTRL ARGT DRN V	25mm
96	LP HTR 3 DRN P/P A SUCT IV	150mm
97	LP HTR 3 DRN P/P A DISCH NRV	100mm
98	LP HTR 3 DRN P/P A DISCH IV	80mm
99	LP HTR 3 DRN P/P A LEAK-OFF IV	25mm
100	LP HTR 3 DRN P/P A DISCH DRN V	25mm
101	LP HTR 3 DRN P/P B SUCT IV	150mm
102	LP HTR 3 DRN P/P B DISCH NRV	100mm
103	LP HTR 3 DRN P/P B DISCH IV	80mm
104	LP HTR 3 DRN P/P BLEAK-OFF IV	25mm
105	LP HTR 3 DRN P/P B DISCH DRN V	25mm
106	LP HTR 3 LEVEL CNTR V	100mm
107	LP HTR 3 LEVEL CNTR IV	100mm
108	LP HTR 3 INL FW IV	300mm
109	LP HTR 3 INL FW IV BYP IV	50mm
110	LP HTR 3 FW BYP IVDRN P/P A DISCH IV	250mm
111	LP HTR 3 FW BYP IV BYP IV	25mm
112	LP HTR 3 OUTL FW IV	300mm
113	LP HTR 3 OUTL FW IV BYP IV	50mm
114	LP HTR 3 OUTL FW NRV	400mm
115	LP HTR 3 OUTL CONDS DRN IV	25mm
116	LP HTR 3 OUTL VENT IV	25mm
117	DA FW INLET VENT V/V	25mm

118	LP HTR 3 OUTL FW IV	25mm
119	LP HTR 3 OUTL DRN V/V TO EXP VES	25mm
120	LP HTR 3 OUTL DRN V/V	25mm
121	LP HTR 3A BLED STM A PRESS TX IV	25mm
122	LP HTR 3A STM PRESS TP	15mm
123	LP HTR 3B STM PRESS TP	15mm
124	LP HTR 3B BLED STM A PRESS TX IV	15mm
125	LP HTR 3 PRESS TP	15mm
126	LP HTR 3 DRAIN PIPE DRAIN V/V	50mm
127	LP HTR 3 PRESS TP	15mm
128	DEAERATOR	300mm
129	DA CONTROL ARRANGEMENT	300mm
130	DLC	400mm
131	DLC INLET I/V	400mm
132	DLC OUTLET I/V	400mm
133	DLC BYPASS IV	400mm
134	DEAERATOR STORAGE TANK	300mm
135	B DA STM INLET V/V	400mm
136	B DA STM INLET MOT BYP V/V	50mm
137	B DA STM INLET HAND BYP V/V	50mm
138	A DA STM INLET V/V	400mm
139	A DA STM INLET MOT BYP V/V	50mm
140	A DA STM INLET HAND BYP V/V	50mm
141	B DA FEEDWATER INLET V/V	300mm
142	B DA FEEDWATER INLET BYP V/V	50mm
143	A DA FEEDWATER INLET V/V	300mm
144	A DA FEEDWATER INLET BYP V/V	50mm

145	DA VENT TO ATM V/V A	25mm
146	DA VENT TO ATM V/V B	25mm
147	DA VENT TO COND V/V	25mm
148	D/A LEVEL IND ISOL V/V	25mm
149	DA CTRL ARGT ISOL V/V	50mm
150	DA CTRL ARGT ISOL V/V	50mm
151	DLC INLET ISOL BYP V/V	50mm
152	DLC OUTLET ISOL BYP V/V	50mm
153	AUX STM TO DST ISOL V/V	250mm
154	AUX STM TO DST ISOL BYP V/V	25mm
154	DST WARM STM ISOL BYP HIV	25mm
155	AUX STM TO DST NRV	250mm
156	DST CTRL ARGT 1 BOTTOM IV	50mm
157	DST CTRL ARGT 1 DRN TO EV IV	50mm
158	DST CTRL ARGT 1 TOP IV	50mm
159	DST CTRL ARGT 1 VENT TO COND IV	25mm
160	DST CTRL ARGT 1 BOTTOM IV	50mm
161	DST CTRL ARGT 1 DRN TO EV IV	50mm
162	DST CTRL ARGT 1 TOP IV	25mm
163	DST CTRL ARGT 1 VENT TO COND IV	50mm
164	DST CTRL ARGT VENT V/V	25mm
165	DST CTRL ARGT 1 BOTTOM IV	50mm
166	DST CTRL ARGT 1 DRN TO EV IV	50mm
167	DST CTRL ARGT 1 TOP IV	50mm
168	DST CTRL ARGT 1 VENT TO COND IV	50mm
169	DST LTX IV	50mm
170	DST LTX IV	50mm
171	IP BLED STM PIPE DRN V TO COND	50mm

172	IP BLED STM IV	400mm
173	IP BLED STM IV MOT BYP V	50mm
174	IP BLED STM HAND BYP V	50mm
175	IP BLED STM DRAIN VESSEL DRN	25mm
176	IP BLED STM DRAIN VESSEL DRN TO COND	25mm
177	IP BLED STM DRAIN VESSEL DRN TO COND INL IV	25mm
178	DA LEVEL CTRL DRN V	25mm
179	IP BLED STM DRAIN VESSEL STM TRAP	50mm
180	IP BLED STM DRAIN VESSEL STM TRAP OUTL IV	50mm
181	IP BLED STM TO DA SUPPLY NRV	400mm
182	IP BLED STM PP ISOL V/V	15mm
183	IP BLED STM PP ISOL V/V	15mm
184	IP BLED STM PTX ISOL V/V	15mm
185	CRH STM TO DA IV	400mm
186	CRH STM TO DA IV MOT BYP V	50mm
187	CRH STM TO DA IV MOT BYP V	50mm
188	CRH STM TO DA IV HAND BYP V	50mm
189	CRH STM TO DA CNTR V	400mm
190	AUX STM TO DA CNTRL V/V	300mm
191	AUX STM TO DA CNTRL V/V	400mm
192	AUX STM TO DA IV MOT BYP V	50mm
193	AUX STM TO DA NRV	300mm
194	AUX STM TO DA IV HAND BYP V	50mm
195	AUX STM TO DA PS IV	25mm
196	DST PRESS IND IV	15mm
197	DST PRESS TX IV	50mm
198	DST PRESS TP	15mm
199	DST DOSING V/V	15mm

200	DST SAMPLING V/V	15mm
201	DST PRESS IND V/V	50mm
202	DST LEVEL IND TOP ISOL V/V	50mm
203	DST LEVEL CONTROL ARGV BOTM ISOL V/V	50mm
204	DST CONTROL ARGV	50mm
205	DST CONTROL ARRANGEMENT (9 OFF)	50mm
206	IP B/S DRAIN POCKET/VESSEL	800mm
207	IP B/S TO DA NRV	300mm
208	SAE B	200mm
209	SAE A	200mm
210	STM EJECT A AIR CNTR V/V	200mm
211	STM EJECT A AIR IV	200mm
212	STM EJECT A STM INL IV	200mm
213	STM EJECT B AIR CNTR V	200mm
214	STM EJECT A AIR IV	200mm
215	STM EJECT A STM INL IV	200mm
216	WAE A1	200mm
217	WAE A2	200mm
218	WAE B1	200mm
219	WAE B2	200mm
220	WAE A1 AIR CV	200mm
221	WAE A2 AIR CV	200mm
222	WAE B1 AIR CV	200mm
223	WAE B2 AIR CV	200mm
224	WAE A1 AIR IV	200mm
225	WAE A2 AIR IV	200mm

226	WAE B1 AIR IV	200mm
227	WAE B2 AIR IV	200mm
228	WAE A1 WTR INL V	200mm
229	WAE A2 WTR INL V	200mm
230	WAE B1 WTR INL V	200mm
231	WAE B2 WTR INL V	200mm
232	SEC CW (GEN) P/P A SUCTION V	300mm
233	SEC CW (GEN) P/P A DISCH NRV	300mm
234	SEC CW (GEN) P/P A DISCH IV	300mm
235	SEC CW (GEN) P/P B SUCTION V	300mm
236	SEC CW (GEN) P/P B DISCH NRV	300mm
237	SEC CW (GEN) P/P B DISCH IV	300mm
238	SEC CW (GEN) EXCESS RETURN V	300mm
239	SEC CW (GEN) EXCESS RETURN V IV	300mm
240	SEC CW (GEN) EXCESS RETURN V IV	300mm
241	SEC CW (GEN) SUMP TANK LOW LEVEL CNTR V/V	150mm
242	SEC CW (GEN) SUMP TANK HIGH LEVEL CNTR V/V	150mm
243	ATMOSPHERIC TANK	300mm
244	TAPROGGE SCREENS (LOWER & UPPER)	80mm
245	TAPROGGE SCREENS (LOWER & UPPER)	80mm
246	TAPROGGE A ACCUMULATOR INL ISOL V/V	80mm
247	TAPROGGE A ACCUMULATOR OUT ISOL V/V	80mm
248	TAPROGGE B ACCUMULATOR INL ISOL V/V	80mm
249	TAPROGGE B ACCUMULATOR OUT ISOL V/V	80mm
250	TAPROGGE P/P RECIRC ISOL V/V	80mm
251	TAPROGGE P/P RECIRC ISOL V/V	80mm

252	GLAND SEAL WATER PRESSURE REDUCING VALVE	80mm
253	GLAND SEAL WATER FILTER	80mm
254	HP HTR 5A (STEAM & FEEDWATER SIDE)	300mm
255	HP HTR 6A (STEAM & FEEDWATER SIDE)	300mm
256	HP HTR 6B (STEAM & FEEDWATER SIDE)	300mm
257	HP HTR 5B (STEAM & FEEDWATER SIDE)	300mm
257	HP HTR 5A BS I/V	400mm
258	HP HTR 5A BS I/V BYP	50mm
259	HP HTR 5A BS I/V BYP	50mm
260	HP HTR 5B BS I/V	400mm
261	HP HTR 5B BS I/V BYP	50mm
262	HP HTR 5B BS I/V BYP	50mm
263	HP HTR 6A C R/H STM INL I/V	300mm
264	HP HTR 6A C R/H STM INL IV BP	25mm
265	HP HTR 6A C R/H STM INL IV BP	25mm
266	HP HTR 6B C R/H INL I/V	300mm
267	HP HTR 6B C R/H INL IV BP	25mm
268	HP HTR 6B C R/H INL IV BP	25mm
269	HP HTR 6A DRN/HP 5A CNTRL V/V	100mm
270	HP HTR 5A DRN TO DST CTRL V/V	100mm
271	HP HTR 6B DRN/HPH 5B CTRL V/V	100mm
272	HP HTR 5B DRN TO DST CTRL V/V	100mm
273	HP HTR 5A VENT TO COLD CON CTRL AIR IV	25mm
274	HP HTR 6A VENT TO COLD COND CTRL AIR IV	25mm
275	HP HTR 5B VENT TO COLD COND CTRL AIR IV	25mm
276	HP HTR 6B VENT TO COLD COND CTRL AIR IV	25mm

277	HP HTR 5A EMERG DRN/HOT COND IV	150mm
278	HP HTR 5A EMERG DRN / HOT COND CTRL	150mm
279	HP HTR 6A EMERG DRN/HOT COND IV	350mm
280	HP HTR 6A EMERG DRN/HOT COND CTRL V/V	80mm
281	HP HTR 5B EMERG DRN/HOT COND IV	350mm
282	HP HTR 5B EMERG DRN/HOT COND CTRL V/V	350mm
283	HP HTR 6B EMERG DRN/HOT COND IV	350mm
284	HP HTR 6B EMERG DRN/HOT COND CTRL V/V	350mm
285	HP HEATER 5A DRN IV	200mm
286	HP HEATER 5A DRN/DTR IV	50mm
287	HP HEATER 6A DRN/HTR 5A DRN IV	250mm
288	HP HTR 5A FEEDWATER INL DRN/DTR IV	50mm
289	HP HTR 5A FW INL DRN IV	150mm
290	HP HTR 6A FW OUTL DRN IV	50mm
291	HP HTR 6A FW OUTL DRN/DTR IV	25mm
292	HP HTR 5A FW OUTL PP IV	25mm
293	HP HTR 5A DRN/EV IV	50mm
294	HP HTR 5A FW INL DRN/EV IV	25mm
295	HP HTR 6A DRN/HTR 5A IV	250mm
296	HP HTR 6A DRN/HTR 5A IV	250mm
297	HP HTR 6A CTRL ARG 1 IV	50mm
298	HP HTR 6A CTRL ARG 2 IV	50mm
299	HP HTR 6A CTRL ARG 3 IV	50mm
300	HP HTR 6A CTRL ARG 1 IV	25mm
301	HP HTR 6A CTRL ARG 2 IV	25mm
302	HP HTR 6A CTRL ARG 3 IV	25mm
303	HP HTR 5A CTRL ARG 1 IV	50mm
304	HP HTR 5A CTRL ARG 2 IV	50mm

305	HP HTR 5A CTRL ARGT 3 IV	50mm
306	HP HTR 5A CTRL ARGT 1 IV	50mm
307	HP HTR 5A CTRL ARGT 2 IV	50mm
308	HP HTR 5A CTRL ARGT 3 IV	50mm
309	HP HTR 5A EMERGENCY DRN LINE DRN IV	200mm
310	HP HTR 5A EMERGENCY DRN LINE DRN/DTR IV	50mm
311	HP HTR 5A DRN/DST IV	50mm
312	HP HTR 5A CTRL ARGT VENT/DTR IV	25mm
313	HP HTR 6A CTRL ARGT VENT/DTR IV	25mm
314	HP HTR 6A C R/H STM INL NRV TOP COVER PLUG REMOVED	250mm
315	HP HTR 6A DRN/HP 5A DRN IV	25mm
316	HP HTR 5A VENT/EV IV	25mm
317	HP HTR 5A VENT/DTR IV	25mm
318	HP HTR 6A VENT/EV IV	25mm
319	HP HTR 6A VENT/DTR IV	25mm
320	HP HTR 6A LEVEL TX IV	25mm
321	HP HTR 6A LEVEL TX IV	50mm
322	HP HTR 6A LEVEL CTRL IV	50mm
323	HP HTR 6A LEVEL CTRL IV	50mm
324	HP HTR 5A LEVEL TX IV	50mm
325	HP HTR 5A LEVEL TX IV	50mm
326	HP HTR 5A LEVEL CTRL IV	50mm
327	HP HTR 5A LEVEL CTRL IV	50mm
328	HP HTR 6A CTRL ARGT DRN IV	50mm
329	HP HTR 6A CTRL ARGT DRN IV	50mm
330	HP HTR 5A CTRL ARGT DRN IV	50mm
331	HP HTR 6A CTRL ARGT 1/CONT IV	25mm
332	HP HTR 6A CTRL ARGT 2/COND IV	25mm

