

Reference	Rev	Page
I&T/URS/002/20	0	1 of 20





ESKOM

KOEBERG NUCLEAR POWER STATION

User Requirement Specification

Services for:

V-SERVICE TO QUANTIFY VALVE LEAKAGE INTO CONDENSER AND CONTRIBUTION TO PCLF

PREPARED BY: Signature Date 2021/10/22	K. Moahloli 	Inspection and Test
REVIEWED BY: Signature Date 2021/10/22	R. Cassiem 	Inspection and Test
Signature Date 2021/10/22	N. Allie 	System Engineering
APPROVED BY: Signature Date	T Mthandi 	Manager Inspection and Test 21/11/2021

Reference	Rev	Page
I&T/URS/002/20	0	2 of 20

TABLE OF CONTENTS

- 1. BACKGROUND / DESCRIPTION**
- 2. SCOPE OF WORK**
- 3. CERTIFICATION OF PERSONNEL**
- 4. TIMING AND PLANNING**
- 5. SHIFT REGIME**
- 6. TRAINING**
- 7. ACCESS FORMALITIES**
- 8. EQUIPMENT**
- 9. ESKOM SCOPE OF SUPPLY**
- 10. QUALITY REQUIREMENTS**
- 11. REFERENCES**
- 12. DOCUMENTATION**
- 13. APPENDIX 1**

Reference	Rev	Page
I&T/URS/002/20	0	3 of 20

1 DESCRIPTION

Perform an acoustic leak detection test (V-Service) for Unit 1 and Unit 2.

Unit 1 is currently incurring Planned Capability Loss Factor (PCLF) of between 10 to 15 MW_e. The cause of this loss appears to be linked to a drop in SG pressure that can either be linked to SG performance and/or an unquantified loss of steam flow due to particular valve/s passing steam directly into the condenser. An acoustic leak detection test (V-Service) is required to identify the source of the leaks and quantify the leaks from each passing valve. Defects will be raised to repair the leaks before a maintenance outage. List of applicable valves will be listed in the scope and Appendix 1

A V-service was performed at Koeberg in 2008 on Unit 1 and in 2009 on Unit 2. The V-service revealed that Unit 1 and Unit 2 was losing 2848 kW_e and 1885 kW_e respectively from passing valves on various systems. The systems that interface with the condenser are listed in Table 1 below.

Table 1 – List of systems interfacing with condenser

System	Description
ABP	Low pressure heater system
ACO	Feedwater heater drain recovery
AHP	HP heater system
APP	Turbine driven feed pump
ATE	Condensate polishing plant
CAP	Condenser makeup & discharge
CET	Turbine gland steam
CEX	Condenser extraction
CVI	Condenser vacuum
GCT	Turbine bypass system
GPV	Main turbine steam & drains
GSS	Moisture separator reheaters
STR	Steam transformer
SVA	Auxiliary steam distribution
VVP	Main steam system
XCA	Auxiliary boilers

2 SCOPE OF WORK

2.1 Leak detection testing using acoustic methods on all the applicable valves on Unit 1 & Unit 2. List of valves included as listed in Appendix 1. This activity is made of the following sub-activities

- Data acquisition
- Database creation
- Leak detection on site
- Survey final report that quantifies the leaks through each valve and quantifies the consequential loss in generated power in units of kW_e or MW_e.

Reference	Rev	Page
I&T/URS/002/20	0	4 of 20

2.2 Decrease of pressure test on GCT-to-condenser Valves (Quantification of lost MW_e) is NOT required as Koeberg is a base load station and operates with the valve shut under normal operation in T_{AVG} control mode. This means that the GCT-to-condenser valves are kept shut under spring tension because no air is permitted to the actuator due to 2 solenoids in series being shut under this control mode. Therefore, the quantification of leakage at full power is only required.

2.3 Final report should contain the following for each valve tested: testing method used, test findings, valve leak rate, etc. In addition the report should contain a valve repair priority list in order of MW_e loss.

2.4 The final report will be reviewed and approved by Eskom

2.5 The contractor must include training and on-job training to allow Eskom to perform the work in future with remote support from the contractor. A quotation must include this item separately to determine cost benefit.

All Work shall be supervised by Eskom.

3 CERTIFICATION OF PERSONNEL

The contractor must ensure that the staff performing the activities is qualified and skilled. Proof of certification, training records and work experience must be presented to Eskom on request. All resources utilized will be tested for technical competence in accordance with the Koeberg FFD process.

It is expected that supervisory representatives be present on site on a daily basis. No work shall be left unsupervised. References from other clients are recommended but not mandatory.

4 TIMING AND PLANNING

The V-service is required three (3) months prior to start of outage 126 (September 2022) for both units 1 and 2. The leaks will be identified online and repaired during the outages.

The contractor must submit a detailed resource schedule of all activities, based on the scope of work, together with the offer.

5 SHIFT REGIME

The contractor shall make provision for adequate coverage for the preparation, acquisition and evaluation of the inspection scope.

Reference	Rev	Page
I&T/URS/002/20	0	5 of 20

6 TRAINING

6.1 Specific training

All staff are to be adequately trained for the execution of the task.
All training shall be completed prior to the start of the services.

6.2 Generic training

The following training shall be completed before the start of any inspections on site:

- Security Screening Enrolment, Drug test and Criminal Check (1 day)
(Please note Criminal check takes few days and only once you pass Criminal Check can following training be booked)
- Medical examination (1 day)
- Working at Heights and Material Handling (1 day)
- Safety Induction Course (prior to start of work, 2 hours)
- Plant Induction Training (1 day for full training or ½ day for requalification)

7 ACCESS FORMALITIES

7.1 Personnel

After completion of the generic training as stipulated in paragraph 6, each member of the contractor team can be issued with a Personnel Identification Access Card. Lost or damaged cards will be for the cost of the contractor.

Hard hat, safety boots, safety glasses and hearing protection are mandatory safety equipment at Koeberg Nuclear Power Station. The contractor is responsible to supply all his staff with this safety gear prior to the start of the work. Personal protective equipment must comply with SABS standards.

8 Equipment

The contractor shall supply the equipment required for the inspections. The contractor is to provide the processes used to control equipment, materials and specifically foreign material exclusion. The required calibration documentation must accompany the equipment being used.

