

Scope of work for General valves

1. Work to be performed by the contractor

Data books and calibration certificated to be supplied by the contractor where applicable All work on Eskom general valves should comply with the standards as listed below where applicable

| No. | REFERENCE NUMBER | DOCUMENT TITLE |
|-----|-----------------------|---|
| 1 | 240-83539994 | Standard for Non-Destructive Testing (NDT) on Eskom Plant |
| 2 | SANS 347 | Categorization and conformity assessment criteria for all pressure equipment |
| 3 | 240-106628253 | Standard for welding requirements on Eskom Plant |
| 4 | 240-83540088 | Requirements for Non-Destructive Testing (NDT) on Eskom Plant |
| 5 | ISO 9001 and ISO 9002 | Quality Management System |
| 6 | SANS 10257 | The reconditioning of valves for use with pipelines |
| 7 | BS EN 1092 -1 2007 | Flanges and their joints circular flanges for piping, valves, fittings and accessories, PN designation. |
| 8 | BS EN 13480 - 3.2012 | Metallic Industrial Piping Part 3 Design and calculation |
| 9 | 240-86546783 | Procurement standard for material certification requirements applicable to metallic products used on low and medium pressure applications |
| 10 | 240-105020315 | Standard for low pressure valves |
| 11 | 36-1126 | Specification for corrosion protection of plant and equipment with coatings |
| 12 | 240-76667211 | Outage Management Foreign Material Exclusion Standard |

2. Details of Tasks

- Maintenance and repair of Turbine High Pressure / High Temperature and General Valves and fittings must comply with Eskom Standard 240-84979413
- Identification and tag of valves
- Removal of actuators.
- Stripping of valves The *Contractor* is responsible for all components removed from the valves. These must be stored in a safe place to prevent theft and must be labelled so that they can be returned to the same valve from which they were removed
- Cleaning and inspection of valve and components The inspection of valves must include the following items truth check spindles, surface finish inspection, dimension checks and record all inn a check sheet. The thread on the spindles must be cleaned and any burrs removed Any solvents used will be subject to Eskom approval and disposal will be according to Eskom procedure
- Valve cleanliness checks.

- The valve must be fully stripped so that it can be inspected internally to ensure that it is free from dirt or grit
- Recommendations must be made as to work required and parts needing replacement or refurbishment. If NDE is necessary, this will be at the approval of the *Employer's Representative*
- Components to be measured (components to be measured will be discussed with the Employer's Representative)
- Machine lapping on discs or valve heads and body seats
- Lapping of the valve seats to be done when required. In addition, blue check the valve seats. Eskom representative to check and approve blueing. Seats to be measured to verify the flatness of them
- Fitting new gaskets, pressure seals and gland packing
- Valve assembly and perform functional test of the valves
- Installation or replacement of actuators
- The *Contractor* must control all replacement parts supplied by Eskom. All unused components and damaged components that have been replaced must be returned to the *Employer's Representative*.
- Documentation to be completed and submitted to the *Employer's Representative*. All documentation must indicate the AKZ of the valve, the valve serial number, the valve size, manufacturer, and type. The documentation required includes the signed copy of the quality inspection plan and the inspection report. The inspection report must include the following:
 - Any visual defects
 - Findings of NDE
 - Parts replaced including the part number and stock number where applicable, dimensions of consumable parts.
 - If seats or disks have been machined the seat depth remaining and thickness of material removed must be indicated
 - Recommended actions.
- All test certificates if applicable
- All valves will be subjected to a required Statutory Hydraulic Pressure Test and must be able to withstand the pressures applied, personnel must be available on site during the pressure test to assist in detecting leaks and for re-packing of valves and tightening of glands where necessary. At least 2 valve fitters and a supervisor / QC inspector will be needed.
- The works are to be completed in accordance with the specifications in all respects and ready for take-over by the Employer's Representative
- Final inspection to be done with Eskom representative