333	HP HTR 6A CTRL ARGT 3/COND IV	25mm
334	HP HTR 5A CTRL ARGT 1/COND IV	25mm
335	HP HTR 5A CTRL ARGT 2/COND IV	25mm
336	HP HTR 5A CTRL ARGT 3/COND IV	25mm
337	HP HTR 5A CTRL ARGT "1" LVL SW/IND DRN IV	15mm
338	HP HTR 5A CTRL ARGT "2" LVL SW/IND DRN IV	15mm
339	HP HTR 5A CTRL ARGT "3" LVL SW/IND DRN IV	15mm
340	HP HTR 6A CTRL ARGT "1" LVL SW/IND DRN IV	15mm
341	HP HTR 6A CTRL ARGT "2" LVL SW/IND DRN IV	15mm
342	HP HTR 6A CTRL ARGT "3" LVL SW/IND DRN IV	15mm
343	HP HTR 5A EMERGENCY DRN LINE DRN/DTR IV	25mm
344	HP HTR 5A EMERGENCY DRN LINE DRN/EV IV	25mm
345	HP HTR 5A EMERGENCY DRN LINE DRN/DTR IV	25mm
346	HP HTR 5A DRN/DST IV	25mm
347	HP HTR 5A VENT/COND IV	25mm
348	HP HTR 6A DRN/HTR 5A IV	25mm
349	HP HTR 6A DRN/HTR 5A IV BP	25mm
350	HP HTR 6A DRN/HTR 5A DRN/EV IV	25mm
351	HP HTR 6A DRN/HTR 5A DRN/DTR IV	25mm
352	HP HTR 6A EM DRN/HOT COND IV BP	25mm
353	HP HTR 6A VENT / COND IV	25mm
354	HP HTR 6A EMERGENCY DRN LINE DRN/EV IV	25mm
355	HP HTR 6A EMERGENCY DRN LINE DRN/DTR IV	25mm
356	HP HTR 6A PRESS DROP SUB COOLING ZONE DIFF IND IV	15mm
357	HP HTR PRESS DROP SUB-COOLING ZONE DIFF PRESS SW/IND IV	15mm
358	HP HTR 6A HTR 5A PP IV	15mm
359	HP HTR 5A FWT PP IV	15mm
360	HP HTR 6A BS PTX IV	15mm

361	HP HTR 6A BS PP IV	15mm
362	HP HTR 6A C R/H STM INL DIFF PRESS IND/SW IV	15mm
363	HP HTR 6A C R/H STM INL DIFF PRESS IND/SW IV	15mm
364	HP HTR 6A PI IV	15mm
365	HP HTR 6A PP IV	15mm
366	HP HTR 5A BS PTX IV	15mm
367	HP HTR 5A PP IV	15mm
368	HP HTR 5A PI IV	15mm
369	HP HTR 5A PP IV	15mm
370	HP HTR 6A DRN/DTR IV	25mm
371	HP HTR 6A C R/H STM INL NRV TOP COVER PLUG VENT/DTR IV	250mm
372	HP HTR 6A PI IV	15mm
373	HP HTR 6B EMERGENCY DRN LINE DRN IV	25mm
374	HP HTR 6B EMERGENCY DRN LINE DRN/DTR IV	25mm
375	HP HTR 6B DRN/HTR 5B IV	25mm
376	HP HTR 6B DRN/HTR 5B IV	25mm
377	HP HTR 5B EMERGENCY DRN LINE DRN IV	25mm
378	HP HTR 5B DRN IV	25mm
379	HP HTR 5B CTRL ARG 1 IV	50mm
380	HP HTR 5B CTRL ARG 2 IV	50mm
381	HP HTR 5B CTRL ARG 3 IV	50mm
382	HP HTR 5B CTRL ARG 1 IV	50mm
383	HP HTR 5B CTRL ARG 2 IV	50mm
384	HP HTR 5B CTRL ARG 3 IV	50mm
385	HP HTR 6B CTRL ARG 1 IV	50mm
386	HP HTR 6B CTRL ARG 2 IV	50mm
387	HP HTR 6B CTRL ARG 3 IV	50mm
388	HP HTR 6B CTRL ARG 1 IV	50mm

389	HP HTR 6B CTRL ARGT 2 IV	50mm
390	HP HTR 6B CTRL ARGT 3 IV	50mm
391	HP HTR 6B DRN/HTR 5B DRN IV	50mm
392	HP HTR 5B DRN/FWT IV	50mm
393	HP HTR 6B C R/H STM INL NRV TOP COVER PLUG REMOVED	250mm
394	HP HTR 5B EMERGENCY DRN LINE DRN/DTR IV	25mm
395	HP HTR 5B EMERGENCY DRN LINE DRN/DTR IV	25mm
396	HP HTR 5B DR/EV IV	25mm
397	HP HTR 5B DRN/DTR IV	25mm
398	HP HTR 5B DRN TO DST DRN IV	25mm
399	HP HTR 6B EMERGENCY DRN/HOT COND IV BP	25mm
400	HP HTR 6B DRN/HTR 5B DRN/DTR IV	25mm
401	HP HTR 6B DRN/HTR 5B DRN/EV IV	25mm
402	HP HTR 6B DRN/HTR 5B DRN/DTR IV	25mm
403	HP HTR 6B DRN/HTR 5B IV BP	25mm
404	HP HTR 6B DRN/HTR 5B IV BP	25mm
405	HP HTR 6B EMERGENCY DRN LINE DRN/EV IV	25mm
406	HP HTR 6B EMERGENCY DRN LINE DRN/DTR IV	25mm
407	HP HTR 5B VENT/COND IV	25mm
408	HP HTR 6B VENT/COND IV	25mm
409	HP HTR 6B LEVEL CTRL IV	25mm
410	HP HTR 6B LEVEL CTRL IV	25mm
411	HP HTR 6B LEVEL CTRL TX IV	25mm
412	HP HTR 6B LEVEL TX IV	25mm
413	HP HTR 6B CTRL ARGT 1/COND IV	25mm
414	HP HTR 6B CTRL ARGT 2/COND IV	25mm
415	HP HTR 6B CTRL ARGT DRN/DTR IV	25mm
416	HP HTR 6B CTRL ARGT 3/COND IV	25mm

417	HP HTR 5B LEVEL TX IV	15mm
418	HP HTR 5B LEVEL TX IV	15mm
419	HP HTR 5B LEVEL CTRL IV	15mm
420	HP HTR 5B LEVEL CTRL IV	15mm
421	HP HTR 5B CTRL ARG1 1 LVL SW/IND DRN IV	15mm
422	HP HTR 5B CTRL ARG1 2 LVL SW/IND DRN IV	15mm
423	HP HTR 5B CTRL ARG1 3 LVL SW/IND DRN IV	15mm
424	HP HTR 6B CTRL ARG1 1 LVL SW/IND DRN IV	15mm
425	HP HTR 6B CTRL ARG1 2 LVL SW/IND DRN IV	15mm
426	HP HTR 6B CTRL ARG1 3 LVL SW/IND DRN IV	15mm
427	HP HTR 5B CTRL ARG1 DRN/DTR IV	15mm
428	HP HTR 5B CTRL ARG1 1/COND IV	15mm
429	HP HTR 5B CTRL ARG1 2/COND IV	15mm
430	HP HTR 5B CTRL ARG1 2/COND IV	15mm
431	HP HTR 6B/HP HTR PP IV	15mm
432	HP HTR 6B PRESS DROP SUB-COOLING ZONE DIFF	15mm
433	HP HTR 6B PRESS DROP SUB-COOLING ZONE DIFF	15mm
434	HP HTR 5B DRN TO DST PP IV	15mm
435	HP HTR 6B C R/H STM INL DIFF PRESS IND/SW IV	15mm
436	HP HTR 6B C R/H STM INL DIFF PRESS IND/SW IV	15mm
437	HP HTR 6B PI IV	15mm
438	HP HTR 6B C R/H STM INL PP IV	15mm
439	HP HTR 6B PP IV	15mm
440	HP HTR 6B C R/H STM INL PRESS TX IV	15mm
441	HP HTR 5B PP IV	15mm
442	HP HTR 5B PI IV	15mm
443	HP HTR 5B BS PP IV	15mm
444	HP HTR 5B BS PTX IV	15mm

445	HP HTR 5B VENT IEV IV	25mm
446	HP HTR 6B VENT IEV IV	25mm
447	HP HTR 6B VENT DTR IV	25mm
448	HP HTR 5B VENT DTR IV	25mm
449	HP HTR 5B CTR ARGV VENT/DTR IV	25mm
450	HP HTR 6B EMERGENCY DRN LINE DRN/DTR IV	25mm
451	HP HTR 6B FW OUTL P/P IV	15mm
452	HP HTR 5B FW	25mm
453	HP HTR 5B EMERGENCY DRN LINE DRN/EV IV	25mm
454	CONDENSATE POLISHER A	300mm
455	CONDENSATE POLISHER B	300mm
456	CONDENSATE POLISHER C	300mm
457	POLISHER A VENT BIN CNTRL V/V	50mm
458	CONDS POLISHER 1 A DRN WTR CTRL V/V	50mm
459	CONDS POLISHER 1A AIR & TRF WTR CTRLV/V	50mm
460	CONDS POLISHER 1 A FIL WTR INL CTRL V/V	300mm
461	Conds polisher 1A Inl isol bin ctrl v/v	300mm
462	POLISHER 1A OUTL ISOL BIN CTRL V/V	300mm
463	CONDS POLISHER 1 B VENT BIN CTRL V/V	50mm
464	CONDS POLISHER 1B RINSE WTR OUT LCTRL V/V	100mm
465	CONDS POLISHER 1B AIR & TRF WTR CTRL V/V	100mm
466	CONDS POLISHER 1B FIL WTR INLET CTRLV/V	300mm
467	Conds polisher 1B Inl isol bin ctrl v/v	300mm
468	CPP 1B OUTL ISOL BIN CTRL V/V	300mm
469	CONDS POLISHER 1 C VENT BIN CTRL V/V	50mm
470	CONDS POLISHER 1 C DRN WTR OUTL CTRL V/V	100mm
471	CONDS POLISHER 1C AIR & TRF WTR CTRL V/V	100mm

472	CONDS POLISHER 1 C FIL WTR INL CTRL V/V	300mm
473	Conds polisher 1C Inl isol bin ctrl v/v	300mm
474	CPP 1C OUTL BIN CTRL V/V (MOVB)	300mm
475	CPP EMERGENCY BYP BIN CNTRL VV	50mm
476	CPP BYPASS MOD CNTRL V/V	300mm
477	CPP RESIN MIXING AIR PRESS REG V/V	50mm
478	CPP DIRTY RESIN TRN FIL LINE VENT VLV	50mm
479	CPP DIRTY RESIN TRN WTR SEC LINE VENT VLV	50mm
480	CPP REFILL LINE VENT VLV	50mm
481	CPP DIRTY RESIN TRNS WTR SEC LINE VENT VLV	50mm
482	CONDENSATE POLISHER A OUTLET RESIN TRAP	300mm
483	CONDENSATE POLISHER B OUTLET RESIN TRAP	300mm
484	CONDENSATE POLISHER C OUTLET RESIN TRAP	300mm
485	BFPT EXTRACTION PUMP SUC STRAINER A	300mm
486	BFPT EXTRACTION PUMPS SUC STRAINER B	300mm
487	BFPT SAE AIR VALVES	200mm
488	BFPT SAE AIR VALVES	200mm
489	BFPT SAE AIR VALVES	200mm
490	BFPT SAE AIR VALVES	200mm
491	BFPT CONDENSER LEVEL CONTROL VALVE	250mm
492	BFPT VACUUM BREAKER I/V	80mm
493	BFPT CDV SPRAY VALVE	50mm
494	BFPT CONDENSER LEVEL CONTROL VALVE	250mm
495	BFPT EP A DISCH NRV	100mm
496	BFPT EP B DISCH NRV	100mm
497	BFPT EP A SUC IV	200mm
498	BFPT EP B SUC IV	200mm

499	BFPT EP A DISCH IV	150mm
500	BFPT EP B DISCH IV	150mm
501	BFPT EP A RECIRC IV	50mm
502	BFPT EP B RECIRC IV	50mm
503	BFPT COND CTRL ARGV IV	25mm
504	BFPT COND DRN/DTR IV	25mm
505	BFPT COND CTRL ARGV FLG IV	25mm
506	MC/BFPT INTERCONNECTOR	300mm
507	BFPT CONDENSER	300mm
508	BURSTING DISCS	100mm
509	BFPT PIPE DRN STM TRAP	100mm
510	BFPT PIPE DRN STM TRAP	100mm
511	OIL COOLERS CW INLET AND OUTLET ISOLATING VALVES	150mm
512	OIL COOLERS CW INLET AND OUTLET ISOLATING VALVES	150mm
513	OIL COOLERS CW INLET AND OUTLET ISOLATING VALVES	150mm
514	OIL COOLERS CW INLET AND OUTLET ISOLATING VALVES	150mm
515	EFP A LEAK OFF NRV	80mm
516	EFP B LEAK OFF NRV	80mm
517	SFP LEAK OFF NRV	80mm
518	BFPT BOOSTER P/P COOLING INLET I/V (25 mm)	25mm
519	BFPT BOOSTER P/P COOLING OUTLET I/V (25 mm)	25mm
520	BFPT A BOOSTER P/P COOLING INLET I/V (25 mm)	25mm
521	BFPT BOOSTER P/P COOLING OUTLET I/V (25 mm)	25mm