9 ESKOM SCOPE OF SUPPLY

The contractor shall indicate the support service required from Eskom in their offer.

Reference	Rev	Page
I&T/URS/002/20	0	6 of 20

10 QUALITY REQUIREMENTS

The work described in this specification will be classified by Specification Engineering. The supplier must comply with the requirements of DSG 310-087 and Quality Assurance actions and controls will be required for the service as well as a final inspection.

11 REFERENCES

KOE 1 0811 - A Leak Detection on Unit 1 Conventional Island
KOE 2 0907 - A Leak Detection on Unit 2 Conventional Island

12 DOCUMENTATION

A field service report must be drafted and presented to Koeberg prior to the departure of the contractor's site manager. A final copy must be sent to Koeberg at the latest 1 month after the end of the works. The report must include:

- Test report with a copy of the test results.
- Sign off Completion Certificates
- End of project Report

Reference	Rev	Page
I&T/URS/002/20	0	7 of 20

13 APPENDIX 1

Valve scope

Functional Location	Description	Equipment Type	Template
1ABP019VL	VALVE PNEU CTRL EM DRNS / COND 301RE	Pneumatic Act Control Valve 4"	AIR OPERATED CONTROL VALVES
1ABP020VL	VALVE - RELIEF BY-PASS 019VL	Relief Valve 2/3", in Mild Environmental conditions, with Slow Corrosive Fluid, No Crystal Formation, with Hard Seat	SAFETY RELIEF VALVES
1ABP021VL	VALVE PNEU CTRL EM DRNS / COND 302RE	Pneumatic Act Control Valve 4"	AIR OPERATED CONTROL VALVES
1ABP022VL	VALVE - RELIEF BY-PASS 021VL	Relief Valve 2/3", in Mild Environmental conditions, with Slow Corrosive Fluid, No Crystal Formation, with Hard Seat	SAFETY RELIEF VALVES
1ABP023VL	VALVE PNEU CTRL EM DRNS / COND 201RE	Pneumatic Act Control Valve 8"	AIR OPERATED CONTROL VALVES
1ABP024VL	VALVE - RELIEF BY-PASS 023VL	Relief Valve 3/4", in Mild Environmental conditions, with Slow Corrosive Fluid, No Crystal Formation, with Hard Seat	SAFETY RELIEF VALVES
1ABP025VL	VALVE PNEU CTRL EM DRNS / COND 202RE	Pneumatic Act Control Valve 8"	AIR OPERATED CONTROL VALVES
1ABP026VL	VALVE - RELIEF BYPASS 025VL	Relief Valve 3/4", in Mild Environmental conditions, with Slow Corrosive Fluid, No Crystal Formation, with Hard Seat	SAFETY RELIEF VALVES
1ABP031VL	CTRL V/V,401RE EM DRN TO AHP003BA PNEU A	Pneumatic Act Control Valve 6"	AIR OPERATED CONTROL VALVES
1ABP032VL	VALVE - RELIEF BY-PASS 031VL	Relief Valve 2/3", in Mild Environmental conditions, with Slow Corrosive Fluid, No Crystal Formation, with Hard Seat	SAFETY RELIEF VALVES
1ABP033VL	CTRL V/V 402RE EM DRAINS TO AHP 003BA	Pneumatic Act Control Valve 6"	AIR OPERATED CONTROL VALVES
1ABP034VL	VALVE - RELIEF BY-PASS 033VL	Relief Valve 2/3", in Mild Environmental conditions, with Slow Corrosive Fluid, No Crystal Formation, with Hard Seat	SAFETY RELIEF VALVES
1ABP035VL	V/V MTR OPTD BLED STM LNS DRN 201/202RE	Motor Operated Valve 4"	MOTOR ACTUATED VALVES (MOV)
1ABP036VL	V/V MTR OPTD BLED STM LNS DRN 201/202RE	Motor Operated Valve 4"	MOTOR ACTUATED VALVES (MOV)
1ACO013VL	V/V PNEU 001PO MIN/F TO DRNS RECOVY TANK	Pneumatic Operated Gate Valve 6"	AIR OPERATED ISOLATION VALVES
1ACO015VL	V/V PNEU 002PO MIN/F TO DRNS RECOVY TNK	Pneumatic Operated Gate Valve 6"	AIR OPERATED ISOLATION VALVES
1ACO017VL	V/V PNEU 001BA EM DRNS F CTRL 1AHP F/TNK	Pneumatic Control Valve 12"	AIR OPERATED CONTROL VALVES
1ACO018VL	V/V PNEU 001BA EM DRNS F CTRL 1AHP F/TNK	Pneumatic Control Valve 12"	AIR OPERATED CONTROL VALVES
1AET001PU	STEAM TRAP,		TRAP STEAM 501