- Final submission documentation to be completed two weeks after valve repairs scope of work

3. *Lifting of Valves*

- All valves with a nominal bore greater than 100mm will require lifting gear. The weight of the valve must be obtained from the relevant valve overhaul maintenance instruction before setting up lifting gear. Use overhead runway beams and travelling trolleys where available for lifting valves. Set up lifting gear to the valve to be removed.
- Proof of lifting certificates to be submitted to the Employer's Representative, whereby the Employer's Representative will assess and certify, prior starting date.
- NB All opened valves and pipe-works to be covered with FME covers to prevent unwanted dirt to ingress the system. *The Contractor* is responsible to provide its own FME covers and to control the use of the covers. The use of these covers must be as per Outage Management Foreign Material Exclusion Standard 240-76667211.

4. *Quality Control*

- The *Contractor* who executes a maintenance activity is responsible for the quality of their work. Formal quality control shall be applied as appropriate to all level 1 and 2 plants and to all critical activities on level 3 plants. The quality inspection plan must contain the minimum quality control requirements. Internal quality inspection plans must be numbered according to LMT00001.

5. *Quality inspection plans*

- Quality inspection plans define the sequence of activities to be performed. The QIP must indicate all associated hold and witness points as well as the person responsible for these activities. All controlling documentation must be indicated as well as the documentation required.

6. *Lethabo Quality Control inspectors*

- Quality control inspections will be conducted on behalf of Eskom by a quality inspector from Maintenance Support Services Section. The quality inspector must be authorised by the Power Station Maintenance Manager in terms of LMA10002. The inspections will be carried out to provide an assessment of conformance to specification and quality requirements.
- These inspections do not take any responsibility away from the supervisor or artisan performing the work.
- The quality inspector's responsibilities include the following:
 - Reviewing maintenance procedures and work instructions and indicating witness and hold points.
 - Verifying that specified quality requirements have been achieved by inspecting work in progress and indicating acceptance on the quality control plan.
 - Ensuring that quality control plans are completed for all valves overhauled. The quality control plan must be made available by the Employer's Representative prior to commencement of work for review.
 - Ensuring that acceptable maintenance practice and relevant codes, standards and statutory requirements are adhered to.

- The quality inspector has the authority to stop work where an inadequacy threatens the safety of plant or personnel. It is the responsibility of the person performing the activity to inform the quality inspector prior to reaching a witness or hold point. In the case of a major outage the quality inspector must be informed at least one day in advance

7. Requirements on Welding

- Any welding to be done on the valve body must be confirmed by Eskom QC and/or Eskom Engineering
- Any welding to be done must only be done by the approved valve bodies welding supplier and the Employer must be notified before the welding is carried out

8. Items to be supplied by the Employer

The following items will be supplied by the Employer to enable the completion of the scope of work

- Valve cut-out and re-welding manpower
- The Employer shall supply the replacement parts, except the one's listed below (item 9)

9. Items to be supplied by the contractor

The following items form the minimum requirements for the Contractor and are not limited to:

- Safety equipment
- Lapping paste (fine and course)
- Lapping tools
- Lapping discs (skimmed to ensure integrity of surface and flatness - to be QC checked by Lethabo personnel)
- Valve opening cover devices
- Gasket, packing and pressure seals and consumable fasteners
- Rigging services where applicable

NB- On all pressure seals and gaskets used in the plant, the contractor shall specify the material used and get approval from Eskom representative.