522	EFP B BOOSTER P/P COOLING INLET I/V (25 mm)	25mm
523	EFP B BOOSTER P/P COOLING OUTLET I/V (25 mm)	25mm
524	EFP A LEAK OFF CONTROL VALVE (100 mm)	100mm
525	EFP B LEAK OFF CONTROL VALVE (100 mm)	100mm
526	EFP A BALANCE LINE IV (100 mm)	100mm
527	EFP B BALANCE LINE IV (100 mm)	100mm
528	SFP BALANCE LINE IV (100 mm)	100mm
529	EFP A ATT. SPRAYWATER HIV (65 mm)	65mm
530	EFP B ATT. SPRAYWATER HIV (65 mm)	65mm
531	SFP ATT. SPRAYWATER HIV (80 mm)	80mm
532	SFP LEAK OFF VALVE (130 mm)	130mm
533	EFP A SUC DRN / EV V (100 mm)	100mm
534	EFP A SUC DRN / DTR V	25mm
535	EFP A SUC DRN IV (100 mm)	100mm
536	EFP A SUC DRN / DTR IV (25 mm)	25mm
537	EFP B SUC DRN / EV V (100 mm)	100mm
538	EFP B SUC DRN / DTR V (100 mm)	100mm
539	EFP B SUC DRN IV (100 mm)	100mm
540	EFP B SUC DRN / DTR IV (25 mm)	25mm
541	SFP SUC DRN / EV V (100 mm)	100mm
542	SFP SUC DRN / DTR V (100 mm)	100mm
543	SFP SUC DRN IV (100 mm)	100mm
544	SFP SUC DRN / DTR IV (25 mm)	25mm
545	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
546	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
547	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
548	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm

549	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
550	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
551	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
552	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
553	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
554	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
555	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
556	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
557	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
558	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
559	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
560	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
561	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
562	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
563	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
564	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
565	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
566	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
567	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
568	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
569	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
570	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm

571	ALL EFP A, EFP B, SFP AND FEEDREG DRAIN VALVES (25 mm)	25mm
572	EFP A SUCTION VALVE (400 mm)	400mm
573	EFP B SUCTION VALVE (400 mm)	400mm
574	SFP SUCTION VALVE (500 mm)	500mm
575	MAIN FEED REG VALVE (400 mm)	400mm
576	MAIN FEED REG VALVE BYPASS (40 mm)	50mm
577	FEED REG CONTROL VALVE A (250 mm)	250mm
578	FEED REG CONTROL VALVE B (250 mm)	250mm
579	FEED REG MOTOR ISOLATING V/V A (250 mm)	250mm
580	FEED REG MOTOR ISOLATING V/V B (250 mm)	250mm
581	FEED REG MOTOR ISOLATING V/V A BYPASS (25mm)	25mm
582	FEED REG MOTOR ISOLATING V/V B BYPASS (25mm)	25mm
583	FEED REG HAND ISOLATING V/V A (250 mm)	250 mm
584	FEED REG HAND ISOLATING V/V B (250 mm)	250 mm
585	FEED REG HAND ISOLATING V/V A BYPASS (25mm)	25mm
586	FEED REG HAND ISOLATING V/V B BYPASS (25 mm)	25 mm
587	SEAL WATER ISO V/V 'A' (SUCTION) (125mm)	125mm
588	SEAL WATER ISO V/V 'B' (SUCTION) (125mm)	125mm
589	SEAL WATER ISO V/V 'A' (DISCH) (80mm)	80mm
590	SEAL WATER ISO V/V 'B' (DISCH) - (80mm)	80mm
591	SEAL WATER ISO V/V 100% BFP (50mm)	50mm
592	SEAL WATER ISO V/V 100% BFP (50mm)	50mm
593	SEAL WATER BYP ISO V/V 100% BFP (50mm)	50mm
594	SEAL WATER ISO V/V 100% EFP A (40 mm)	40mm
595	SEAL WATER ISO V/V 100% EFP A (40 mm)	40mm
596	SEAL WATER BYP ISO V/V 100% EFP (40 mm)	40mm
597	SEAL WATER ISO V/V 100% EFP B (40 mm)	40mm
598	SEAL WATER ISO V/V 100% EFP B (40 mm)	40mm

599	SEAL WATER BYP ISO V/V 100% EFP (40 mm)	40mm
600	GLAND DRAIN ISO V/V 'A' (SUCTION) - (80mm)	80mm
601	GLAND DRAIN ISO V/V 'B' (SUCTION) - (80mm)	80mm
602	GLAND DRAIN ISO V/V 'A' (DISCH) - (80mm)	80mm
603	GLAND DRAIN ISO V/V 'B' (DISCH) - (80mm)	80mm
605	SEAL WATER NON RETURN 'A' - (80mm)	80mm
606	SEAL WATER NON RETURN 'B' - (80mm)	80mm
607	GLAND DRAIN NON RETURN V/V 'A' - (80mm)	80mm
608	GLAND DRAIN NON RETURN V/V 'B' - (80mm)	80mm
609	SEAL WATER CNTRL V/V ON EFP A	80mm
610	SEAL WATER CNTRL V/V ON EFP B	80mm
611	SEAL WATER CNTRL V/V ON SFP	80mm
612	BLR AUX COOLING RETURN STRAINER MAIN	300mm
613	BLR AUX COOLING RETURN STRAINER STANDBY	250mm
614	BLR AUX COOLING TANK SUPPLY STRAINER	250mm
615	BLR AUX COOLING RETURN CONTROL V/V (150MM)	150mm
616	BLR AUX COOLING RETURN IV 1 (150MM)	150mm
617	BLR AUX COOLING RETURN IV 2 (150MM)	150mm
618	BLR AUX COOLING SUP IV 1	150mm
619	BLR AUX COOLING SUP IV 2 (150MM)	150mm
620	BLR AUX COOLING RETURN BYPASS V/V (150MM)	150mm
621	BLR AUX COOLING SUP BYPASS V/V (150NB)	150mm
622	BLR AUX COOLING RETURN BYPASS V/V (50MM)	50mm
623	BLR AUX CLG H/EXCH MAIN CW SUP IV (300MM)	300mm
624	BLR AUX CLG H/EXCH CW IV (300MM)	300mm
625	Blr Aux Clg H/EXCH A CW Supply IV (8")	200mm
626	Blr Aux Clg H/EXCH Supply IV (8")	200mm

627	BLR AUX CLG H/EXCH A CW RTN IV (250MM)	250mm
628	BLR AUX CLG H/EXCH B CW RTN IV (250MM)	250mm
629	Blr Aux Clg Wtr Heat A Outlet IV (8")	200mm
630	Blr Aux Clg Wtr Heat Exchanger A INL IV (8")	200mm
631	Blr Aux Clg Wtr Heat Exchanger B INL IV (8")	200mm
632	Blr Aux Clg Wtr Heat Exchanger B OUTL IV (8")	200mm
633	Blr Aux Clg Clg Rtn IV (10")	250mm
634	Blr Aux Clg Clg Rtn IV (10")	250mm
635	Blr Aux Clg Clg Rtn Byp IV (10")	250mm
636	Blr Aux Clg Clg Rtn Byp IV (10")	250mm
637	DEMIN WATER MAKE-UP TANK	400mm
638	COLD REHEAT SUPPLY IV	200mm
639	AUX STEAM SUPPLY NRV	200mm
640	AUX STEAM SUPPLY IV	200mm
641	AUX STEAM MANIFOLD DRN TRAP BYPASS V/V	25mm
642	AUX STEAM MANIFOLD DRN STEAM	50mm
643	AUX STEAM MANIFOLD DRAIN TRAP INLET IV	50mm
644	AUX STEAM MANIFOLD DRN TRAP OUTLET IV	50mm
645	HP/IP SUPPLY VLV	50mm
646	HP/IP DUMP VLV	300mm
647	HP/IP DUMP DESUPERHEATER SPRY WATER VLV	50mm
648	LP SUPPLY VALVE	50mm
649	LP DESUPERHEATER SPRAY WATER VLV	50mm
650	HP STEAM CHEST LH UPR DRN MARTYR IV	50mm
651	HP LWR LOOP PIPE DRAIN MARTYR ISOL V/V	50mm
652	HP CYL LH COLD REHEAT DRAIN MARTYR ISOL V/V	50mm

653	HP CYL RH COLD REHEAT DRAIN MARTYR ISOL V/V	50mm
654	IP STEAM CHEST LH UPR DRAIN MASTER ISOL V/V	50mm
655	IP STEAM CHEST RH UPR DRAIN MASTER ISOL V/V	50mm
656	IP LOWER LOOP PIPE DRAIN MARTYR ISOL V/V	50mm
657	LH COLD REHEAT EMERGENCY DRAIN NOZZLE TRAP ISOL V/V	50mm
658	GESTRA DRAIN FROM LH COLD REHEAT ISOL V/V	50mm
659	LH COLD REHEAT EMERGENCY DRAIN NOZZLE TRAP ISOL V/V	50mm
660	GESTRA DRAIN FROM RH COLD REHEAT ISOL V/V	50mm
661	GESTRA DRAIN FROM RH COLD REHEAT ISOL V/V	50mm
662	GESTRA DRAIN FROM LH COLD REHEAT ISOL V/V	50mm
663	LP HOOD SPRAY DUPLEX STRAINER	100mm
664	OVERHAUL LP TURBINE SPRAY SUPPLY ISOL V/V	100mm
665	OVERHAUL LP TURBINE EXHAUSTER SPRAY COOLING NOZZLE	25mm
666	OVERHAUL LP TURBINE SPRAY SUPPLY NON RETURN V/V	100mm
667	OVERHAUL LP TURBINE SPRAY PRESS SUSTAINING V/V	25mm
668	OVERHAUL LP TURBINE SPRAY CONTROL V/V	100mm
669	OVERHAUL LP TURBINE SPRAY CONTROL OUTLET ISOL V/V	100mm
670	OVERHAUL LP TURBINE SPRAY CONTROL BYPASS V/V	100mm
671	OVERHAUL DC EMERG SPRW P/P SUCT ISOL V/V	100mm
672	OVERHAUL DC EMERG SPRW P/P DISCHARGE ISOL V/V	100mm
673	OVERHAUL DC EMERGENCY SPRAY WATER PUMP DISCHARGE NON RETURN V/V	100mm
674	OVERHAUL LP EXHAUST SPRW FILTER DIFF PRESS IND ISOL V/V	25mm
675	OVERHAUL DC EMERG SWTR P/P DRAIN ISOL V/V	25mm
676	OVERHAUL CONDENSATE EXTRACTION P/P PRESS SW ISOL V/V	25mm
677	OVERHAUL CONDENSATE EXTRACTION P/P PRESS SW ISOL V/V	25mm

678	OVERHAUL LP EXHAUST SPRAY WTR SUPPLY STRAINER DIFF PRESS IND	100mm
679	OVERHAUL DUPLEX STRAINER VENT ISOL V/V	25mm
680	OVERHAUL LP SPRAY COOLING WTR FLOW IND	25mm
681	OVERHAUL DUPLEX STRAINER DRAIN ISOL V/V	25mm
682	OVERHAUL DUPLEX STRAINER VENT ISOL V/V	25mm
683	OVERHAUL LP TURB SPRAY INLET ISOL V/V	25mm
684	OVERHAUL DUPLEX STRAINER DRAIN ISOL V/V	25mm
685	OVERHAUL EMRG SWTR SUPPLY P/P DISCHARGE PRESS SW ISOL V/V	25mm
686	OVERHAUL LP EXHAUST SPRW FILTER DIFF PRESS IND ISOL V/V	25mm
687	OVERHAUL LP TURBINE SPRAY SUPPLY DRAIN ISOL V/V	25mm
688	OVERHAUL LP TURBINE SPRAY SUPPLY DRAIN ISOL V/V	25mm
689	OVERHAUL DC EMRG SPRW SUPPLY P/P DISCHARGE PRESS SW ISOL V/V	25mm
690	OVERHAUL CONDENSATE EXTRACTION P/P OUTLET PRESS SWITCH ISOL V/V	25mm
691	OVERHAUL DC EMRG SPRW SUPPLY P/P DISCHARGE PRESS SW ISOL V/V	25mm
692	LP DEMIN RANGE TO RFWT INLET V/V	300mm
693	LP HTR 3 CTRL ARGV VENT V/V	25mm
694	EFP A ATT SPRAYWATER NRV	80mm
695	EFP B ATT SPRAYWATER NRV	80mm
696	SFP REHEAT SPRAYWATER NRV	80mm
697	BLR AUX COOLING SUP CONTROL V/V (150MM)	150mm
698	BLR AUX COOLING SUP DRAIN CONTROL V/V (50MM)	50mm
699	BLR AUX COOLING SUP DRAIN V/V (50MM)	50mm
700	CPP RINSE WTR DRAIN BIN CTRL V/V	100mm
701	U4 CPP CLN RES TRF INLET BIN CTRL V/V	100mm
702	CLEAN RES TRF TO U5 TO 6 BIN CTRL V/V	100mm

703	DIRTY RES TRF FROM U5 TO 6 BIN CTRL V/V	100mm
704	U4 CPP DTY RES TRF OUTL BIN CTRL V/V	100mm
705	U4 CPP DTY RES TRF LINES FLUSH WTR CTRLV/V	100mm
706	U4 CPP CLN RESTRF LINES FLUSH WTR CTRLV/V	100mm
707	CPP MIXING AIR & DTY RESTRF CTRL V/V	100mm
708	CPP DTY RES TRF WTR SUPL BIN CTRL V/V	100mm
709	CPP MIXING & DTY RESTRF AIR SUPL CTRLV/V	100mm
710	CPP CLN RESTRF WTR TO RECOV WTR CTRLV/V	100mm
711	CPP DIRTY RES TRF LINE FIL BIN CTRL V/V	100mm
712	CLN RES TRF WTR TO WASTE BIN CTRL V/V	100mm
713	CPP REFILL BIN CONTROL V/V	100mm
714	CONDS POLISHER 4 A INL MOD CTRL V/V (replace)	50mm
715	CONDS POLISHER 4 A CLN RESIN CTRL V/V	50mm
716	CONDS POLISHER 4 A DTY RES OUTL CTRL V/V	50mm
717	CONDS POLISHER 4 A SEC RES TRF CTRL V/V	50mm
718	CONDS POLISHER 4 A OUTL MOD CONTROL V/V (replace	50mm
719	CONDS POLISHER 4 B INL MOD CTRL V/V (replace)	50mm
720	CONDS POLISHER 4 B CLN RESIN CTRL V/V	50mm
721	CONDS POLISHER 4 B DTY RES OUTL CTRL V/V	50mm
722	CONDS POLISHER 4 B SEC RES TRF CTRL V/V	50mm
723	CONDS POLISHER 4 B OUTL MOD CONTROL V/V (replace	50mm
724	CONDS POLISHER 4 C INL MOD CTRL V/V (replace)	50mm
725	CONDS POLISHER 4 C CLN RESIN CTRL V/V	50mm
726	CONDS POLISHER 4 C DTY RES OUTL CTRL V/V	50mm
727	CONDS POLISHER 4 C SEC RES TRF CTRL V/V	50mm
728	CONDS POLISHER 4 C OUTL MOD CONTROL V/V (replac	50mm