Reference	Rev	Page
I&T/URS/002/20	0	8 of 20

	CONDENSATE DRAIN, TRAP		LINE DISCHARGE
1AET002PU	STEAM TRAP, CONDENSATE DRAIN, TRAP		TRAP STEAM 501 LINE DISCHARGE
1AET003PU	STEAM TRAP, CONDENSATE DRAIN, TRAP		TRAP STEAM 501 LINE DISCHARGE
1AET004PU	STEAM TRAP, CONDENSATE DRAIN, TRAP		TRAP STEAM 501 LINE DISCHARGE
1AET005PU	STEAM TRAP, CONDENSATE DRAIN, TRAP		TRAP STEAM 501 LINE DISCHARGE
1AET006PU	STEAM TRAP, CONDENSATE DRAIN, TRAP		TRAP STEAM 501 LINE DISCHARGE
1AHP011VL	VALVE - MOTOR OPERATED BYPASSING HEATERS	Motor Operated Valve 20"	MOTOR ACTUATED VALVES (MOV)
1AHP012VL	VALVE PNEU CTRLD ISOL RECIRCULATION LN	Pneumatic Control Valve 12"	AIR OPERATED CONTROL VALVES
1AHP016VL	VALVE PNEU CTRLD ISOL EM DRNS TANK 003BA	Pneumatic Control Valve 6"	AIR OPERATED CONTROL VALVES
1AHP017VL	VALVE - RELIEF DRAINS LINE TO 003BA	Relief Valve 3/4", in Mild Environmental conditions, with Slow Corrosive Fluid, No Crystal Formation, with Hard Seat	SAFETY RELIEF VALVES
1AHP022VL	VALVE PNEU CTRLD ISOL EM DRNS TO 003BA	Pneumatic Control Valve 6"	AIR OPERATED CONTROL VALVES
1AHP023VL	VALVE RELIEF BYP 022VL EM DRNS	Relief Valve, in Mild Environmental conditions, with Slow Corrosive Fluid, No Crystal Formation, with Hard Seat	SAFETY RELIEF VALVES
1AHP025VL	VALVE PNEU CTRLD ISOL EM DRNS TO 003BA	Pneumatic Control Valve 6"	AIR OPERATED CONTROL VALVES
1AHP026VL	VALVE RLF BYPNG 025VL EM DRNS TO 003BA	Relief Valve 3/4", in Mild Environmental conditions, with Slow Corrosive Fluid, No Crystal Formation, with Hard Seat	SAFETY RELIEF VALVES
1AHP029VL	VALVE PNEUMATIC CTRLD ISOL EM DRNS 003BA	Pneumatic Control Valve 6"	AIR OPERATED CONTROL VALVES
1AHP030VL	VALVE RLF BYPNG 029VL EM DRNS TO 003BA	Relief Valve 3/4", in Mild Environmental conditions, with Slow Corrosive Fluid, No Crystal Formation, with Hard Seat	SAFETY RELIEF VALVES
1AHP296VL	VALVE - LINE 012TY TO CEX	Manual Gate Valve 8"	GATE VALVES
1AHP297VL	VALVE - BY PASS FOR 296VL	Manual Gate Valve 1"	GLOBE VALVES
1APP001PU	TRAP STM TURB001TC LP STM INL&DRN TO AHP	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
1APP003PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS

Reference	Rev	Page
I&T/URS/002/20	0	9 of 20

1APP004PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
1APP004VV	VALVE - MANUAL DISCHARGE 001TC	Manual Butterfly Valve 1500	OTHER TASKS APPLIED
1APP007VL	VALVE - PNEUMATIC ABP BY PASS OF 001PO	Pneumatic Operated Valve	AIR OPERATED ISOLATION VALVES
1APP009VL	VALVE PNEU 001PO DSCH TO AHP SYSTEM	Pneumatic Operated Valve	AIR OPERATED ISOLATION VALVES
1APP009VV	VALVE - MANUAL DISCHARGE 002TC	Manual Butterfly Valve 1500	OTHER TASKS APPLIED
1APP017VL	VALVE - PNEUMATIC BY PASS 002PO	Pneumatic Operated Valve	AIR OPERATED ISOLATION VALVES
1APP019VL	VALVE PNEUMATIC 002PO DSCH TO AHP	Pneumatic Operated Valve	AIR OPERATED ISOLATION VALVES
1ASG002PU	STEAM TRAP, CONDENSATE DRAIN, TRAP		STEAM TRAP - PURGE ON TURBINE EXHAUST
1ASG003PU	STEAM TRAP, CONDENSATE DRAIN, TRAP		STEAM TRAP TO DRAINS FLASH TANK
1ASG005PU	STEAM TRAP, CONDENSATE DRAIN, TRAP		STEAM TRAP FROM FLASH TANK TO DRAINS
1ATE901VL	VALVE MOTORISED BUTTERFLY INLET 901PO	Motor Operated Butterfly Valve 32"	MOTOR ACTUATED VALVES (MOV)
1ATE902VL	VALVE NON RETURN DISCHARGE 901PO	Duo Check Valve 18"	CHECK VALVES
1ATE905VL	VALVE PNEU CTRLD RECIRC. LN 901PO	Pneumatic Actuated Valve 6"	AIR OPERATED CONTROL VALVES
1ATE907VL	VALVE MOTORISED B-FLY INL ISOLN 902PO	Motor Operated Butterfly Valve 32"	MOTOR ACTUATED VALVES (MOV)
1ATE908VL	VALVE CHECK NON RETURN DISCHARGE 902PO	Duo Check Valve 18"	CHECK VALVES
1ATE911VL	VALVE PNEUMATIC CONTROLLED RECIRC 902PO	Pneumatic Actuated Valve 6"	AIR OPERATED CONTROL VALVES
1ATE913VL	VALVE MOTORISED BUTTERFLY	Motor Operated Butterfly Valve 32"	MOTOR ACTUATED VALVES (MOV)
1ATE914VL	VALVE NON RETURN DISCHARGE 903PO	Duo Check Valve 18"	CHECK VALVES
1ATE917VL	VALVE PNEU CONTROL RECIRC LINE 903PO	Pneumatic Actuated Valve 6"	AIR OPERATED CONTROL VALVES
1CAP002VL	VALVE PNEUMATIC CTRL OF COND LVL	Pneumatic Control Valve 3"	AIR OPERATED CONTROL VALVES
1CAP003VL	VALVE ISOLN COND NORMAL FIL MU	Manual Valve 6"	GATE VALVES
1CAP004VL	VALVE MOTOR OPTD COND QUICK FIL MU	Motor Operated Valve 6"	MOTOR ACTUATED VALVES (MOV)
1CAP005VL	VALVE ISOLN MU WATER TO HTG BOX	Manual Valve 6"	GATE VALVES