Turbine General valves to be refurbished during GOs:

| No. | AKZ No. | Description | Valve Size (mm) |
|-----|----------|---|-----------------|
| 1 | RH10S002 | LP Heater 1 Standpipe top isolating valve | 80 |
| 2 | RH10S003 | LP Heater 1 Standpipe drain valve | 50 |
| 3 | RH10S004 | LP Heater 1 Standpipe vent valve | 25 |
| 4 | RH10S005 | LP Heater 1 Vent to Condenser | 50 |
| 5 | RH10S006 | LP Heater 1 Vent to Condenser | 50 |
| 6 | RH10S007 | LP Heater 1 hydraulic test Connection | 50 |
| 7 | RH10S008 | LP Heater 1 Stand Pipe Filling valve | 15 |
| 8 | RH10S009 | Make-up Water Heater Bled Steam Isol | 350 |
| 9 | RH10S010 | Make-up Water Heater Vent to Condenser | 25 |

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|----|---------------------|---|-----|
| 10 | RH10S011 | LP Heater 1 Standpipe bottom isolating valve | 80 |
| 11 | RH10L501KA01 | LP Heater 1 level Control valve | 25 |
| 12 | RH10L502KA01 | Make-up water level control | 25 |
| 13 | RH20S002 | LP Heater 2 Standpipe top isolating valve | 80 |
| 14 | RH20S003 | LP Heater 2 Standpipe drain valve | 50 |
| 15 | RH20S004 | LP Heater 2 Standpipe vent valve | 25 |
| 16 | RH20S005 | LP heater 2 Vent to Condensor | 50 |
| 17 | RH20S006 | LP heater 2 Vent to Condensor | 50 |
| 18 | RH20S007 | LP Heater 2 hydraulic test Connection | 50 |
| 19 | RH20S008 | LP heater 2 Stand Pipe Filling | 15 |
| 20 | RH20S009 | LP heater 2 Stand Pipe Bottom Isol Valve | 80 |
| 21 | RH20L501KA01 | LP Heater 2 level control | 25 |
| 22 | RH30S004 | LP Heater 3 Standpipe top isolating valve | 80 |
| 23 | RH30S005 | LP Heater 3 Standpipe drain valve | 50 |
| 24 | RH30S006 | LP Heater 3 Standpipe vent valve | 25 |
| 25 | RH30S007 | LP Heater 3 Vent to condenser | 50 |
| 26 | RH30S008 | LP Heater 3 Vent to condenser | 50 |
| 27 | RH30S010 | LP Heater 3 Standpipe filling | 15 |
| 28 | RH30S011 | LP Heater 3 hydraulic test Connection | 50 |
| 29 | RH30S012 | LP Heater 3 Standpipe bottom isolating valve | 80 |
| 30 | RH30L501KA01 | LP Heater 3 level control | 25 |