729	CLEAN RES TRF WTR OUTL LINE VENT V/V	50mm
730	CPP DIRTY RES TRF WTR SUPPLY LINE VNT V/V	50mm
731	CPP MIXNG AIR RES TRF SUPL LINE DRN V/V	50mm
732	CPP INLET SAMPLING LINE SECONDARY COOLER	50mm
733	CPP INL SMPLN LINE LP CAPLRY SMPLR CLR	50mm
734	CPP A SAMPLING LINE SECONDARY COOLER	50mm
735	CPP A SMPLN LINE LP CAPILLARY SMPLR CLR	50mm
736	CPP B SAMPLING LINE SECONDARY COOLER	50mm
737	CPP B SMPLN LINE LP CAPILLARY SMPLR CLR	50mm
738	CPP C SAMPLING LINE SECONDARY COOLER	50mm
739	CPP C SMPLN LINE LP CAPILLARY SMPLR CLR	50mm
740	CPP OUTL SAMPLING LINE SECONDARY COOLER	50mm
741	CPP OUTL SMPLN LINE LP CAPLRY SMPLR CLR	50mm
742	HOT COND SAMPLING LINE SECONDARY COOLER	50mm
743	CIRC WTR SMPLN LINE DISTRIBUTION MFLD	50mm
744	CIRC WTR SMPLN LINE DISTRIBUTION MFLD	50mm
745	CPP INL SMPLN LINE DISTRIBUTION MFLD	50mm
746	CPP OUTL SMPLN LINE DISTRIBUTION MFLD	50mm
747	HOT COND SMPLN LINE DISTRIBUTION MFLD	50mm
748	HP HTR 5B FW OUTL PP IV	25mm
749	HP HTR 5B FW INL DRN IV	25mm
750	HP HTR 5B FW INL DRN/DTR IV	25mm
751	HP HTR 6B FW OUTL DRN/DTR IV	25mm
752	HP HTR 6B FW OUTL DRN/DTR IV	25mm
753	HP HTR 5B FW INL DRN/EV IV	25mm
754	HP HTR 6B FW OUTL P/P IV	25mm

755	HP HTR 5B EMERGENCY DRN LINE DRN/EV IV	25mm
756	BLR AUX CLG P/P A NRV	25mm
757	BLR AUX CLG P/P B NRV	25mm
758	BLR AUX CLG P/P C NRV	25mm

KOEBERG U1 IN TURBINE VALVES (72)		
QIP	TASK NAME	SIZE
MAIN CONDENSER		
1	CW DOORS (3 Off)	500mm
2	CW DOORS (3 Off)	500mm
3	MAIN CONDENSER	500mm
4	ATMOSPHERIC TANK	300mm
TAPROGGE SYSTEM		
5	TAPROGGE SCREEN _ LOWER	80mm
6	TAPROGGE SCREEN _ UPPER	80mm
7	T2 SUCTION VALVES	80mm
8	T2 SUCTION VALVES	80mm
9	T2 SUCTION VALVES	80mm
10	T2 SUCTION VALVES	80mm
11	T2 SUCTION VALVES	80mm
12	T2 SUCTION VALVES	80mm
13	T2 SUCTION VALVES	80mm
14	T2 SUCTION VALVES	80mm
15	TAPROGGE ACCUMULATOR INL IV	100mm
16	TAPROGGE ACCUMULATOR OUTL IV	100mm
LP HEATER 3		
17	LPH 3 DRN PMP SUC STRAINER	300mm
18	LPH 3 DRN PMP SUC STRAINER	300mm

CONDENSATE EXTRACTION PUMP (CEP)&DA		
19	CLC(STROKE CHECK AND LEAK TEST TO BE WITNESS BY ENGINEER)	300mm
20	DLC	300mm
HP HEATERS		
21	HP HTR 5A (STEAM SIDE)	300mm
22	HP HTR 6A (STEAM SIDE)	300mm
23	HP HTR 5B (STEAM SIDE)	300mm
24	HP HTR 6B (STEAM SIDE)	300mm
CONDENSATE EXTRACTION PUMPS		
25	EXT P/P A 1ST STAGE DISCH NRV	400mm
26	EXT P/P B 1ST STAGE DISCH NRV	400mm
27	EXT P\ P 2ND STAGE DISCH NRV	400mm
28	EXT P\ P 2ND STAGE DISCH NRV	400mm
GSC AND DRAINS TANK (Non Valve)		
29	GLAND STEAM CONDENSER	800mm
30	DRAIN TANK	800mm
31	GSC DRAIN TANK DRN TO COND V\ V	25mm
SECONDARY CW SYSTEM (SCW)		
32	SEC CW (GEN)P\ P B DISCH IV	400mm
33	SEC CW (GEN) EXCESS RETURN V	400mm
34	SEC CW (GEN) EXCESS RETURN V IV	400mm
35	SEC CW (GEN) P/P A DISCH NRV	400mm
36	SEC CW (GEN) P/P A DISCH IV	400mm
37	SEC CW (GEN) P/P B DISCH NRV	400mm
38	SEC CW (GEN)P\ P B DISCH IV	400mm
BFPT SAE AIR VALVES		
39	BFPT SAE ISOLATING VALVE A	300mm
40	BFPT SAE AIR VALVES	300mm

41	BFPT SAE AIR VALVES	300mm
42	BFPT SAE AIR VALVES	300mm
43	MC/BFPT INTERCONNECTOR	300mm
44	BFPT CONDENSER LEVEL CONTROL VALVE	200mm
45	BFPT VACUUM BREAKER I/V	100mm
46	BFPT CDV SPRAY VALVE	50mm
47	BFPT CONDENSER LEVEL CONTROL VALVE	200mm
48	BFPT CONDENSER	400mm
SCW (EJECTOR SYSTEM)		
49	WAE A1 CW Inlet CTRL vlv	300mm
50	WAE B1 CW Inlet CTRL vlv	300mm
51	WAE B2 WTR INLET VALVE	300mm
52	WAE A2 CW Inlet CTRL vlv	300mm
53	WAE B2 CW Inlet CTRL vlv	300mm
54	WAE A1 CW INLET STRAINER	300mm
55	WAE B1 CW INLET STRAINER	300mm
56	WAE A2 CW INLET STRAINER	300mm
57	WAE B2 CW INLET STRAINER	300mm
58	WAE A1 SUCTION CNTRL V/V	250mm
59	WAE A2 SUCTION CONTROL V/V	250mm
60	WAE B1 SUCTION CONTROL V/V	250mm
61	WAE B2 SUCTION CNTRL VV	250mm
62	WAE A2 Bellow (2 off)	250mm
63	WAE A1 Bellow (2 off)	250mm
64	WAE B1 Bellow (2 off)	250mm
65	WAE B2 Bellow (2 off)	250mm
66	SEC CW (GEN) EXCESS RETURN VALVE	400mm
67	SEC CW (GEN) EXCESS RETURN ISOLATING VALVE	400mm

GLAND STEAM SYSTEM		
68	HP/IP DUMP VALVE	300mm
LP SPRAY COOLING SYSTEM		
69	LP SPRAY COOLING DUPLEX STRAINER	100mm
70	HP HTR 6A EMERG DRN/HOT COND CNTRL VALVE	300mm
71	HP HTR 6B EMERG DRN/HOT COND CNTRL VALVE	300mm
72	HP HTR 5B DRN TO DST CNTRL VALVE	300mm

A description of the maintenance scopes are as follow:

Arnot Power Station:

Arnot valve maintenance consists of 5 departments within the Arnot Eskom Maintenance department, namely; Auxiliary, Boiler, Turbine, Rigger-Shop and Workshop. All departments attend to call outs, planned/unplanned opportunity maintenance as well as breakdowns across all 6 units. Maintenance coverage is supplied throughout the duration of the signed and agreed task order from the client side (Eskom). This coverage is a 24/7, 365 days a year. The team needs to report to callouts within a specified duration of 45min during breakdowns as agreed by ERI and Eskom. Opportunity maintenance will be communicated and planned by the site team as per agreed SOW with the client (Eskom) to be executed for the planned duration opportunity. Project Leader (site manager) normally runs with the activities and report progress to the client (Eskom) as well as the Group Manger-Acting (ERI).

Scope as follows:

Maintenance on Valves, Pumps and Compressors is attended as follows;

- Valves Refurbishments (Strip, Inspect, Lap, Blue Seats and Assemble), Repacking of glands, Replacement of flange gaskets, and Replacement of complete valves, Compressor Refurbishments, Compressor replacements, Pipe flange gaskets replacements, Pump replacements and alignments.

Types of Valves to be worked on;

- Non Return Valves, Butterfly Valves, Isolating Valves, Stop Valves, Parallel Slide Valves, Wedge Valves, Globe Valves, Ball Valves, Control Valves, Non- Rising Spindle Wedge Valves, Safety Valves.

Camden Power Station:

Camden valve maintenance consists of 1 department within the Camden Eskom Maintenance department, namely; Turbine and Auxiliaries Maintenance. The department attends to call outs, planned/unplanned opportunity maintenance as well as breakdowns across all 8 units. Maintenance coverage is supplied throughout the duration of the signed and agreed task order from the client side (Eskom). This coverage is a 24/7, 365 days a year. The team needs to report to callouts within a specified duration of 45min during breakdowns as agreed by ERI and Eskom. Opportunity maintenance will be communicated and planned by the site team as per agreed SOW with the client (Eskom) to be executed for the planned duration opportunity. Project Leader (site manager) normally runs with the activities and report progress to the client (Eskom) as well as the Group Manger (ERI).

Maintenance on Valves and Pumps is attended as follows;

- Valves Refurbishments (Strip, Inspect, Lap, Blue Seats and Assemble), Repacking of glands, Replacement of flange gaskets, and Replacement of complete valves, Pipe flange gaskets replacements, Pump replacements and alignments.

Types of Valves to be worked on;

- Non Return Valves, Butterfly Valves, Isolating Valves, Stop Valves, Parallel Slide Valves, Wedge Valves, Globe Valves, Ball Valves, Control Valves, Non- Rising Spindle Wedge Valves, Safety Valves.

Duvha Power Station:

Duvha valve maintenance consists of 1 department within the Duvha Eskom Maintenance department, namely; Boiler and Turbine Auxiliaries. The department attend to call outs, planned/unplanned opportunity maintenance as well as breakdowns across all 6 units. Maintenance coverage is supplied throughout the duration of the signed and agreed task order from the client side (Eskom). This coverage is a 24/7, 365 days a year. The team needs to report to callouts within a specified duration of 45min during breakdowns as

agreed by ERI and Eskom. Opportunity maintenance will be communicated and planned by the site team as per agreed SOW with the client (Eskom) to be executed for the planned duration opportunity. Project Leader (site manager) normally runs with the activities and report progress to the client (Eskom) as well as the Group Manger (ERI).

Maintenance on Valves and Pumps is attended as follows;

- Valves Refurbishments (Strip, Inspect, Lap, Blue Seats and Assemble), Repacking of glands, Replacement of flange gaskets, and Replacement of complete valves, Pipe flange gaskets replacements, Pump replacements and alignments.

Types of Valves to be worked on;

- Non Return Valves, Butterfly Valves, Isolating Valves, Stop Valves, Parallel Slide Valves, Wedge Valves, Globe Valves, Ball Valves, Control Valves, Non- Rising Spindle Wedge Valves, Safety Valves.

Grootvlei Power Station:

Grootvlei valve maintenance consists of 1 department within the Grootvlei Eskom Maintenance department, namely; Boiler and Turbine Auxiliaries. The department attend to call outs, planned/unplanned opportunity maintenance as well as breakdowns across all 6 units. Maintenance coverage is supplied throughout the duration of the signed and agreed task order from the client side (Eskom). This coverage is a 24/7, 365 days a year. The team needs to report to callouts within a specified duration of 45min during breakdowns as agreed by ERI and Eskom. Opportunity maintenance will be communicated and planned by the site team as per agreed SOW with the client (Eskom) to be executed for the planned duration opportunity. Project Leader (site manager) normally runs with the activities and report progress to the client (Eskom) as well as the Group Manger (ERI).

Maintenance on Valves and Pumps is attended as follows;

- Valves Refurbishments (Strip, Inspect, Lap, Blue Seats and Assemble), Repacking of glands, Replacement of flange gaskets, and Replacement of complete valves, Pipe flange gaskets replacements, Pump replacements and alignments HPH vessel repairs, and Machining of valve components. i.e valve spindle, revolving nuts etc.

Types of Valves to be worked on;

- Non Return Valves, Butterfly Valves, Isolating Valves, Stop Valves, Parallel Slide Valves, Wedge Valves, Globe Valves, Ball Valves, Control Valves, Non- Rising Spindle Wedge Valves, Safety Valves.

Kendal Power Station:

Kendal valve maintenance consists of 1 department within the Kendal Eskom Maintenance department, namely; Boiler and Turbine Auxiliaries. The department attend to call outs, planned/unplanned opportunity maintenance as well as breakdowns across all 6 units. Maintenance coverage is supplied throughout the duration of the signed and agreed task order from the client side (Eskom). This coverage is a 24/7, 365 days a year. The team needs to report to callouts within a specified duration of 45min during breakdowns as agreed by ERI and Eskom. Opportunity maintenance will be communicated and planned by the site team as per agreed SOW with the client (Eskom) to be executed for the planned duration opportunity. Project Leader (site manager) normally runs with the activities and report progress to the client (Eskom) as well as the Group Manger (ERI).