Reference	Rev	Page
I&T/URS/002/20	0	10 of 20

1CET003VV	VALVE PNEU CTRLD MAIN STM SUPL TO 001BA	Control Valve 6x4"	AIR OPERATED CONTROL VALVES
1CET012VV	VALVE PRESS REG CTRL GPV STM SUPL 001BA	Control Valve 6"	AIR OPERATED CONTROL VALVES
1CEX001VL	VALVE MTR OPTD NON RTN SUC ISOLN 001PO	Motor Operated Butterfly Valve 32"	MOTOR ACTUATED VALVES (MOV)
1CEX005VL	VALVE PNEU CTRLD ISOLN DSCH M/F LN 001PO	Pneumatic Operated Gate Valve 8"	AIR OPERATED ISOLATION VALVES
1CEX007VL	VALVE MOTOR OPERATED SUCTION ISOLN 002PO	Motor Operated Butterfly Valve 32"	MOTOR ACTUATED VALVES (MOV)
1CEX011VL	VALVE PNEU CTRLD DSCH ISOLN M/F LN 002PO	Pneumatic Operated Gate Valve 8"	AIR OPERATED ISOLATION VALVES
1CEX013VL	VALVE MOTOR OPERATED SUCTION ISOLN 003PO	Motor Operated Butterfly Valve 32"	MOTOR ACTUATED VALVES (MOV)
1CEX014VL	VALVE - NON RETURN DISCHARGE 003PO	Check Valve 20"	CHECK VALVES
1CEX017VL	VALVE PNEU CTRLD DSCH ISOLN M/F LN 003PO	Pneumatic Operated Gate Valve 8"	AIR OPERATED ISOLATION VALVES
1CVI001VV	VALVE ISOLATION STEAM INLET TO 001EJ	Manual Valve 4"	GATE VALVES
1CVI002VV	VALVE ISOLATION STEAM INLET TO 002EJ	Manual Valve 4"	GATE VALVES
1CVI003VV	VALVE MOTOR DRIVEN 003EJ	Motor Operated Globe Valve 2"	MOTOR ACTUATED VALVES (MOV)
1CVI004VV	VALVE SHUT-OFF REBOILING SVA STEAM INLET	Manual Valve 8"	GATE VALVES
1CVI005VA	VALVE ISOLATING AIR SUCTION 003EJ	Manual Butterfly Valve 24"	BUTTERFLY VALVES
1CVI053VL	VALVE INLET TO 001CS MANUAL CONTROL	Manual Control Valve 6"	FLOW REGULATION VALVES
1CVI059VL	VALVE ISOLATING INLET TO 001CS	Manual Valve 6"	GATE VALVES
1CVI060VL	VALVE BY-PASS MOUNTED ON 059VL	Manual Valve 3/4"	GLOBE VALVES
1GCT033VV	VALVE - ISOLATION DRAIN LINE 003TY	Manual Globe Valve 2"	GLOBE VALVES
1GCT034VV	VALVE - ISOLATION DRAIN LINE 002TY	Manual Globe Valve 2"	GLOBE VALVES
1GCT035VV	VALVE - ISOLATION DRAIN LINE 006TY	Manual Globe Valve 2"	GLOBE VALVES
1GCT036VV	VALVE - VALVE ISOLATION DRAIN LINE 005TY	Manual Globe Valve 2"	GLOBE VALVES
1GCT100VV	VALVE - MOTOR OPERATED STEAM COLLECTOR	Motor Operated Valve 20"	MOTOR ACTUATED VALVES (MOV)
1GCT101VV	VALVE - MOTOR OPERATED STEAM COLLECTOR	Motor Operated Valve 20"	MOTOR ACTUATED VALVES (MOV)

Reference	Rev	Page
I&T/URS/002/20	0	11 of 20

1GCT102VV	VALVE - MOTOR OPERATED STEAM COLLECTOR	Motor Operated Valve 20"	MOTOR ACTUATED VALVES (MOV)
1GCT103VV	VALVE - MOTOR OPERATED STEAM COLLECTOR	Motor Operated Valve 20"	MOTOR ACTUATED VALVES (MOV)
1GCT104VV	VALVE - BYPASS VALVE 100VV	Manual Valve 1 1/2"	GLOBE VALVES
1GCT105VV	VALVE - BYPASS VALVE 101VV	Manual Valve 1 1/2"	GLOBE VALVES
1GCT106VV	VALVE - BYPASS VALVE 102VV	Manual Valve 1 1/2"	GLOBE VALVES
1GCT107VV	VALVE - BYPASS VALVE 103VV	Manual Valve 1 1/2"	GLOBE VALVES
1GCT108VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 12"	AIR OPERATED CONTROL VALVES
1GCT109VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 12"	AIR OPERATED CONTROL VALVES
1GCT110VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
1GCT111VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
1GCT112VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
1GCT113VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
1GCT114VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
1GCT115VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
1GCT116VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
1GCT117VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
1GCT118VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
1GCT119VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
1GCT120VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
1GCT121VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
1GCT122VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
1GCT123VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
1GCT125VL	VALVE PNEU CTRLD DES/H WATER INTAKE	Pneumatic Valve 3"	AIR OPERATED CONTROL VALVES
1GCT126VL	VALVE PNEU CTRLD DES/H WATER INTAKE	Pneumatic Valve 3"	AIR OPERATED CONTROL VALVES

Reference	Rev	Page
I&T/URS/002/20	0	12 of 20

1GCT127VL	VALVE PNEU CTRLD DES/H WATER WTR INTAKE	Pneumatic Valve 4"	AIR OPERATED CONTROL VALVES
1GCT131VV	VALVE PNEU CTRLD DSCH TO ATM RCP001GV	Regulating Valve, globe (linear), Plain carbon steel, Serie 600, Seat, Stellite, Plug, Stellite, Butt weld, Nuclear valves in Safety Class B, 0150, Reduced passage valve	AIR OPERATED CONTROL VALVES
1GCT132VV	VALVE PNEU CTRLD DSCH TO ATM RCP002GV	Regulating Valve, globe (linear), Plain carbon steel, Serie 600, Seat, Stellite, Plug, Stellite, Butt weld, Nuclear valves in Safety Class B, 0150, Reduced passage valve	AIR OPERATED CONTROL VALVES
1GCT133VV	VALVE PNEU CTRLD DSCH TO ATM RCP003GV	Regulating Valve, globe (linear), Plain carbon steel, Serie 600, Seat, Stellite, Plug, Stellite, Butt weld, Nuclear valves in Safety Class B, 0150, Reduced passage valve	AIR OPERATED CONTROL VALVES
1GPV051VV	VALVE DRAIN 001BA OUTLET TO AHP003BA	Motorised Globe Valve DN100	MOTOR ACTUATED VALVES (MOV)
1GPV052VV	VALVE DRAIN FROM MSV AND GV TO AHP003BA	Motorised Globe Valve DN100	MOTOR ACTUATED VALVES (MOV)
1GPV053VV	VALVE DRN F CTRL 001BA OUT TO AHP003BA	Motorised Globe Valve DN100	MOTOR ACTUATED VALVES (MOV)
1GPV054VV	V/V DRN 031-036VV&041-046VV TO AHP003BA	Motorised Globe Valve DN50	MOTOR ACTUATED VALVES (MOV)
1GPV055VV	V/V DRN HP CSG&SEPTRS RHTRS TO AHP003BA	Motorised Gate Valve DN200	MOTOR ACTUATED VALVES (MOV)
1GSS005VV	VALVE MTR OPTD MAIN STEAM LN DRNS ISOLN	Motorised Globe Valve DN25	MOTOR ACTUATED VALVES (MOV)
1GSS006VV	VALVE MOTOR OPERATED DRAINS ISOLATION	Motorised Globe Valve DN25	MOTOR ACTUATED VALVES (MOV)
1GSS106VL	VALVE FLOW CONTROL EMERGENCY DRAINS	Pneumatic Control Valve 4"	AIR OPERATED CONTROL VALVES
1GSS107VL	VALVE FLOW CTRL EM DRNS TO 101BA	Pneumatic Control Valve 4"	AIR OPERATED CONTROL VALVES
1GSS206VL	VALVE FLOW CONTROL EMERGENCY DRAINS	Pneumatic Control Valve 4"	AIR OPERATED CONTROL VALVES
1GSS207VL	VALVE FLOW CTRL EM DRNS 201BA	Pneumatic Control Valve 4"	AIR OPERATED CONTROL VALVES
1GSS306VL	VALVE PNEUMATIC FLOW CONTROL TO AHP003BA	Pneumatic Control Valve 4"	AIR OPERATED CONTROL VALVES
1GSS307VL	VALVE FLOW CTRL EM DRNS 301BA	Pneumatic Control Valve 4"	AIR OPERATED CONTROL VALVES
1GSS406VL	VALVE FLOW CONTROL EMERGENCY DRAINS	Pneumatic Control Valve 4"	AIR OPERATED CONTROL VALVES
1GSS407VL	VALVE FLOW CONTROL 401BA	Pneumatic Control Valve 4"	AIR OPERATED CONTROL VALVES
1STR002VD	VALVE PNEU CTRLLED FROM SER TO TNK 001BA	Pneumatic Control Valve 2"	AIR OPERATED ISOLATION VALVES