| 31 | RN10S008 | LP Heater 1 Drain Pump Condensate Inlet Isol Valve | 250 |
| 32 | RN10S009 | LP Heater 1 Drain Pumps Suction Drain | 25 |
| 33 | RN10S010 | LP Heater 1 Drain Pump A Suction Vent to LP Htr 1 | 25 |
| 34 | RN10S011 | LP Heater 1 Drain Pump B Suction Vent to LP Htr 2 | 25 |
| 35 | RN10S012 | LP Heater 1 discharge vent valve | 25 |
| 36 | RN10S014 | LP Heater 1 drain pump discharge drain valve | 50 |
| 37 | RN10S015 | LP Heater 1 Drain Pump A Leak Off NRV | 100 |
| 38 | RN10S016 | LP Heater 1 drain pump A Leak Off Isol | 100 |
| 39 | RN10S017 | LP Heater 1 Drain Pump B Leak Off NRV | 100 |
| 40 | RN10S018 | LP Heater 1 drain pump B Leak Off Isol | 100 |
| 41 | RN10S019 | LP Heater 1 Drain Pumps leak-off drain valve | 25 |
| 42 | RN11S001 | LP Heater 1 Barometric Loop Drain | 15 |
| 43 | RN11S002 | LP Heater 1 Barometric Loop Test Point | 25 |
| 44 | RN12S001 | Make-up water heater drain to LP heater 1 | 50 |
| 45 | RN12S002 | Make-up water Heater hydraulic test Connection | 50 |
| 46 | RN20S001 | LP Heater 2 to LP Heater 1 dist isol v/v | 250 |
| 47 | RN21S002 | LP Heater 2 Dist drain valve | 25 |
| 48 | RU10S002 | Feed water tank drain isolating valve | 200 |
| 49 | RU10S003 | FWT Overflow Isol Valve | 200 |
| 50 | RU10S004 | FWT Overflow Drain | 25 |
| 51 | RU20S001 | Expansion vessel drain to condenser isolating valve | 100 |
| 52 | RU20S004 | Expansion Vessel Stand Pipe Vent Valve | 25 |
| 53 | RU20S005 | Expansion Vessel Stand Pipe Drain Valve | 25 |
| 54 | RU20S006 | Expansion Vessel Emergency overflow water to pit | 200 |
| 55 | RU20S007 | Expansion Vessel to Drain Tank Stand Pipe Bottom Isol | 80 |
| 56 | RU20S008 | Expansion Drain Tank Return Drain | 25 |
| 57 | RU20S009 | Expansion Vessel and Drain Tank Stand Pipe Top Isol | 80 |
| 58 | RU21S001 | Expansion Vessel Drain Pump A Suction Isol | 200 |
| 59 | RU21S002 | Expansion Vessel Drain Pump A Discharge NRV | 100 |
| 60 | RU21S003 | Expansion Vessel Drain Pump A Discharge Isol | 100 |
| 61 | RU21S004 | Condensate Return Pump A Low Check Valve | 50 |