Maintenance on Valves and Pumps is attended as follows;

- Valves Refurbishments (Strip, Inspect, Lap, Blue Seats and Assemble), Repacking of glands, Replacement of flange gaskets, and Replacement of complete valves, Pipe flange gaskets replacements, Pump replacements and alignments.

Types of Valves to be worked on;

- Non Return Valves, Butterfly Valves, Isolating Valves, Stop Valves, Parallel Slide Valves, Wedge Valves, Globe Valves, Ball Valves, Control Valves, Non- Rising Spindle Wedge Valves, Safety Valves.

Koeberg Power Station:

Koeberg valve maintenance consists of 1 department within the Koeberg Eskom Maintenance department, Secondary plant and auxiliaries (non-nuclear side). The department attend to call outs, planned/unplanned opportunity maintenance as well as breakdowns across all 6 units. Maintenance coverage is supplied throughout the duration of the signed and agreed task order from the client side (Eskom). This coverage is a 24/7, 365 days a year. The team needs to report to callouts within a specified duration of 45min

during breakdowns as agreed by ERI and Eskom. Opportunity maintenance will be communicated and planned by the site team as per agreed SOW with the client (Eskom) to be executed for the planned duration opportunity. Project Leader (site manager) normally runs with the activities and report progress to the client (Eskom) as well as the Group Manger (ERI).

Maintenance on Valves and Pumps is attended as follows;

- Valves Refurbishments (Strip, Inspect, Lap, Blue Seats and Assemble), Repacking of glands, Replacement of flange gaskets, and Replacement of complete valves, Pipe flange gaskets replacements, Pump replacements and alignments.

Types of Valves to be worked on;

- Non Return Valves, Butterfly Valves, Isolating Valves, Stop Valves, Parallel Slide Valves, Wedge Valves, Globe Valves, Ball Valves, Control Valves, Non- Rising Spindle Wedge Valves, Safety Valves.

Kriel Power Station:

Kriel valve maintenance consists of 4 departments within the Kriel Eskom Maintenance department, namely; Boiler, Compressor, Turbine and Water plant. All departments attend to call outs, planned/unplanned opportunity maintenance as well as breakdowns across all 6 units. Maintenance coverage is supplied throughout the duration of the signed and agreed task order from the client side (Eskom). This coverage is a 24/7, 365 days a year. The team needs to report to callouts within a specified duration of 45min during breakdowns as agreed by ERI and Eskom. Opportunity maintenance will be communicated and planned by the site team as per agreed SOW with the client (Eskom) to be executed for the planned duration opportunity. Project Leader (site manager) normally runs with the activities and report progress to the client (Eskom) as well as the Group Manger (ERI).

Maintenance on Valves, Pumps and Compressors is attended as follows;

- Valves Refurbishments (Strip, Inspect, Lap, Blue Seats and Assemble), Repacking of glands, Replacement of flange gaskets, and Replacement of complete valves, Compressor Refurbishments, Compressor replacements, Pipe flange gaskets replacements, Pump replacements and alignments.

Types of Valves to be worked on;

- Non Return Valves, Butterfly Valves, Isolating Valves, Stop Valves, Parallel Slide Valves, Wedge Valves, Globe Valves, Ball Valves, Control Valves, Non- Rising Spindle Wedge Valves, Safety Valves.

Kusile Power Station:

Kusile valve maintenance consists of 1 department within the Kusile Eskom Maintenance department, namely; Boiler and Turbine Auxiliaries. The department attend to call outs, planned/unplanned opportunity maintenance as well as breakdowns across all 6 units. Maintenance coverage is supplied throughout the duration of the signed and agreed task order from the client side (Eskom). This coverage is a 24/7, 365 days a year. The team needs to report to callouts within a specified duration of 45min during breakdowns as agreed by ERI and Eskom. Opportunity maintenance will be communicated and planned by the site team as per agreed SOW with the client (Eskom) to be executed for the planned duration opportunity. Project Leader (site manager) normally runs with the activities and report progress to the client (Eskom) as well as the Group Manger (ERI).

Maintenance on Valves and Pumps is attended as follows;

- Valves Refurbishments (Strip, Inspect, Lap, Blue Seats and Assemble), Repacking of glands, Replacement of flange gaskets, and Replacement of complete valves, Pipe flange gaskets replacements, Pump replacements and alignments, Turbine Auxiliaries.

Types of Valves to be worked on;

- Non Return Valves, Butterfly Valves, Isolating Valves, Stop Valves, Parallel Slide Valves, Wedge Valves, Globe Valves, Ball Valves, Control Valves, Non- Rising Spindle Wedge Valves, Safety Valves.

Medupi Power Station:

Medupi valve maintenance consists of 1 department within the Medupi Eskom Maintenance department, namely; Boiler and Turbine Auxiliaries. The department attend to call outs, planned/unplanned opportunity maintenance as well as breakdowns across all 6 units. Maintenance coverage is supplied throughout the duration of the signed and agreed task order from the client side (Eskom). This coverage is a 24/7, 365 days a year.

The team needs to report to callouts within a specified duration of 45min during breakdowns as agreed by ERI and Eskom. Opportunity maintenance will be communicated and planned by the site team as per agreed SOW with the client (Eskom) to be executed for the planned duration opportunity. Project Leader (site manager) normally runs with the activities and report progress to the client (Eskom) as well as the Group Manger (ERI).

Maintenance on Valves and Pumps is attended as follows;

- Valves Refurbishments (Strip, Inspect, Lap, Blue Seats and Assemble), Repacking of glands, Replacement of flange gaskets, and Replacement of complete valves, Pipe flange gaskets replacements, Pump replacements and alignments, Turbine Auxiliaries.

Types of Valves to be worked on;

- Non Return Valves, Butterfly Valves, Isolating Valves, Stop Valves, Parallel Slide Valves, Wedge Valves, Globe Valves, Ball Valves, Control Valves, Non- Rising Spindle Wedge Valves, Safety Valves.

Tutuka Power Station:

Tutuka valve maintenance consists of 1 department within the Tutuka Eskom Maintenance department, namely; Boiler and Turbine Auxiliaries. The department attend to call outs, planned/unplanned opportunity maintenance as well as breakdowns across all 6 units. Maintenance coverage is supplied throughout the duration of the signed and agreed task order from the client side (Eskom). This coverage is a 24/7, 365 days a year. The team needs to report to callouts within a specified duration of 45min during breakdowns as agreed by ERI and Eskom. Opportunity maintenance will be communicated and planned by the site team as per agreed SOW with the client (Eskom) to be executed for the planned duration opportunity. Project Leader (site manager) normally runs with the activities and report progress to the client (Eskom) as well as the Group Manger (ERI).

Maintenance on Valves and Pumps is attended as follows;

- Valves Refurbishments (Strip, Inspect, Lap, Blue Seats and Assemble), Repacking of glands, Replacement of flange gaskets, and Replacement of complete valves, Pipe flange gaskets replacements, Pump replacements and alignments, Turbine Auxiliaries.

Types of Valves to be worked on;

- Non Return Valves, Butterfly Valves, Isolating Valves, Stop Valves, Parallel Slide Valves, Wedge Valves, Globe Valves, Ball Valves, Control Valves, Non- Rising Spindle Wedge Valves, Safety Valves.

Lethabo Power Station:

Lethabo valve maintenance consists of 1 department within the Lethabo Eskom Maintenance department, namely; Boiler and Turbine Auxiliaries. The department attend to call outs, planned/unplanned opportunity maintenance as well as breakdowns across all 6 units. Maintenance coverage is supplied throughout the duration of the signed and agreed task order from the client side (Eskom). This coverage is a 24/7, 365 days a year. The team needs to report to callouts within a specified duration of 45min during breakdowns as agreed by ERI and Eskom. Opportunity maintenance will be communicated and planned by the site team as per agreed SOW with the client (Eskom) to be executed for the planned duration opportunity. Project Leader (site manager) normally runs with the activities and report progress to the client (Eskom) as well as the Group Manger (ERI).

Maintenance on Valves and Pumps is attended as follows;

- Valves Refurbishments (Strip, Inspect, Lap, Blue Seats and Assemble), Repacking of glands, Replacement of flange gaskets, and Replacement of complete valves, Pipe flange gaskets replacements, Pump replacements and alignments HPH vessel repairs, and Machining of valve components. i.e valve spindle, revolving nuts etc.

Types of Valves to be worked on;

- Non Return Valves, Butterfly Valves, Isolating Valves, Stop Valves, Parallel Slide Valves, Wedge Valves, Globe Valves, Ball Valves, Control Valves, Non- Rising Spindle Wedge Valves, Safety Valves.

Matla Power Station:

Matla valve maintenance consists of 1 department within the Matla Eskom Maintenance department, namely; Boiler and Turbine Auxiliaries. The department attend to call outs, planned/unplanned opportunity maintenance as well as breakdowns across all 6 units. Maintenance coverage is supplied throughout the duration of the signed and agreed task order from the client side (Eskom). This coverage is a 24/7, 365 days a year. The team needs to report to callouts within a specified duration of 45min during breakdowns as agreed by ERI and Eskom. Opportunity maintenance will be communicated and planned by the site team as per agreed SOW with the client (Eskom) to be executed for the planned duration opportunity. Project Leader (site manager) normally runs with the activities and report progress to the client (Eskom) as well as the Group Manger (ERI).

Maintenance on Valves and Pumps is attended as follows;

- Valves Refurbishments (Strip, Inspect, Lap, Blue Seats and Assemble), Repacking of glands, Replacement of flange gaskets, and Replacement of complete valves, Pipe flange gaskets replacements, Pump replacements and alignments HPH vessel repairs, and Machining of valve components. i.e valve spindle, revolving nuts etc.

Types of Valves to be worked on;

- Non Return Valves, Butterfly Valves, Isolating Valves, Stop Valves, Parallel Slide Valves, Wedge Valves, Globe Valves, Ball Valves, Control Valves, Non- Rising Spindle Wedge Valves, Safety Valves.

Manpower Estimates for Outages (based on historical data)

Please note the below estimate manpower figures based on historical data for all outages:

Station	Unit	Planned Start Date	Planned End date	Outage Description	Planned Outage Duration	Planned description	Duration	Supervisor	QC	Fitter	General worker	Storeman	Safety Coach	Clerk	Rigger	Total Staff numbers
Camden	6	2026/10/10	2027/02/03	GO	117.00	Work execution	96	4	4	50	45	1	2	1	2	109
						Commissioning	21	1	1	6	5	1	1	1	1	17
Camden	8	2026/10/16	2027/01/13	GO	90.00	Work execution	69	4	4	45	45	1	2	1	2	104
						Commissioning	21	1	1	6	5	1	1	1	1	17
Camden	5	2026/10/17	2026/11/12	HSSD	27.00	Work execution	25	6	4	60	60	3	3	1	6	143
						Commissioning	7	6	3	24	24	3	3	1	6	70
Camden	7	2026/10/19	2026/11/14	HSSD	27.00	Work execution	25	6	4	60	60	3	3	1	6	143
						Commissioning	7	6	3	24	24	3	3	1	6	70
Camden	2	2027/03/16	2027/06/13	GO	90.00	Work execution	69	4	4	50	45	1	2	1	2	109
						Commissioning	21	1	1	6	5	1	1	1	1	17
Camden	5	2027/07/18	2027/10/15	GO	90.00	Work execution	69	4	4	45	45	1	2	1	2	104
						Commissioning	21	1	1	6	5	1	1	1	1	17
Camden	3	2027/11/22	2028/02/19	GO	90.00	Work execution	69	4	4	45	45	1	2	1	2	104
						Commissioning	21	1	1	6	5	1	1	1	1	17
Drakensberg	2	2027/03/08	2027/06/06	GO	90.00	Work execution	69	8	4	55	50	3	3	1	4	128
						Commissioning	21	2	0	6	3	1	1	1	1	15
Drakensberg	1	2027/04/19	2027/07/18	GO	90.00	Work execution	69	8	4	50	50	3	3	1	4	123
						Commissioning	21	2	0	6	3	1	1	1	1	15
Duvha	2	2026/10/05	2026/12/08	IR	65.00	Work execution	51	4	4	40	40	1	2	1	2	94
						Commissioning	14	2	2	8	8	1	1	1	1	24
Duvha	5	2026/12/08	2026/12/28	IN	21.00	Work execution	14	4	4	40	40	1	2	1	2	94
						Commissioning	7	2	2	8	8	1	1	1	1	24
Duvha	1	2026/12/17	2027/03/23	MGO	97.00	Work execution	76	6	5	64	64	1	3	1	4	148
						Commissioning	21	3	2	13	11	1	1	1	1	33
Duvha	6	2027/01/09	2027/03/09	IR	60.00	Work execution	46	4	4	40	40	1	2	1	2	94
						Commissioning	14	2	2	8	8	1	1	1	1	24
Duvha	4	2027/03/07	2027/04/25	GO	50.00	Work execution	36	6	5	64	64	1	3	1	4	148
						Commissioning	14	3	2	13	11	1	1	1	1	33
Duvha	6	2028/03/15	2028/04/04	IN	21.00	Work execution	14	4	4	40	40	1	2	1	2	94
						Commissioning	7	2	2	8	8	1	1	1	1	24
Duvha	2	2028/05/08	2028/05/28	IN	21.00	Work execution	14	4	4	40	40	1	2	1	2	94
						Commissioning	7	2	2	8	8	1	1	1	1	24
Duvha	2	2029/03/24	2029/05/27	GO	65.00	Work execution	51	6	5	64	64	1	3	1	4	148
						Commissioning	14	3	2	13	11	1	1	1	1	33
Duvha	1	2029/06/19	2029/07/09	IN	21.00	Work execution	14	4	4	40	40	1	2	1	2	94
						Commissioning	7	2	2	8	8	1	1	1	1	24
Duvha	6	2029/08/14	2029/11/11	MGO	90.00	Work execution	69	6	5	68	64	1	3	1	4	152
						Commissioning	21	3	2	13	11	1	1	1	1	33
Duvha	5	2029/08/29	2029/09/18	IN	21.00	Work execution	14	4	4	40	40	1	2	1	2	94
						Commissioning	7	2	2	8	8	1	1	1	1	24
Duvha	2	2029/09/10	2029/10/14	IR	35.00	Work execution	28	4	4	40	40	1	2	1	2	94
						Commissioning	7	2	2	8	8	1	1	1	1	24
Duvha	1	2030/02/11	2030/03/03	IN	21.00	Work execution	14	4	4	40	40	1	2	1	2	94
						Commissioning	7	2	2	8	8	1	1	1	1	24
GrootMei	2	2026/11/11	2026/12/10	GO	30.00	Work execution	23	6	4	60	60	1	2	1	2	136
						Commissioning	7	2	2	8	8	1	1	1	1	24
GrootMei	3	2027/02/10	2027/03/31	MGO	50.00	Work execution	36	6	4	50	50	1	2	1	2	116
						Commissioning	14	2	2	8	8	1	1	1	1	24
GrootMei	1	2027/04/10	2027/05/09	IR	30.00	Work execution	23	4	4	40	40	1	2	1	2	94
						Commissioning	7	2	2	8	8	1	1	1	1	24
GrootMei	3	2027/07/21	2027/08/19	IR	30.00	Work execution	23	4	4	40	40	1	2	1	2	94
						Commissioning	7	2	2	8	8	1	1	1	1	24