Reference	Rev	Page
I&T/URS/002/20	0	13 of 20

1VVP001PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
1VVP002PU	TRAP STEAM DRAINS TANK 002BA	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
1VVP003PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
1VVP004PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
1VVP163VL	VALVE PNEU FLOW CTRL DRNS TANK 002BA	Valves, Flow Regulating, Globe (linear)	AIR OPERATED ISOLATION VALVES
1VVP165VL	VALVE-163VL BYPASS ISOLATION	Valves, Isolation, Globe	GLOBE VALVES
1VVP166VL	VALVE-163VL BYPASS MANUAL FLOW REG	Manual Globe Valve 1"	FLOW REGULATION VALVES
1VVP185VL	VALVE-003PU BYPASS ISOLATION	Valves, Flow Regulating, Globe (linear)	GLOBE VALVES
1VVP186VL	VALVE-003PU BYPASS MANUAL FLOW REG	Manual Globe Valve 1"	FLOW REGULATION VALVES
1VVP189VL	VALVE-004PU BYPASS ISOLATION	Valves, Flow Regulating, Globe (linear)	GLOBE VALVES
1VVP190VL	VALVE-004PU BYPASS MANUAL FLOW REG	Manual Globe Valve 1"	FLOW REGULATION VALVES
1VVP274VL	VALVE MANUAL PNEUMATIC CONTROL	Valves, Flow Regulating, Globe (linear)	AIR OPERATED CONTROL VALVES
2ABP019VL	VALVE PNEU CTRL EM DRNS / COND 301RE	Pneumatic Act Control Valve 4"	AIR OPERATED CONTROL VALVES
2ABP020VL	VALVE - RELIEF BY-PASS 019VL	Relief Valve, in Mild Environmental conditions, with Slow Corrosive Fluid, No Crystal Formation, with Hard Seat	SAFETY RELIEF VALVES
2ABP021VL	VALVE PNEU CTRL EM DRNS / COND 302RE	Pneumatic Act Control Valve 4"	AIR OPERATED CONTROL VALVES
2ABP022VL	VALVE - RELIEF BY-PASS 021VL	Relief Valve, in Mild Environmental conditions, with Slow Corrosive Fluid, No Crystal Formation, with Hard Seat	SAFETY RELIEF VALVES
2ABP023VL	VALVE PNEU CTRL EM DRNS / COND 201RE	Pneumatic Act Control Valve 8"	AIR OPERATED CONTROL VALVES
2ABP024VL	VALVE - RELIEF BY-PASS 023VL	Relief Valve, in Mild Environmental conditions, with Slow Corrosive Fluid, No Crystal Formation, with Hard Seat	SAFETY RELIEF VALVES
2ABP025VL	VALVE PNEU CTRL EM DRNS / COND 202RE	Pneumatic Act Control Valve 8"	AIR OPERATED CONTROL VALVES
2ABP026VL	VALVE - RELIEF BYPASS 025VL	Relief Valve, in Mild Environmental conditions, with Slow Corrosive Fluid, No Crystal Formation, with Hard Seat	SAFETY RELIEF VALVES
2ABP031VL	CONTROL VALVE,401RE EMERGENCY DRAIN TO A	Pneumatic Act Control Valve 5"	AIR OPERATED CONTROL VALVES
2ABP032VL	VALVE - RELIEF BY-PASS 031VL	Relief Valve, in Mild Environmental conditions, with Slow Corrosive Fluid, No Crystal Formation, with Hard Seat	SAFETY RELIEF VALVES
2ABP033VL	CONTROL VALVE,402RE EM DRNS TO AHP003BA	Pneumatic Act Control Valve 6"	AIR OPERATED CONTROL VALVES