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|-----|-----------------|--|-------|
| 62 | RU21S005 | Condensate Return Pump A Low Isol Valve | 50 |
| 63 | RU22S001 | Expansion Vessel Drain Pump B Suction Isol | 200 |
| 64 | RU22S002 | Expansion Vessel Drain Pump B Discharge NRV | 100 |
| 65 | RU22S003 | Expansion Vessel Drain Pump Discharge Isol | 100 |
| 66 | RU22S004 | Condensate Return Pump B Low Check Valve | 50 |
| 67 | RU22S005 | Condensate Return Pump B Low Isol Valve | 50 |
| 68 | RU10S001 | FWT overflow Reg valve | 200 |
| 69 | RU20S003 | Expansion vessel drain to condenser regulating valve | 100 |
| 70 | RM00S001 | Gland Steam Condenser Inlet Isol Valve | 500 |
| 71 | RM00S002 | Gland Steam Condenser Outlet Isol Valve | 500 |
| 72 | RM00S005 | LPH 1 Inlet Isol Valve | 500 |
| 73 | RM00S006 | LPH 1 Outlet Isol Valve | 500 |
| 74 | RM00S008 | LPH 2 Inlet Isol Valve | 500 |
| 75 | RM00S009 | LPH 2 Outlet Isol Valve | 500 |
| 76 | RM00S011 | LPH 3 Inlet Isol Valve | 500 |
| 77 | RM00S012 | LPH 3 Outlet Isol Valve | 500 |
| 78 | RM00S014 | Condensate to feed water tank inlet NRV | 350 |
| 79 | RM00S015 | Condensate to feed water tank inlet NRV | 350 |
| 80 | RM00S016 | LP Heater 1 inlet drain valve | 50 |
| 81 | RM00S017 | LP Heater 1 outlet vent valve | 25 |
| 82 | RM00S018 | LP Heater 2 inlet drain valve | 50 |
| 83 | RM00S019 | LP Heater 2 outlet vent valve | 25 |
| 84 | RM00S020 | LP Heater 3 inlet drain valve | 50 |
| 85 | RM00S021 | LP Heater 3 outlet vent valve | 25 |
| 86 | RM00S022 | LP Condenser Hotwell Drain | 100 |
| 87 | RM00S023 | Gland steam Condenser Inlet vent valve | 25 |
| 88 | RM00S024 | Gland steam condenser Inlet drain valve | 25 |
| 89 | RM00S025 | Gland Steam Condenser Inlet Bypass Isol Valve | 50 |
| 90 | RM00S026 | LPH 1 Inlet bypass Isol Valve | 50 |
| 91 | RM00S027 | LPH 2 Inlet bypass Isol Valve | 50 |
| 92 | RM00S028 | LPH 3 Inlet Bypass Isol Valve | 50 |
| 93 | RM00S029 | LP Heater 1 Hydraulic test connection | 50 |
| 94 | RM00S030 | LP Heater 2 Hydraulic test connection | 50 |
| 95 | RM00S031 | LP Heater 3 Hydraulic test connection | 50 |
| 96 | RM00S032 | Condensate to LPH1 NRV | 500 |
| 97 | RM00S033 | LP Heaters condensate drain | 50 |
| 98 | RM00S034 | Gland Steam Condenser pipe vent valve | 25 |
| 99 | RM00S035 | Condensate Drain After Hotwell Reg Valve | 25/50 |
| 100 | RM00S040 | Gland steam Condenser Outlet vent valve | 25 |
| 101 | RM00S041 | Gland steam Condenser Outlet drain valve | 25 |
| 102 | RM01S001 | CEP A Suction Isol Valve | 800 |
| 103 | RM01S002 | CEP A Discharge NRV | 400 |
| 104 | RM01S006 | CEP's Suction Drain | 50 |
| 105 | RM02S001 | CEP B Suction Isol Valve | 800 |
| 106 | RM02S002 | CEP B Discharge NRV | 400 |
| 107 | RM02S003 | CEP B Discharge Isol Valve | 400 |
| 108 | RM02S004 | CEP B Suction relief valve | 50 |
| 109 | RM02S005 | CEP B Suction Drain Valve | 50 |
| 110 | RM03S001 | LP Bypass Spraywater bypass valve | 25 |
| 111 | RM04S001 | Seal Water System Isol Valve | 50 |
| 112 | RM04S002 | Seal Water Pressure Reducing valve | 50 |
| 113 | RM04S003 | Main Condenser Stand Pipe Filling Isol Valve | 25 |