Station	Unit	Planned Start Date	Planned End date	Outage Description	Planned Outage Duration	Planned description	Duration	Supervisor	QC	Fitter	General worker	Storeman	Safety Coach	Clerk	Rigger	Total Staff numbers
Hendrina	2	2026/09/01	2026/12/04	GO	95.00	Work execution	74	6	3	55	50	1	3	1	2	121
						Commissioning	21	3	1	6	6	1	1	1	1	20
Hendrina	4	2026/12/18	2027/02/07	MGO	52.00	Work execution	38	6	3	50	50	1	3	1	2	116
						Commissioning	14	3	1	6	6	1	1	1	1	20
Hendrina	7	2027/01/27	2027/02/23	IR	28.00	Work execution	21	4	4	40	40	1	2	1	2	94
						Commissioning	7	2	2	8	8	1	1	1	1	24
Hendrina	5	2027/04/03	2027/05/24	MGO	52.00	Work execution	38	6	3	50	50	1	3	1	2	116
						Commissioning	14	3	1	6	6	1	1	1	1	20
Hendrina	10	2027/09/01	2027/10/22	MGO	52.00	Work execution	38	6	3	50	50	1	3	1	2	116
						Commissioning	14	3	1	6	6	1	1	1	1	20
Hendrina	7	2027/11/03	2027/11/30	IR	28.00	Work execution	21	4	4	40	40	1	2	1	2	94
						Commissioning	7	2	2	8	8	1	1	1	1	24
Hendrina	6	2027/12/15	2028/01/11	IR	28.00	Work execution	21	4	4	40	40	1	2	1	2	94
						Commissioning	7	2	2	8	8	1	1	1	1	24
Hendrina	2	2028/03/04	2028/03/31	IN	28.00	Work execution	21	4	4	40	40	1	2	1	2	94
						Commissioning	7	2	2	8	8	1	1	1	1	24
Hendrina	4	2028/09/18	2028/10/15	IN	28.00	Work execution	21	4	4	40	40	1	2	1	2	94
						Commissioning	7	2	2	8	8	1	1	1	1	24
Hendrina	5	2028/11/03	2028/11/30	IN	28.00	Work execution	21	4	4	40	40	1	2	1	2	94
						Commissioning	7	2	2	8	8	1	1	1	1	24
Hendrina	10	2029/01/04	2029/01/31	IN	28.00	Work execution	21	4	4	40	40	1	2	1	2	94
						Commissioning	7	2	2	8	8	1	1	1	1	24
Hendrina	7	2029/02/28	2029/03/27	IN	28.00	Work execution	21	4	4	40	40	1	2	1	2	94
						Commissioning	7	2	2	8	8	1	1	1	1	24
Kendal	1	2026/09/26	2027/02/22	GO	150.00	Work execution	129	6	5	65	65	1	2	1	4	149
						Commissioning	21	3	1	12	12	1	1	1	1	32
Kendal	6	2026/11/27	2027/01/11	IR	46.00	Work execution	32	4	3	60	60	1	2	1	2	133
						Commissioning	14	3	1	8	8	1	1	1	1	24
Kendal	2	2027/03/18	2027/05/02	IR	46.00	Work execution	32	4	3	60	60	1	2	1	2	133
						Commissioning	14	3	1	8	8	1	1	1	1	24
Kendal	5	2027/03/31	2027/05/04	IR	35.00	Work execution	28	4	3	60	60	1	2	1	2	133
						Commissioning	7	3	1	8	8	1	1	1	1	24
Kendal	4	2027/12/27	2028/01/31	IR	35.00	Work execution	28	4	3	60	60	1	2	1	2	133
						Commissioning	7	3	1	8	8	1	1	1	1	24
Kendal	3	2028/05/15	2028/08/10	IR	88.00	Work execution	74	4	3	65	60	1	2	1	2	138
						Commissioning	14	3	1	8	8	1	1	1	1	24
Kendal	5	2028/09/10	2028/10/26	MGO	46.00	Work execution	32	6	5	65	65	1	2	1	4	149
						Commissioning	14	3	1	12	12	1	1	1	1	32
Kendal	6	2029/01/11	2029/02/26	MGO	46.00	Work execution	32	6	5	65	65	1	2	1	4	149
						Commissioning	14	3	1	12	12	1	1	1	1	32
Kendal	1	2029/02/21	2029/03/27	IR	35.00	Work execution	28	4	3	60	60	1	2	1	2	133
						Commissioning	7	3	1	8	8	1	1	1	1	24
Kendal	2	2029/05/05	2029/06/19	MGO	46.00	Work execution	32	6	5	65	65	1	2	1	4	149
						Commissioning	14	3	1	12	12	1	1	1	1	32
Kendal	4	2030/01/31	2030/03/18	MGO	46.00	Work execution	32	6	5	65	65	1	2	1	4	149
						Commissioning	14	3	1	12	12	1	1	1	1	32
Kendal	1	2030/04/17	2030/07/14	GO	88.00	Work execution	74	4	3	60	60	1	2	1	4	135
						Commissioning	14	3	1	8	8	1	1	1	1	24

Station	Unit	Planned Start Date	Planned End date	Outage Description	Planned Outage Duration	Planned description	Duration	Supervisor	QC	Fitter	General worker	Storeman	Safety Coach	Clerk	Rigger	Total Staff numbers	
Kriel	5	2026/10/02	2027/01/07	GO	98.00	Work execution	77	6	5	65	65	1	2	1	1	4	149
						Commissioning	21	3	1	12	12	1	1	1	1	1	32
Kriel	6	2027/04/24	2027/06/18	MGO	56.00	Work execution	42	4	3	55	55	1	2	1	1	4	125
						Commissioning	14	1	1	12	10	1	1	1	1	1	28
Kriel	4	2027/08/27	2027/12/02	GO	98.00	Work execution	77	6	5	65	65	1	2	1	1	4	149
						Commissioning	21	3	1	12	12	1	1	1	1	1	32
Kriel	3	2027/12/10	2028/02/04	MGO	57.00	Work execution	43	4	3	60	60	1	2	1	1	4	135
						Commissioning	14	2	1	12	10	1	1	1	1	1	29
Kriel	2	2028/01/08	2028/03/03	MGO	56.00	Work execution	42	4	3	65	60	1	2	1	1	4	140
						Commissioning	14	2	1	12	10	1	1	1	1	1	29
Kriel	1	2028/05/18	2028/08/24	GO	99.00	Work execution	78	6	5	65	65	1	2	1	1	4	149
						Commissioning	21	3	1	12	12	1	1	1	1	1	32
Kriel	5	2029/01/07	2029/03/03	MGO	56.00	Work execution	42	4	3	60	60	1	2	1	1	4	135
						Commissioning	14	2	1	12	10	1	1	1	1	1	29
Kriel	6	2029/06/18	2029/09/23	GO	98.00	Work execution	77	6	5	65	65	1	2	1	1	4	148
						Commissioning	21	3	1	12	12	1	1	1	1	1	32
Kriel	4	2029/12/02	2030/01/26	MGO	56.00	Work execution	42	4	3	60	60	1	2	1	1	4	135
						Commissioning	14	2	1	12	10	1	1	1	1	1	29
Kriel	3	2030/02/04	2030/03/31	MGO	57.00	Work execution	43	4	3	60	60	1	2	1	1	4	135
						Commissioning	14	2	1	12	10	1	1	1	1	1	29
Kriel	2	2030/05/22	2030/08/27	GO	58.00	Work execution	44	6	5	65	65	1	2	1	1	4	148
						Commissioning	14	3	1	12	12	1	1	1	1	1	32
Kusile	6	2026/10/17	2026/11/15	IN	30.00	Work execution	23	4	2	40	40	1	2	1	1	2	92
						Commissioning	7	2	1	9	9	1	1	1	1	1	25
Kusile	3	2027/01/02	2027/01/31	IN	30.00	Work execution	23	4	2	40	40	1	2	1	1	2	92
						Commissioning	7	2	1	9	9	1	1	1	1	1	25
Kusile	2	2027/03/08	2027/05/30	MGO	84.00	Work execution	63	6	2	45	40	1	2	1	1	4	101
						Commissioning	21	2	1	11	11	1	1	1	1	1	29
Kusile	1	2027/03/11	2027/04/09	IN	30.00	Work execution	23	4	2	40	40	1	2	1	1	2	92
						Commissioning	7	2	1	9	9	1	1	1	1	1	25
Kusile	4	2027/04/20	2027/06/03	IR	45.00	Work execution	31	4	2	40	40	1	2	1	1	2	92
						Commissioning	14	2	1	9	9	1	1	1	1	1	25
Kusile	5	2027/07/11	2027/08/09	IN	30.00	Work execution	23	4	2	40	40	1	2	1	1	2	92
						Commissioning	7	2	1	9	9	1	1	1	1	1	25
Kusile	6	2027/11/17	2027/12/16	IN	30.00	Work execution	23	4	2	40	40	1	2	1	1	2	92
						Commissioning	7	2	1	9	9	1	1	1	1	1	25
Kusile	3	2028/02/02	2028/03/02	IN	30.00	Work execution	23	4	2	40	40	1	2	1	1	2	92
						Commissioning	7	2	1	9	9	1	1	1	1	1	25
Kusile	1	2028/04/10	2028/05/24	IR	45.00	Work execution	31	4	2	40	40	1	2	1	1	2	92
						Commissioning	14	2	1	9	9	1	1	1	1	1	25
Kusile	4	2028/05/23	2028/06/21	IN	30.00	Work execution	23	4	2	40	40	1	2	1	1	2	92
						Commissioning	7	2	1	9	9	1	1	1	1	1	25
Kusile	2	2028/05/23	2028/06/21	IN	30.00	Work execution	23	4	2	40	40	1	2	1	1	2	92
						Commissioning	7	2	1	9	9	1	1	1	1	1	25
Kusile	5	2028/08/10	2028/09/24	IR	46.00	Work execution	32	4	2	40	40	1	2	1	1	2	92
						Commissioning	14	2	1	9	9	1	1	1	1	1	25
Kusile	6	2028/12/17	2029/01/30	IR	45.00	Work execution	31	4	2	40	40	1	2	1	1	2	92
						Commissioning	14	2	1	9	9	1	1	1	1	1	25
Kusile	4	2028/12/30	2029/01/29	IR	31.00	Work execution	24	4	2	40	40	1	2	1	1	2	92
						Commissioning	7	2	1	9	9	1	1	1	1	1	25
Kusile	3	2029/03/07	2029/05/30	MGO	85.00	Work execution	64	4	2	45	40	1	2	1	1	4	99
						Commissioning	21	2	1	11	11	1	1	1	1	1	29
Kusile	1	2029/05/26	2029/06/24	IN	30.00	Work execution	23	4	2	40	40	1	2	1	1	2	92
						Commissioning	7	2	1	9	9	1	1	1	1	1	25
Kusile	4	2029/06/28	2029/07/27	IN	30.00	Work execution	23	4	2	40	40	1	2	1	1	2	92
						Commissioning	7	2	1	9	9	1	1	1	1	1	25
Kusile	2	2029/06/29	2029/07/28	IN	30.00	Work execution	23	4	2	40	40	1	2	1	1	2	92
						Commissioning	7	2	1	9	9	1	1	1	1	1	25
Kusile	5	2029/09/27	2029/10/26	IN	30.00	Work execution	23	4	2	40	40	1	2	1	1	2	92
						Commissioning	7	2	1	9	9	1	1	1	1	1	25
Kusile	6	2030/02/01	2030/03/03	IN	31.00	Work execution	24	4	2	40	40	1	2	1	1	2	92
						Commissioning	7	2	1	9	9	1	1	1	1	1	25
Kusile	3	2030/05/31	2030/06/30	IN	31.00	Work execution	7	4	2	40	40	1	2	1	1	2	92
						Commissioning	24	2	1	9	9	1	1	1	1	1	25
Medupi	2	2026/09/01	2026/11/29	GO	90.00	Work execution	69	4	3	55	50	1	2	1	1	4	120
						Commissioning	21	2	1	9	9	1	1	1	1	1	25
Medupi	6	2027/01/11	2027/02/21	IR	42.00	Work execution	28	4	2	50	50	1	2	1	1	2	112
						Commissioning	14	2	1	7	7	1	1	1	1	1	21
Medupi	1	2027/03/08	2027/04/18	IR	42.00	Work execution	28	4	2	50	50	1	2	1	1	2	112
						Commissioning	14	2	1	7	7	1	1	1	1	1	21
Medupi	5	2027/05/06	2027/06/16	IR	42.00	Work execution	28	4	2	50	50	1	2	1	1	2	112
						Commissioning	14	2	1	7	7	1	1	1	1	1	21
Medupi	4	2027/08/10	2027/09/20	IR	42.00	Work execution	28	4	2	50	50	1	2	1	1	2	112
						Commissioning	14	2	1	7	7	1	1	1	1	1	21
Medupi	5	2027/11/16	2029/04/14	IR	150.00	Work execution	100	4	2	60	50	1	2	1	1	2	122
						Commissioning	30	2	1	9	9	1	1	1	1	1	21
Medupi	6	2028/01/20	2028/03/01	IR	42.00	Work execution	28	4	2	50	50	1	2	1	1	2	112
						Commissioning	14	2	1	7	7	1	1	1	1	1	21
Medupi	2	2028/03/05	2028/04/15	IR	42.00	Work execution	28	4	2	50	50	1	2	1	1	2	112
						Commissioning	14	2	1	7	7	1	1	1	1	1	21
Medupi	3	2028/04/28	2028/06/08	IR	42.00	Work execution	28	4	2	50	50	1	2	1	1	2	112
						Commissioning	14	2	1	7	7	1	1	1	1	1	21
Medupi	1	2028/08/10	2028/11/07	GO	90.00	Work execution	69	4	3	50	50	1	2	1	1	4	115
						Commissioning	21	2	1	9	9	1	1	1	1	1	21
Medupi	4	2029/04/20	2029/05/31	IR	42.00	Work execution	28	4	2	40	40	1	2	1	1	2	92
						Commissioning	14	2	1	7	7	1	1	1	1	1	21
Medupi	3	2029/07/15	2029/08/25	IR	42.00	Work execution	28	4	2	40	40	1	2	1	1	2	92
						Commissioning	14	2	1	7	7	1	1	1	1	1	21
Medupi	2	2029/09/12	2029/12/10	IR	90.00	Work execution	69	4	2								