Reference	Rev	Page
I&T/URS/002/20	0	14 of 20

2ABP034VL	VALVE - RELIEF BY-PASS 033VL	Relief Valve, in Mild Environmental conditions, with Slow Corrosive Fluid, No Crystal Formation, with Hard Seat	SAFETY RELIEF VALVES
2ABP035VL	V/V MTR OPTD BLED STM LNS DRN 201/202RE	Motor Operated Valve 4"	MOTOR ACTUATED VALVES (MOV)
2ABP036VL	V/V MTR OPTD BLED STM LNS DRN 201/202RE	Motor Operated Valve 4"	MOTOR ACTUATED VALVES (MOV)
2ACO013VL	V/V PNEU 001PO MIN/F TO DRNS RECOVY TNK	Pneumatic Operated Gate Valve 6"	AIR OPERATED ISOLATION VALVES
2ACO015VL	V/V PNEU 002PO MIN/F TO DRNS RECOVY TNK	Pneumatic Operated Gate Valve 6"	AIR OPERATED ISOLATION VALVES
2ACO017VL	V/V PNEU 001BA EM DRNS F CTRL 2AHP F/TNK	Pneumatic Control Valve 12"	AIR OPERATED CONTROL VALVES
2ACO018VL	V/V PNEU 001BA EM DRNS F CTRL 2AHP F/TNK	Pneumatic Control Valve 12"	AIR OPERATED CONTROL VALVES
2AET001PU	STEAM TRAP, CONDENSATE DRAIN, TRAP		TRAP STEAM 501 LINE DISCHARGE
2AET002PU	STEAM TRAP, CONDENSATE DRAIN, TRAP		TRAP STEAM 501 LINE DISCHARGE
2AET003PU	STEAM TRAP, CONDENSATE DRAIN, TRAP		TRAP STEAM 501 LINE DISCHARGE
2AET004PU	STEAM TRAP, CONDENSATE DRAIN, TRAP		TRAP STEAM 501 LINE DISCHARGE
2AET005PU	STEAM TRAP, CONDENSATE DRAIN, TRAP		TRAP STEAM 501 LINE DISCHARGE
2AET006PU	STEAM TRAP, CONDENSATE DRAIN, TRAP		TRAP STEAM 501 LINE DISCHARGE
2AHP011VL	VALVE - MOTOR OPERATED BYPASSING HEATERS	Motor Operated Valve 20"	MOTOR ACTUATED VALVES (MOV)
2AHP012VL	VALVE PNEU CTRLD ISOL RECIRCULATION LN	Pneumatic Control Valve 12"	AIR OPERATED CONTROL VALVES
2AHP016VL	VALVE PNEU CTRLD ISOL EM DRNS TANK 003BA	Pneumatic Control Valve 6"	AIR OPERATED CONTROL VALVES
2AHP017VL	VALVE - RELIEF DRAINS LINE TO 003BA	Relief Valve 3/4", in Mild Environmental conditions, with Slow Corrosive Fluid, No Crystal Formation, with Hard Seat	SAFETY RELIEF VALVES
2AHP022VL	VALVE PNEU CTRLD ISOL EM DRNS TO 003BA	Pneumatic Control Valve 6"	AIR OPERATED CONTROL VALVES
2AHP023VL	VALVE RELIEF BYP 022VL EM DRNS	Relief Valve, in Mild Environmental conditions, with Slow Corrosive Fluid, No Crystal Formation, with Hard Seat	SAFETY RELIEF VALVES
2AHP025VL	VALVE PNEU CTRLD ISOL	Pneumatic Control Valve 6"	AIR OPERATED

Reference	Rev	Page
I&T/URS/002/20	0	15 of 20

	EM DRNS TO 003BA		CONTROL VALVES
2AHP026VL	VALVE RLF BYPNG 025VL EM DRNS TO 003BA	Relief Valve 3/4", in Mild Environmental conditions, with Slow Corrosive Fluid, No Crystal Formation, with Hard Seat	SAFETY RELIEF VALVES
2AHP029VL	VALVE PNEUMATIC CTRLD ISOL EM DRNS 003BA	Pneumatic Control Valve 6"	AIR OPERATED CONTROL VALVES
2AHP030VL	VALVE RLF BYPNG 029VL EM DRNS TO 003BA	Relief Valve 3/4", in Mild Environmental conditions, with Slow Corrosive Fluid, No Crystal Formation, with Hard Seat	SAFETY RELIEF VALVES
2AHP296VL	VALVE - LINE 012TY TO CEX	Manual Gate Valve 8"	GATE VALVES
2AHP297VL	VALVE - BY PASS FOR 296VL	Manual Gate Valve 1"	GLOBE VALVES
2APP001PU	TRAP STM TURB001TC LP STM INL&DRN TO AHP	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
2APP004VV	VALVE - MANUAL DISCHARGE 001TC	Manual Butterfly Valve 1500	OTHER TASKS APPLIED
2APP007VL	VALVE - PNEUMATIC ABP BY PASS OF 001PO	Pneumatic Operated Valve	AIR OPERATED ISOLATION VALVES
2APP009VL	VALVE PNEU 001PO DSCH TO AHP SYSTEM	Pneumatic Operated Valve	AIR OPERATED ISOLATION VALVES
2APP009VV	VALVE - MANUAL DISCHARGE 002TC	Manual Butterfly Valve 1500	OTHER TASKS APPLIED
2APP017VL	VALVE - PNEUMATIC BY PASS 002PO	Pneumatic Operated Valve	AIR OPERATED ISOLATION VALVES
2APP019VL	VALVE PNEUMATIC 002PO DSCH TO AHP	Pneumatic Operated Valve	AIR OPERATED ISOLATION VALVES
2ATE901VL	VALVE MOTORISED BUTTERFLY	Motor Operated Butterfly Valve 32"	MOTOR ACTUATED VALVES (MOV)
2ATE902VL	VALVE NON RETURN DISCHARGE 901PO	Duo Check Valve 18"	CHECK VALVES
2ATE905VL	VALVE PNEU CTRLD RECIRC. LN 901PO	Pneumatic Actuated Valve 6"	AIR OPERATED CONTROL VALVES
2ATE907VL	VALVE MOTORISED BUTTERFLY	Motor Operated Butterfly Valve 32"	MOTOR ACTUATED VALVES (MOV)
2ATE908VL	VALVE CHECK NON RETURN DISCHARGE 902PO	Duo Check Valve 18"	CHECK VALVES
2ATE911VL	VALVE PNEUMATIC CONTROLLED RECIRC 902PO	Pneumatic Actuated Valve 6"	AIR OPERATED CONTROL VALVES
2ATE913VL	VALVE MOTORISED BUTTERFLY	Motor Operated Butterfly Valve 32"	MOTOR ACTUATED VALVES (MOV)
2ATE914VL	VALVE NON RETURN DISCHARGE 903PO	Duo Check Valve 18"	CHECK VALVES
2ATE917VL	VALVE PNEU CONTROL RECIRC LINE 905PO	Pneumatic Actuated Valve 6"	AIR OPERATED CONTROL VALVES
2CAP002VL	VALVE PNEUMATIC CTRL OF COND LVL	Pneumatic Control Valve 3"	AIR OPERATED CONTROL VALVES