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| 114 | RM04S004 | Seal Water Header Drain | 25 |
| 115 | RM04S005 | BFPT Seal Water Isolation | 25 |
| 116 | RM04S006 | Main Turbine Seal Water Isol Valve | 25 |
| 117 | RM04S007 | Air Extraction Seal Water Isol Valve | 25 |
| 118 | RM04S008 | LP Heater Seal Water Isol Valve | 25 |
| 119 | RM04S009 | LP Heater Seal Water Isol Valve | 25 |
| 120 | RM04S010 | LP Heater Seal Water Isol Valve | 25 |
| 121 | RM04S011 | LP Heaters Stand Pipe Filling NRV | 25 |
| 122 | RM04S012 | HP Heater 6A / 6B Stand Pipe Filling NRV | 25 |
| 123 | RM04S013 | HP Heater 5A / 5B Stand Pipe Filling NRV | 25 |
| 124 | RM04S014 | Seal Water to CEP A Isol Valve | 15 |
| 125 | RM04S015 | Seal Water to CEP B Isol Valve | 15 |
| 126 | RM04S016 | Filler Pipe to Loop LPH 1 | 25 |
| 127 | RM04S017 | LPH 1 Drain Pump A Seal Water Isol Valve | 15 |
| 128 | RM04S018 | LPH 1 Drain Pump B Seal Water Isol Valve | 15 |
| 129 | RM04S019 | Expansion Vessel Stand Pipe Filling | 25 |
| 130 | RM04S020 | BFPT Stand pipe Filling Isol Valve | 25 |
| 131 | RM04S021 | Seal Water to Flash Box 2 Isol Valve | 15 |
| 132 | RM05S002 | CRT Dumping from Condensate NRV | 300 |
| 133 | RM05S003 | Condensate Recirc Pipe Drain | 25 |
| 134 | RM06S001 | Condensate Reserve Tank Outlet V/v | 600 |
| 135 | RM06S002 | FWT Low limit emergency Reg V/v | 250 |
| 136 | RM06S004 | CRT Drain | 100 |
| 137 | RM06S005 | Condensate Reserve Tank Level Drain | 50 |
| 138 | RM06S006 | Condensate Reserve Tank Level Drain | 15 |
| 139 | RM06S007 | Condensate Recirc Pipe Drain | 50 |
| 140 | RM07S002 | CEP's Recirc Line Drain | 25 |
| 141 | RM08S001 | Flashbox Spraywater Valve | 65 |
| 142 | RM08S002 | LP Hood Spray Water Valve | 40 |
| 143 | RM08S003 | Flashbox Spraywater Bypass Isol Valve | 25 |
| 144 | RM09S001 | Recirc/Filling pump Suction Isolating | 100 |
| 145 | RM09S002 | Filling Pump Discharge Isol Valve | 80 |
| 146 | RM09S003 | Filling Pump Discharge NRV | 80 |
| 147 | RM09S004 | Leak off Pipe from Filling Pump Isolating | 50 |
| 148 | RM09S005 | Leak off Pipe from Filling Pump NRV | 50 |
| 149 | RM10S001 | GSC bypass Isol Valve | 500 |
| 150 | RM21S001 | EFP A Filling Isolation Check Valve | 50 |
| 151 | RM21S002 | EFP A Filling Isolation | 50 |
| 152 | RM22S001 | EFP B Filling Isolation Check Valve | 50 |
| 153 | RM22S002 | EFP B Filling Isolation | 50 |
| 154 | RM23S001 | BFPT Filling Isolation Check Valve | 50 |
| 155 | RM23S002 | BFPT Filling Isolation | 50 |
| 156 | RM30S001 | LPH 1 Bypass Isol Valve | 400 |
| 157 | RM40S001 | LPH 2 Bypass Isol Valve | 400 |
| 158 | RM70S001 | BFPT GSC Inlet Isol Valve | 125 |
| 159 | RM70S002 | BFPT GSC Outlet Isol Valve | 125 |
| 160 | RM70S003 | BFPT GSC Bypass Isol Valve | 125 |
| 161 | RM70S005 | BFPT CEP Discharge Drain Isolation | 25 |
| 162 | RM70S006 | BFPT GSC Condensate Drain | 25 |
| 163 | RM70S007 | BFPT GSC Condensate Vent | 25 |
| 164 | RM70S009 | BFPT Condenser Hot well Drain | 80 |
| 165 | RM70S010 | BFPT Condensate Inlet to Main Condenser Isolating | 25 |