Station	Unit	Planned Start Date	Planned End Date	Outage Description	Planned Outage Duration	Planned description	Duration	Supervisor	QC	Fitter	General worker	Storeman	Safety Coach	Clerk	Rigger	Total Staff number
Amot	5	2027/02/17	2027/04/09	IR	52.00	Work execution	38	4	4	28	28	1	2	1	2	70
						Commissioning	14	3	2	8	8	1	1	1	1	25
Amot	6	2027/07/05	2027/09/28	MGO	86.00	Work execution	65	6	5	64	64	1	2	1	4	147
						Commissioning	21	3	2	13	11	1	1	1	1	33
Amot	3	2027/09/20	2027/12/24	GO	96.00	Work execution	75	6	5	64	64	1	2	1	4	147
						Commissioning	21	3	2	13	11	1	1	1	1	33
Amot	2	2028/01/06	2028/03/31	MGO	86.00	Work execution	65	6	5	64	64	1	2	1	4	147
						Commissioning	21	3	2	13	11	1	1	1	1	33
Amot	4	2028/08/24	2028/11/17	MGO	86.00	Work execution	65	6	5	64	64	1	2	1	4	147
						Commissioning	21	3	2	13	11	1	1	1	1	33
Amot	1	2029/07/24	2029/10/17	MGO	86.00	Work execution	65	6	5	64	64	1	2	1	4	147
						Commissioning	21	3	2	13	11	1	1	1	1	33
Amot	5	2030/01/30	2030/04/25	MGO	86.00	Work execution	65	6	5	64	64	1	2	1	4	147
						Commissioning	21	3	2	13	11	1	1	1	1	33
Lethabo	3	2027/02/04	2027/06/03	MGO	120.00	Work execution	99	4	2	68	64	1	2	1	4	146
						Commissioning	21	2	1	5	4	1	1	1	1	16
Lethabo	4	2027/08/09	2027/12/16	MGO	130.00	Work execution	109	4	2	64	64	1	2	1	4	142
						Commissioning	21	2	1	5	4	1	1	1	1	16
Lethabo	5	2027/08/09	2027/12/16	MGO	130.00	Work execution	109	4	2	64	64	1	2	1	4	142
						Commissioning	21	2	1	5	4	1	1	1	1	16
Lethabo	6	2027/08/09	2028/01/05	IR	150.00	Work execution	120	4	2	64	64	1	2	1	4	142
						Commissioning	30	2	1	5	4	1	1	1	1	16
Lethabo	2	2028/02/07	2028/07/05	IR	150.00	Work execution	120	4	2	64	64	1	2	1	4	142
						Commissioning	30	2	1	5	4	1	1	1	1	16
Lethabo	1	2028/09/11	2029/02/07	IR	150.00	Work execution	120	4	2	64	64	1	2	1	4	142
						Commissioning	30	2	1	5	4	1	1	1	1	16
Lethabo	3	2029/02/05	2029/03/26	IR	50.00	Work execution	36	4	2	64	64	1	2	1	4	142
						Commissioning	14	2	1	5	4	1	1	1	1	16
Lethabo	5	2029/08/06	2030/01/02	MGO	150.00	Work execution	120	4	2	64	64	1	2	1	4	142
						Commissioning	30	2	1	5	4	1	1	1	1	16
Lethabo	4	2029/08/06	2030/01/02	GO	84.00	Work execution	70	6	5	64	64	1	2	1	4	147
						Commissioning	14	3	2	13	11	1	1	1	1	33
Lethabo	6	2029/08/06	2030/01/02	IR	50.00	Work execution	36	4	2	64	64	1	2	1	4	142
						Commissioning	14	2	1	5	4	1	1	1	1	16
Matla	2	2026/11/20	2026/12/07	IR	18.00	Work execution	19	4	2	64	64	1	2	1	4	142
						Commissioning	15	2	1	5	4	1	1	1	1	16
Matla	5	2027/03/21	2027/04/07	IR	18.00	Work execution	11	4	2	64	64	1	2	1	4	142
						Commissioning	7	2	1	5	4	1	1	1	1	16
Matla	1	2027/06/13	2027/08/31	GO	80.00	Work execution	66	6	5	68	64	1	2	1	4	151
						Commissioning	14	3	2	13	11	1	1	1	1	33
Matla	3	2027/12/04	2028/01/17	MGO	45.00	Work execution	36	6	5	64	64	1	2	1	4	147
						Commissioning	7	3	2	13	11	1	1	1	1	33
Matla	4	2027/12/08	2027/12/25	IR	18.00	Work execution	11	4	2	64	64	1	2	1	4	142
						Commissioning	7	2	1	5	4	1	1	1	1	16
Matla	6	2028/01/04	2028/02/17	MGO	45.00	Work execution	36	6	5	64	64	1	2	1	4	147
						Commissioning	7	3	2	13	11	1	1	1	1	33
Matla	6	2028/02/12	2028/02/29	IR	18.00	Work execution	11	4	2	64	64	1	2	1	4	142
						Commissioning	7	2	1	5	4	1	1	1	1	16
Matla	2	2028/05/22	2028/07/05	MGO	45.00	Work execution	36	6	5	64	64	1	2	1	4	147
						Commissioning	7	3	2	13	11	1	1	1	1	33
Matla	5	2028/10/08	2028/11/21	MGO	45.00	Work execution	36	6	5	64	64	1	2	1	4	147
						Commissioning	7	3	2	13	11	1	1	1	1	33
Matla	1	2029/02/16	2029/03/05	IR	18.00	Work execution	11	4	2	64	64	1	2	1	4	142
						Commissioning	7	2	1	5	4	1	1	1	1	16
Matla	4	2029/06/22	2029/08/05	MGO	45.00	Work execution	36	6	5	64	64	1	2	1	4	147
						Commissioning	7	3	2	13	11	1	1	1	1	33
Matla	6	2029/09/01	2029/10/15	MGO	45.00	Work execution	36	6	5	64	64	1	2	1	4	147
						Commissioning	7	3	2	13	11	1	1	1	1	33
Matla	2	2030/01/11	2030/01/28	IR	18.00	Work execution	11	4	2	64	64	1	2	1	4	142
						Commissioning	7	2	1	5	4	1	1	1	1	16
Matla	5	2030/05/22	2030/06/08	IR	18.00	Work execution	11	4	2	64	64	1	2	1	4	142
						Commissioning	7	2	1	5	4	1	1	1	1	16
Koeberg	2	2027/08/30	2027/10/04	GO	35.00	Work execution	21	6	5	64	64	1	3	1	4	148
						Commissioning	14	3	2	13	11	1	1	1	1	33
Koeberg	1	2028/05/22	2028/07/21	GO	60.00	Work execution	46	6	5	64	64	1	3	1	4	148
						Commissioning	14	3	2	13	11	1	1	1	1	33
Koeberg	2	2029/03/12	2029/05/11	GO	60.00	Work execution	46	6	5	64	64	1	3	1	4	148
						Commissioning	14	3	2	13	11	1	1	1	1	33
Koeberg	1	2030/01/07	2030/02/11	GO	35.00	Work execution	28	6	5	64	64	1	3	1	4	148
						Commissioning	7	3	2	13	11	1	1	1	1	33

General Requirements

Quality

- Inspections to be carried out in accordance with check sheets and master quality plan provided by ERI in line with the Eskom requirements, which should be compiled from the Scope of Work (SOW) and approved by Engineering (Eskom and ERI TGS). The document must contain all the Product Quality Plans (PQP's) of work that will be done on site and off site. Disassembly and assembly values to be recorded for all check sheets. Repair or replace all damaged/worn components out of specification or obtain a concession from engineering staff. All abnormalities to be recorded and reported with Technical Notifications (TNs).
- All work carried out will be in line with the applicable ESKOM standards. Where nothing exists, good engineering practise will be followed. This includes but is not limited to the covering of all openings and the use of approved chemicals.
- All quality documents, procedures, check sheets and PQP to be supplied by ERI TGS
- Contractor is given at least 1 month for preparation unless a shorter time is mutually agreed.

Experience of staff

- The service requested will determine the skill levels and number of specific skills that will be required to execute the service.
- The service provider will work together with the ERI TGS personnel to ensure the KPIs are achieved.
- All staff shall be adequately qualified and competent of performing all work within safe and correct technical specifications.
- Short CV's of all specialists, engineers, supervisors, technicians, artisan, stating qualifications and relevant experience must be provided at least four weeks before commencement of outage.
- All standard tools and equipment identified during the preparation phase will be supplied by ERI TGS. All special tools required for the outage will be supplied by ERI TGS.

Spares

- All spares that would have been pre identified in the pre planning of the outage will be sourced and supplied by ERI.
- The refurbishment of spares during the outage execution will be carried out at ERI TGS workshops. The service provider will be expected to determine refurbishment scope for approval by the TGS engineering team.

- All Transport requirements for spares and components will be provided by ERI
- Some Employer's obligations are stated in the Scope of Work above and these will be detailed in the Plan

Documentation

- A full service report will be compiled and provided to Eskom and TGS in duplicate, to the ERI TGS standard. The report will contain a high level description of the work done during the refurbishment. It will contain the approved PQP of work on site and all related check sheets and NDE reports. All technical notifications will be shown as well. It will contain a section on spares used report.
- PQP to be compiled and presented to Engineering (Eskom and TGS) for approval before start of outage. Duplicate service report provided to the client within 14 days of the completion of the work. Report to be accepted by ERI TGS Engineering.

Responsibilities during outages

- It is required from the service provider to provide a full service for a planned outage (GO,MGO and IR/IN), of which the specific service required will be requested by ERI TGS. **The service provider will be expected to comply with the ERI TGS procedures and processes covering the following areas and ALL employees shall be evaluated on all the following:**
 - Quality Control procedures
 - Process Quality Plan development and management
 - Execution and Control of All Site Work 240-137025973
 - Management and Control of Tools in a Tool Store or a Container 240-125904456
 - PQP Workflow Assessment
 - Technical Notification Work Instruction
 - Contract Plan
 - Control of blanks and foreign material exclusion covers 240-94069330
 - Hydraulic equipment management and safe work procedures
 - Compilation of data books and service reports
 - Lifting equipment, machine and tackle safe work procedure 240-126606734
 - Check sheet management and control
 - Project Management process and control
 - Control of non-conformance/service and preventative actions
 - Coding and management of documentation
 - Disassembly & Installation of Blocking Devices Work Instruction 240-234T
 - Overhauling Bovieri Butterfly Valve Work Instruction 240-94067714
 - Overhauling Fisher Control Valve Work Instruction 240-94067716

- Overhauling Valves Hopkinson Non Return Valve Work Instruction 240-94067718
 - Overhauling Hopkinson Stop Valve Parallel Slide Work Instruction 240-94067720
 - Overhauling Sempell Non-Return Valve Work Instruction 240-94067726
 - Overhauling Sulzer Safety Valve Work Instruction 240-94067728
 - Overhauling Well and Tuxhorn Control Valve Work Instruction 240-94067734
 - Overhauling a Sempell Globe Isolating Valve Work Instruction 240-143698928
 - Execution and Control of all Valve Site Work Process Control Document Manual 240-144380417
- The service provider will be responsible for the quality of the work carried out as per service request and the technical success reporting through the ERI Site/Project Leader.
 - The service provider has a responsibility and duty to inform the Site/Project Leader of all daily activities including engineering commitments and responsibilities.
 - Provide Engineering proposals and alternative methods to optimise project plans towards achieving the project due dates (outages durations to be not more than 50 days)
 - Monitor the Project Programme and ensure milestone dates are met in order to achieve the contractual due dates.
 - Engineering Decision making and solutions to be effective, timeously and feasible.
 - All decisions that will impact on the time or cost of the project are to be communicated with the Outage Manager, and NO scope changes implemented unless an approved Compensation Event have been received.
 - Monitor technical process and progress of components throughout the outage cycle, from disassembly, through the Supplier and ensure that detailed inspections are carried out upon receipt or dispatching of all components
 - Focusing efforts on reducing technical risk and improving reliability through root cause identification and resolution
 - Ensuring the inclusion of ergonomic engineering, safety engineering and system engineering during all projects and compliance to all safety rules and regulations.
 - Ensure control processes in place utilising written instructions, quality plans, check sheets, deficiency and non-conformance reports.
 - Attend Post Contract Reviews and report on Technical issues
 - Ensure Service Reports are compiled
 - Verify & authorise service reports and data books
 - Issue recommendations
 - Scrutinize data books for compliance to specifications and completeness

Provide a Quality Engineering Service

- Ensure Quality Planning in accordance with scopes of work.
 - Ensure that the quality plans developed is in according to the scopes of work for acceptance by the Client.
 - Ensure quality plans are in sufficient detail in order to control the execution process and makes reference to relevant processes, procedures and specifications.
 - Check Sheets to be approved by the ERI Site/Project Leader and QC, ensuring that check sheets are correct, current and in accordance with documented OEM and/or Customer specifications.
 - Establish Internal Hold and Witness points on critical activities on the quality plans on site, and at Subcontractors, to be signed off by the client Engineer.
 - Ensure Quality plans are in place for Site and Subcontractors and Customer supplied items.
- Ensure Quality is controlled during execution
 - Ensure correct handling of PQP's and check sheets in accordance with company procedures.
 - Ensure that all work carried out will be in accordance with the approved quality plan.
 - Ensure adherence to quality through technical vigilance and good engineering practices, follow through on deviations reported to ensure corrective action implemented
- Ensure out of specification plant identified and corrective scopes recommended
 - Ensure initial fact finding results obtained and recommendation on corrective scopes of work are submitted in writing to the client technical representative to obtain Customer approval.
 - Out of specification sizes referred to the TGS Project/Site Leader and QC to be followed up with recommended scopes of work and technical notifications to Clients.
 - Technical notifications to be followed through and closed out.
- Ensure Quality Records available and utilised on site
 - Ensure work instructions, procedures, drawings and OEM manuals on site are utilised during execution
 - Give input to the development of new check sheets and Improvement of existing check sheets.