Reference	Rev	Page
I&T/URS/002/20	0	16 of 20

2CAP003VL	VALVE ISOLN COND NORMAL FIL MU	Manual Valve 6"	GATE VALVES
2CAP004VL	VALVE MOTOR OPTD COND QUICK FIL MU	Motor Operated Valve 6"	MOTOR ACTUATED VALVES (MOV)
2CAP005VL	VALVE ISOLN MU WATER TO HTG BOX	Manual Valve 6"	GATE VALVES
2CET003VV	VALVE PNEU CTRLD MAIN STM SUPL TO 001BA	Control Valve 6x4"	AIR OPERATED CONTROL VALVES
2CET012VV	VALVE PRESS REG CTRL GPV STM SUPL 001BA	Control Valve 6"	AIR OPERATED CONTROL VALVES
2CEX001VL	VALVE MTR OPTD NON RTN SUC ISOLN 001PO	Motor Operated Butterfly Valve 32"	MOTOR ACTUATED VALVES (MOV)
2CEX005VL	VALVE PNEU CTRLD ISOLN DSCH M/F LN 001PO	Pneumatic Operated Gate Valve 8"	AIR OPERATED ISOLATION VALVES
2CEX007VL	VALVE MOTOR OPERATED SUCTION ISOLN 002PO	Motor Operated Butterfly Valve 32"	MOTOR ACTUATED VALVES (MOV)
2CEX011VL	VALVE PNEU CTRLD DSCH ISOLN M/F LN 002PO	Pneumatic Operated Gate Valve 8"	AIR OPERATED ISOLATION VALVES
2CEX013VL	VALVE MOTOR OPERATED SUCTION ISOLN 003PO	Motor Operated Butterfly Valve 32"	MOTOR ACTUATED VALVES (MOV)
2CEX014VL	VALVE - NON RETURN DISCHARGE 003PO	Check Valve 20"	CHECK VALVES
2CEX017VL	VALVE PNEU CTRLD DSCH ISOLN M/F LN 003PO	Pneumatic Operated Gate Valve 8"	AIR OPERATED ISOLATION VALVES
2CVI001VV	VALVE ISOLATION STEAM INLET TO 001EJ	Manual Valve 4"	GATE VALVES
2CVI002VV	VALVE ISOLATION STEAM INLET TO 002EJ	Manual Valve 4"	GATE VALVES
2CVI003VV	VALVE MOTOR DRIVEN 003EJ	Motor Operated Globe Valve 2"	MOTOR ACTUATED VALVES (MOV)
2CVI004VV	VALVE SHUT-OFF REBOILING S.V.A STEAM INL	Manual Valve 8"	GATE VALVES
2CVI005VA	VALVE ISOLATING AIR SUCTION 003EJ	Manual Butterfly Valve 24"	BUTTERFLY VALVES
2CVI053VL	VALVE INLET TO 001CS MANUAL CONTROL	Manual Control Valve 6"	FLOW REGULATION VALVES
2CVI059VL	VALVE ISOLATING INLET TO 001CS	Manual Valve 6"	GATE VALVES
2CVI060VL	VALVE BY-PASS MOUNTED ON 059VL	Manual Valve 3/4"	GLOBE VALVES
2GCT033VV	VALVE - ISOLATION DRAIN LINE 003TY	Manual Globe Valve 2"	GLOBE VALVES
2GCT034VV	VALVE - ISOLATION DRAIN LINE 002TY	Manual Globe Valve 2"	GLOBE VALVES
2GCT035VV	VALVE - ISOLATION DRAIN LINE 006TY	Manual Globe Valve 2"	GLOBE VALVES
2GCT036VV	VALVE - VALVE ISOLATION DRAIN LINE 005TY	Manual Globe Valve 2"	GLOBE VALVES

Reference	Rev	Page
I&T/URS/002/20	0	17 of 20

2GCT100VV	VALVE - MOTOR OPERATED STEAM COLLECTOR	Motor Operated Valve 20"	MOTOR ACTUATED VALVES (MOV)
2GCT101VV	VALVE - MOTOR OPERATED STEAM COLLECTOR	Motor Operated Valve 20"	MOTOR ACTUATED VALVES (MOV)
2GCT102VV	VALVE - MOTOR OPERATED STEAM COLLECTOR	Motor Operated Valve 20"	MOTOR ACTUATED VALVES (MOV)
2GCT103VV	VALVE - MOTOR OPERATED STEAM COLLECTOR	Motor Operated Valve 20"	MOTOR ACTUATED VALVES (MOV)
2GCT104VV	VALVE - BYPASS VALVE 100VV	Manual Valve 1 1/2"	GLOBE VALVES
2GCT105VV	VALVE - BYPASS VALVE 101VV	Manual Valve 1 1/2"	GLOBE VALVES
2GCT106VV	VALVE - BYPASS VALVE 102VV	Manual Valve 1 1/2"	GLOBE VALVES
2GCT107VV	VALVE - BYPASS VALVE 103VV	Manual Valve 1 1/2"	GLOBE VALVES
2GCT108VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 12"	AIR OPERATED CONTROL VALVES
2GCT109VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 12"	AIR OPERATED CONTROL VALVES
2GCT110VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
2GCT111VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
2GCT112VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
2GCT113VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
2GCT114VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
2GCT115VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
2GCT116VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
2GCT117VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
2GCT118VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
2GCT119VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
2GCT120VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
2GCT121VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
2GCT122VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES