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| 166 | RM70S011 | BFPT Condenser Condensate Drain | 25 |
| 167 | RM71S001 | BFPT CEP A Suction Isolation | 200 |
| 168 | RM71S003 | BFPT CEP A Discharge Isolation | 125 |
| 169 | RM71S004 | BFPT CEP A Suction Pipe Bent Isolation | 25 |
| 170 | RM71S005 | BFPT CEP A Seal Water Isolation | 15 |
| 171 | RM72S001 | BFPT CEP B Suction Isolation | 200 |
| 172 | RM72S003 | BFPT CEP B Discharge Isolation | 125 |
| 173 | RM72S004 | BFPT CEP B Suction Pipe Bent Isolation | 25 |
| 174 | RM72S005 | BFPT CEP B Seal Water Isolation | 15 |
| 175 | UG53S001 | Make-up water valve 4 nozzle | 80 |
| 176 | UG53S002 | Make-up water heater inlet isolating valve | 100 |
| 177 | UG53S003 | Make-up water heater outlet isolating valve | 100 |
| 178 | UG53S005 | Make-up water Heater inlet drain | 25 |
| 179 | UG53S006 | Demin Water Hydraulic Test Connection | 25 |
| 180 | UG53S007 | Make-up Water Heater Vent | 15 |
| 181 | UG53S008 | Make-up water valve 2 nozzle | 65 |
| 182 | UG54S001 | Make-up water heater bypass | 100 |
| 183 | UG70S003 | Feed water tank standpipe filling isolating valve | 25 |
| 184 | UG70S004 | Feed water tank standpipe filling check valve | 25 |
| 185 | RB00S100 | Hot reheat drain stop valve | 100 |
| 186 | RB00S101 | Hot reheat drain valve | 100 |
| 187 | RB00S102 | Hot Reheat Drain Pot Level Isol Valve | 25 |
| 188 | RB00S103 | Hot Reheat Drain Pot Level Isol Valve | 25 |
| 189 | RB40S001 | IP Bypass drain steam trap isolating valve | 25 |
| 190 | RB40S003 | IP Bypass Reg Valve Drain Valve | 25 |
| 191 | RC00S001 | HP Exhaust Drain Valve | 50 |
| 192 | RC01S002 | Cold reheat 1 drain stop valve | 100 |
| 193 | RC01S003 | Cold reheat drain valve 1 | 100/70 |
| 194 | RC01S004 | Starting Drain Cold Reheat Level Monitor Isolating | 25 |
| 195 | RC01S005 | Starting Drain Cold Reheat Level Monitor Isolating | 25 |
| 196 | RC01S008 | Cold Reheat Air Suction isolating valve | 50 - (2") |
| 197 | RC01S009 | Cold reheat air suction NRV | 50 - (2") |
| 198 | RC02S002 | Cold reheat 2 drain stop valve | 100 |
| 199 | RC02S003 | Cold reheat drain valve 2 | 100/70 |
| 200 | RC02S004 | Starting drain cold reheat level monitor Isolating | 25 |
| 201 | RC02S005 | Starting drain cold reheat level isolating valve | 25 |
| 202 | RC02S008 | Cold Reheat Air Suction isolating valve | 50 - (2" ANSI) |
| 203 | RC02S009 | Cold reheat air suction NRV | 50 - (2" ANSI) |
| 204 | RC20S002 | BFPT Cold reheat motorised drain valve | 25 |
| 205 | RC20S003 | Cold reheat & Auxiliary steam trap inlet valve | 25 |
| 206 | RC30S005 | Auxiliary steam CRH vent valve | 25 |
| 207 | RF51S005 | HP Heater 5A Standpipe vent | 25 |
| 208 | RF51S006 | HP Heater 5A vent | 25 |
| 209 | RF51S007 | HP Heater 5A vent to condensor | 25 |
| 210 | RF51S008 | HP Heater 5A Vent to Atmosphere | 15 |
| 211 | RF51S009 | HP Heater 5A Drain (regulating) | 50 |
| 212 | RF51S010 | HP heater 5A hydraulic test connection | 50 |
| 213 | RF51S011 | HP Heater 5A Standpipe filling | 25 |
| 214 | RF51S012 | HP Heater 5A BSV inlet Drain trap isol | 25 |
| 215 | RF51S014 | HP Heater 5A Standpipe bottom isol | 80 |