Comply With Safety Health Environment and Quality Requirements

- Comply with the Occupational Health and Safety Act and Rotek Engineering SHE System requirements

- Comply with the Eskom Plant Safety Regulations.
- Stop unsafe work activities and report to the Project / Site Manager for rectification
- Control and maintenance of ISO Quality system in accordance with the Business Management System in relation to this Job Function.
- Comply with policies, procedures and instructions.

ERI TGS Services

The following services will be provided by ERI TGS with support where applicable from the Eskom sites

- Rigging activities – The rigging manuals will be made available during outage activities.
- Crane Operation and control
- Scaffolding
- Insulation/lagging
- Cleaning services
- Tools issuing and control
- FME controls
- Transportation of components
- Workshop services

MINIMUM QUALIFICATION REQUIREMENTS

Resources assigned to the outage are to comply with the minimum qualification requirements below:

Supervisor – Technical	<ul style="list-style-type: none"> • Mechanical Fitting Trade Certificate and N3.
Artisan Fitter	<ul style="list-style-type: none"> • Fitter/Fitter & Turner Trade Qualification • Equivalent Fitter Qualification registered and recognised by the Government of RSA
Crane Driver	<ul style="list-style-type: none"> • N2 or Std 9 or ABET level 4 Maths and English. Relevant Crane Driving qualification/Certificate
Artisan Rigger	<ul style="list-style-type: none"> • Rigger Trade Test • Equivalent Rigger Qualification registered and recognised by the Government of RSA
Storeman	<ul style="list-style-type: none"> • Standard 10 or Grade 12 or ABET level 4
General Worker	<ul style="list-style-type: none"> • Grade 10
SHE Officer	<ul style="list-style-type: none"> • National Diploma – Safety Management or Environmental Management/Health (NQF 5) • Preferable Mechanical / Electrical or Civil engineering time served apprenticeship • Valid Code 08 (B) drivers' license

Assistant Officer – SHE	<ul style="list-style-type: none"> • Grade 12/N3 (NQF Level 4) • Driving Licence (code 08)
Technician Quality	<ul style="list-style-type: none"> • NTC6/S4 Diploma in Mechanical Engineering • Supervisory Qualification • SAQA Level 1 Quality Control Accreditation
Controller Quality Control	<ul style="list-style-type: none"> • SAQA Level 1 Quality Control Accreditation • SAQCC Visual Inspector Certification • Preferable Mechanical / Electrical or Civil engineering time served apprenticeship • Valid Code 08 (B) drivers' license

MINIMUM EXPERIENCE REQUIREMENTS

Resources assigned to the outage are to comply with the minimum experience requirements below:

Supervisor – Technical	<ul style="list-style-type: none"> • At least 3 years' experience on Turbine Generator plant and its auxiliaries. • At least 2 years supervision experience with strong organizational, interpersonal, communication & supervision skills with the ability to manage subordinates to achieve the required objective
Artisan Fitter	<ul style="list-style-type: none"> • 2 years relevant Post Qualification experience
Artisan Rigger	<ul style="list-style-type: none"> • 2 years relevant Post Qualification experience
Storeman	<ul style="list-style-type: none"> • 8 years experience related preferably to Turbo-Generator plant with formal training in TTQ-F-2.
General Worker	<ul style="list-style-type: none"> • Experiences in the cleaning and maintenance of the Yard, Workshops, Offices
SHE Officer	<ul style="list-style-type: none"> • Three years' work experience in Mechanical / Electrical / Civil Engineering & plant equipment. • Three Years' experience in Safety; Occupational Health and Environmental Field as a Safety officer
Assistant Officer – SHE	<ul style="list-style-type: none"> • One (1) year related experience in Safety
Technician Quality	<ul style="list-style-type: none"> • 5 Years previous Power Station projects and Technician with good Quality background
Controller Quality Control	<ul style="list-style-type: none"> • Three years' Related Experience in Inspections. • Metrology Inspection Methods

TRAINING REQUIREMENTS

Resources assigned to the outage are to comply with the minimum training requirements below:

Supervisor – Technical	20746251 - Precision measuring Basic rigging 240-144380417 - Execution and Control of All Site Work 240-125904456 - Management and control of tools in a tool store Basic supervisory certificate 240-96255977 & E-136 - Disciplinary and grievance procedure
------------------------	--

	<p>Safe operation of electrical equipment Hydraulic curriculum (Hytorc, Hiforce, etc) All Safety courses (SMAT, HIRA, etc) Flogging procedure 240-94069330 - FME procedure Lifting Machines and Lifting Tackles Safe Working Procedure 240-126606734</p>
Artisan Fitter	<p>20746251 - Precision measuring Basic rigging 240-144380417 - Execution and Control of All Site Work 240-125904456- Management and control of tools in a tool store 240-96255977 & E-136 - Disciplinary and grievance procedure Safe operation of electrical equipment Hydraulic curriculum (Hytorc, Hiforce, etc) All Safety courses (SMAT, HIRA, etc) Flogging procedure 240-94069330 - FME procedure Lifting Machines and Lifting Tackles Safe Working Procedure 240-126606734</p>
Artisan Rigger	<p>Basic rigging Lifting Machines and Lifting Tackles Safe Working Procedure 240-126606734 All Safety courses (SMAT, HIRA, etc) Rigging evaluation 240-94069330 - FME procedure</p>
Storeman	<p>Knowledge of tools and equipment 240-125904456 - Management and control of tools in a tool store All Safety courses (SMAT, HIRA, etc) 240-94069330 - FME procedure Lifting Machines and Lifting Tackles Safe Working Procedure 240-126606734</p>
General Worker	<p>All Safety courses (SMAT, HIRA, etc) Knowledge of tools and equipment 240-125904456- Management and control of tools in a tool store 240-94069330 - FME procedure Lifting Machines and Lifting Tackles Safe Working Procedure 240-126606734</p>
SHE Officer	<p>Three years' work experience in Mechanical / Electrical / Civil Engineering & plant equipment. Three Years' experience in Safety; Occupational Health and Environmental Field as a Safety officer Lifting Machines and Lifting Tackles Safe Working Procedure 240-126606734 240-94069330 - FME procedure</p>
Assistant Officer – SHE	<p>240-126606734 - Lifting working practices All Safety courses (SMAT, HIRA, etc) Flogging procedure 240-94069330 - FME procedure Lifting Machines and Lifting Tackles Safe Working Procedure 240-126606734</p>
Controller Quality Control	<p>20746251 - Precision measuring Basic rigging 240-144380417 - Execution and Control of All Site Work Management and control of tools in a toolstore 240-96255977 & E-136 - Disciplinary and grievance procedure Safe operation of electrical equipment Hydraulic curriculum (Hytorc, Hiforce, etc) All Safety courses (SMAT, HIRA, etc) Flogging procedure 240-94069330 - FME procedure Lifting Machines and Lifting Tackles Safe Working Procedure 240-126606734</p>

Additionally all Supervisors, Quality Controllers and Fitters must be trained and will be evaluated on the following procedures:

- 240-234T - Disassembly & Installation of Blocking Devices Work Instruction
- 240-94067734 - Overhauling Well and Tuxhorn Control Valve
- 240-94067728 - Overhauling Valves Sulzer Safety Services
- 240-94067726 - Overhauling Sempell Non-Return Valve Work Instruction
- 240-94067720 - Overhauling Hopkinson Stop Valve Parallel Slide
- 240-94067718 - Overhauling Hopkinson Non Return Valve
- 240-94067716 - Overhauling Fisher Control Valve
- 240-94067714 - Overhauling Bovieri Butterfly Valve Work Instruction
- 240-143698928 - Overhauling a Sempell Globe Isolating Valve

SHEQ REQUIREMENTS

All service providers are expected to comply with, but not limited to the following:

- Compliance with the Occupational Health and Safety Act 85 of 1993 is compulsory.
- Adherence to Quality Management System Policies, Procedures and related requirements of ISO 9001.
- Adherence to Occupational Health and Safety Policies, Procedures and related requirements of the OHSAS 18001.
- Adherence to environmental aspects, related impacts and legal requirements associated with work activities in accordance with ISO 14001.
- Adherence to Life Saving Rules.
- Compliance with the Eskom Plant Safety Regulations.
- Only authorised documents and processes are to be used in the execution of duties.
- Continuously seek methods for improvements from a process, quality and safety perspective.
- Obey all instructions.

- Familiarize with:
 - The applicable work instructions and procedures in place.
 - Safe working conditions and procedures.
 - All legal and contractual requirements.
 - Discipline and integrity.

- Compliance to all ERI Work Instructions, processes, procedures, and standards

- Adherence to ERI's disciplinary code or practice.
- Set example to co-workers and others.
- Participate in Risk Assessments.
- Responsible for own safety.
- Responsible for Personal Protective Equipment issued.
- Execute duties promptly and safely.
- Safeguard tools and safety equipment issued.
- Keep good relationship with all personnel.
- Compile a HIRA for each and every activity that needs to be performed.
- Ensure the activities are carried out following a Works Instructions and Procedure.
- Adhere to clean condition policy where required.
- All activities to be carried out as per the documented processes and comply with the requirements of ISO and OHSAS certification
- Service provider to comply to Eskom PPE (Personal Protective Equipment) Policy with regards to issuing of PPE to resources
- Proper use of PPE to be followed
- Ensure that tools and equipment are stored correctly in a safe place

KEY DELIVERABLES

The following deliverables are to be met by the service provider:

During the project duration:

- No customer complaints
- Compliance to all ERI Work Instructions, processes, procedures, and standards
- No SHEQ incidents
- Project Milestones are to be achieved on time, or earlier

During reassembly:

- Reassembly of components to be within specification
- Commissioning of systems effectively

Key Performance Indicators (KPI's) for Services Contracts			Targets					Final Weighting (Percentage)
Item No.	Description of KPI	Source document	0% (Target)	25% (Target)	50% (Target)	75% (Target)	100% (Target)	
Outage Readiness								
1	Percentage of Resources Assigned to an Outage prior to the Outage Starting Date (1 months before the outage) Average percentage for all outages will be calculated. Once resources are promised/committed, these resources must be available at the time of execution. (Specific to Execution Resources.)	Resource allocation list from supplier	60% of Resources Assigned	70% of Resources Assigned	80% of Resources Assigned	90% of Resources Assigned	100% of Resources Assigned	5%
2	SHE File approved by Eskom prior to start date of outage (number of days prior to outage start date)	SHE file	0	-1	-2	-3	-4	10%
3	All resources PPE issued to resources prior to outage start date (number of days prior to outage start date)	PPE allocation list from supplier	0	-1	-2	-3	-4	5%
4	Orientation and induction completed prior to outage start date. Company policies, HR processes, project scope and schedule clarification to be included in orientation and induction (number of days prior to outage start date)	Attendance register from supplier	0	-1	-2	-3	-4	5%
5	POE's are supplied and approved prior to outage start date (number of days prior to outage start date)	Summary sheet to be provided by the supplier	0	-1	-2	-3	-4	5%
Safety								
5	No LTI's - zero injuries on all projects. Number of LTI's for all outages falling within the assessment period will be tracked. (Lagging Indicator) If the number is above zero, then the KPI is not achieved, and zero target percentage will be obtained. If the number is zero, 100% target percentage will be achieved.	INO and flash reports	>0	N/A	N/A	N/A	0	15%
6	Number of SHE reps allocated to the outage and maintenance sites (average number of SHE reps per site, split between maintenance and projects)	Appointment letters of SHE reps	N/A	0	1	2	3	5%
7	No environmental issues on all projects and maintenance sites. Number of environmental incidents for all outages falling within the assessment period will be tracked (lagging Indicator). If the number is above zero, then the KPI is not achieved, and zero target percentage will be obtained. If the number is zero, 100% target percentage will be achieved.	INO and flash reports	>0	N/A	N/A	N/A	0	5%
8	Number of RP's allocated to the outage and maintenance sites (average number of RP's reps per site, split between maintenance and projects)	Appointment letters of RP's	N/A	0	1	2	3	5%
HR, IR and Cost								
8	Guest house audits - weekly inspections of guesthouses by the supplier. Guesthouse audits to be contacted and proof of audit to be provided by the supplier and signed off by the supplier and the guesthouse owner/manager.	Audit list from the supplier	80%	85%	90%	95%	100%	5%
9	No Salary and IR related issues raised on site. Supplier to ensure such issues are addressed weekly during their visits atleast once a week. Issues carrying over to the following week will be registered as an issue.	Register supplied by the supplier and signed off by the Project Leader on site	4	3	2	1	0	5%
Performance								
10	Return to Service - All completed outages must be free from defects and vibration. The vibration behaviour at different load conditions will be compared to international standards to determine if the performance is acceptable or not. (Measurement on number of defects.)	INO and flash reports	4	3	2	1	0	10%
11	No rework incidents. (Will be assessed on number of incidents, incidents will be classified.)	NCR's issued to supplier	4	3	2	1	0	10%
12	Completion of the Outage within the initial agreed upon timeframe by all parties. (Criteria based on number of days late) Average percentage for all outages will be calculated.	Completion certificate	4	3	2	1	0	10%
							Grand Total =	100%