Reference	Rev	Page
I&T/URS/002/20	0	18 of 20

2GCT123VV	VALVE PNEU CTRLD STEAM EXPANSION	Pneumatic Control Valve 10"	AIR OPERATED CONTROL VALVES
2GCT125VL	VALVE PNEU CTRLD DES/H WATER INTAKE	Pneumatic Valve 3"	AIR OPERATED CONTROL VALVES
2GCT126VL	VALVE PNEU CTRLD DES/H WATER INTAKE	Pneumatic Valve 3"	AIR OPERATED CONTROL VALVES
2GCT127VL	VALVE PNEU CTRLD DES/H WATER WTR INTAKE	Pneumatic Valve 4"	AIR OPERATED CONTROL VALVES
2GCT131VV	VALVE PNEU CTRLD DSCH TO ATM RCP001GV	Regulating Valve, globe (linear), Plain carbon steel, Serie 600, Seat, Stellite, Plug, Stellite, Butt weld, Nuclear valves in Safety Class B, 0150, Reduced passage valve	AIR OPERATED CONTROL VALVES
2GCT132VV	VALVE PNEU CTRLD DSCH TO ATM RCP002GV	Regulating Valve, globe (linear), Plain carbon steel, Serie 600, Seat, Stellite, Plug, Stellite, Butt weld, Nuclear valves in Safety Class B, 0150, Reduced passage valve	AIR OPERATED CONTROL VALVES
2GCT133VV	VALVE PNEU CTRLD DSCH TO ATM RCP003GV	Regulating Valve, globe (linear), Plain carbon steel, Serie 600, Seat, Stellite, Plug, Stellite, Butt weld, Nuclear valves in Safety Class B, 0150, Reduced passage valve	AIR OPERATED CONTROL VALVES
2GPV051VV	VALVE DRAIN 001BA OUTLET TO AHP003BA	Motorised Globe Valve DN100	MOTOR ACTUATED VALVES (MOV)
2GPV052VV	VALVE DRAIN FROM MSV AND GV TO AHP003BA	Motorised Globe Valve DN100	MOTOR ACTUATED VALVES (MOV)
2GPV053VV	VALVE DRN F CTRL 001BA OUT TO AHP003BA	Motorised Globe Valve DN100	MOTOR ACTUATED VALVES (MOV)
2GPV054VV	V/V DRN 031-036VV&041-046VV TO AHP003BA	Motorised Globe Valve DN50	MOTOR ACTUATED VALVES (MOV)
2GPV055VV	V/V DRN HP CSG&SEPTRS RHTRS TO AHP003BA	Motorised Gate Valve DN200	MOTOR ACTUATED VALVES (MOV)
2GSS005VV	VALVE MTR OPTD MAIN STEAM LN DRNS ISOLN	Motorised Globe Valve DN25	MOTOR ACTUATED VALVES (MOV)
2GSS006VV	VALVE MOTOR OPERATED DRAINS ISOLATION	Motorised Globe Valve DN25	MOTOR ACTUATED VALVES (MOV)
2GSS106VL	VALVE FLOW CONTROL EMERGENCY DRAINS	Pneumatic Control Valve 4"	AIR OPERATED CONTROL VALVES
2GSS107VL	VALVE FLOW CTRL EM DRNS TO 101BA	Pneumatic Control Valve 4"	AIR OPERATED CONTROL VALVES
2GSS206VL	VALVE FLOW CONTROL EMERGENCY DRAINS	Pneumatic Control Valve 4"	AIR OPERATED CONTROL VALVES
2GSS207VL	VALVE FLOW CTRL EM DRNS 201BA	Pneumatic Control Valve 4"	AIR OPERATED CONTROL VALVES
2GSS306VL	VALVE PNEUMATIC FLOW CONTROL TO AHP003BA	Pneumatic Control Valve 4"	AIR OPERATED CONTROL VALVES
2GSS307VL	VALVE FLOW CTRL EM DRNS 301BA	Pneumatic Control Valve 4"	AIR OPERATED CONTROL VALVES

Reference	Rev	Page
I&T/URS/002/20	0	19 of 20

2GSS406VL	VALVE FLOW CONTROL EMERGENCY DRAINS	Pneumatic Control Valve 4"	AIR OPERATED CONTROL VALVES
2GSS407VL	VALVE FLOW CONTROL 401BA	Pneumatic Control Valve 4"	AIR OPERATED CONTROL VALVES
2STR002VD	VALVE PNEU CTRLLED FROM SER TO TNK 001BA	Pneumatic Control Valve 2"	AIR OPERATED ISOLATION VALVES
2VVP001PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
2VVP002PU	TRAP STEAM DRAINS TANK 002BA	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
2VVP003PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
2VVP004PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
2VVP163VL	VALVE PNEU FLOW CTRL DRNS TANK 002BA	Condensed water valve	AIR OPERATED ISOLATION VALVES
2VVP165VL	VALVE-163VL BYPASS ISOLATION	Condensed water valve	GLOBE VALVES
2VVP166VL	VALVE-163VL BYPASS MANUAL FLOW REG	Manual Globe Valve 1"	FLOW REGULATION VALVES
2VVP185VL	VALVE-003PU BYPASS ISOLATION	Condensed water valve	GLOBE VALVES
2VVP186VL	VALVE-003PU BYPASS MANUAL FLOW REG	Manual Globe Valve 1"	FLOW REGULATION VALVES
2VVP189VL	VALVE-004PU BYPASS ISOLATION	Condensed water valve	GLOBE VALVES
2VVP190VL	VALVE-004PU BYPASS MANUAL FLOW REG	Manual Globe Valve 1"	FLOW REGULATION VALVES
2VVP274VL	VALVE MANUAL PNEUMATIC CONTROL	Condensed water valve	AIR OPERATED CONTROL VALVES
9SVA021PU	TRAP STEAM LINE 551 DRAIN	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA022PU	TRAP STEAM LINE 552 DRAIN	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA123VV	VALVE ISOLATION BY PASS 021PU	Manual Globe Valve 1"	GLOBE VALVES
9SVA124VV	VALVE CONTROL MANUAL 021PU BY PASS	Manual Flow Control Valve 1"	FLOW REGULATION VALVES
9SVA127VV	VALVE ISOLATION BY PASS 022PU	Manual Globe Valve 1"	GLOBE VALVES
9SVA128VV	VALVE CONTROL MANUAL 022PU BY PASS	Manual Flow Control Valve 1"	FLOW REGULATION VALVES
9SVA001PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA002PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA003 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA004 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA005 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA006 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA007 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA008 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA009 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS

Reference	Rev	Page
I&T/URS/002/20	0	20 of 20

9SVA010 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA011 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA012 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA013 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA014 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA015 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA016 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA017 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA018 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA019 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA020 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA021 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA022 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA023 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA024 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA263 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA268 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA272 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9SVA277 PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
9XCA001PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
ASG002PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
ASG003PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS
ASG004PU	TRAP STEAM	Steam Trap, Condensate Drain, Trap	STEAM TRAPS