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| 216 | RF51S015 | HP Heater 5A Drain Isol | 50 |
| 217 | RF52S003 | HP Heater 5B Standpipe top isolation | 80 |
| 218 | RF52S004 | HP Heater 5B standpipe drain | 25 |
| 219 | RF52S005 | HP Heater 5B Standpipe Vent | 25 |
| 220 | RF52S006 | HP Heater 5B Vent | 25 |
| 221 | RF52S007 | HP Heater vent to condensor | 25 |
| 222 | RF52S008 | HP Heater 5B Vent to atmosphere | 15 |
| 223 | RF52S009 | HP Heater 5B Drain v/v (reg) | 50 |
| 224 | RF52S010 | HP Heater 5B Hydraulic test connection | 50 |
| 225 | RF52S011 | HP Heater 5B Standpipe filling | 25 |
| 226 | RF52S012 | HP Heater 5B BSV inlet Drain trap isol | 25 |
| 227 | RF52S014 | HP Heater 5B Standpipe bottom isol | 80 |
| 228 | RF52S015 | HP Heater 5B Drain v/v (isol) | 50 |
| 229 | RF61S003 | HP Heater Standpipe top isol v/v | 80 |
| 230 | RF61S004 | HP Heater 6A Standpipe drain v/v | 25 |
| 231 | RF61S005 | HP Heater 6A Standpipe vent | 25 |
| 232 | RF61S006 | HP Heater 6A vent | 25 |
| 233 | RF61S007 | HP heater 6A vent to Condensor | 25 |
| 234 | RF61S008 | HP Heater 6A vent to Atmosphere | 15 |
| 235 | RF61S009 | HP Heater 6A Drain (reg) | 50 |
| 236 | RF61S010 | HP Heater 6A Hydraulic test connection | 50 |
| 237 | RF61S011 | HP Heater 6A Standpipe filling | 25 |
| 238 | RF61S014 | HP heater 6A standpipe bottom isol | 80 |
| 239 | RF61S015 | HP Heater 6A Drain isol | 50 |
| 240 | RF62S003 | HP Heater 6B Standpipe top isol v/v | 80 |
| 241 | RF62S004 | HP Heater 6B Standpipe Drain v/v | 25 |
| 242 | RF62S005 | HP Heater 6B Standpipe Vent | 25 |
| 243 | RF62S006 | HP Heater 6B vent | 25 |
| 244 | RF62S007 | HP Heater 6B vent to Condensor | 25 |
| 245 | RF62S008 | HP heater 6B Vent to atmosphere | 15 |
| 246 | RF62S009 | HP Heater 6B Drain v/v (Reg) | 50 |
| 247 | RF62S010 | HP Heater 6B Hydraulic test connection | 50 |
| 248 | RF62S011 | HP Heater 6B standpipe filling | 25 |
| 249 | RF62S014 | HP Heater 6B Standpipe bottom isolation | 80 |
| 250 | RF62S015 | HP Heater 6B Drain v/v | 50 |
| 251 | RF50S002 | Extraction 5 Bled steam Drain valve | 25 |
| 252 | RF50S003 | Extraction 5 Drain valve | 25 |
| 253 | RF60S001 | Drain upstream HP Heaters 6A/6B | 25 |
| 254 | RH30S003 | Extraction 3 Bled steam drain valve | 40 |
| 255 | RH10S001 | LP Heater 1 Bled Steam Inlet Drain To Condenser | 25 |
| 256 | RH20S001 | LP Heater 2 Bled steam Inlet Drain to Condenser | 25 |
| 257 | RH30S002 | LP Heater 3 Bled steam Inlet Drain valve to condensor | 25 |
| 258 | RH40S006 | Extraction 4A Bled steam drain valve | 40 |
| 259 | RH40S007 | Extraction bypass to Feed water tank NRV | 125 |
| 260 | RH40S008 | Extraction bypass to Feed water tank NRV | 125 |
| 261 | RH40S009 | Extraction 4A FWT Drain valve | 65 |
| 262 | RH40S010 | FWT Bled steam pipe drain trap isol valve | 25 |
| 263 | RH40S016 | FWT Stand Pipe 1 Top Isol Valve | 80 |
| 264 | RH40S017 | FWT Standpipe 1 drain valve | 25 |
| 265 | RH40S018 | Feed water tank standpipe 1 vent | 25 |
| 266 | RH40S019 | FWT Standpipe 2 drain valve | 25 |
| 267 | RH40S020 | FWT Standpipe 2 vent | 25 |

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| 268 | RH40S021 | FWT vent valve to tundish | 50 |
| 269 | RH40S022 | FWT Vent to tundish | 50 |
| 270 | RH40S024 | Extraction to FWT Drain | 25 |
| 271 | RH40S025 | Vent to stork spray | 25 |
| 272 | RH40S026 | Vent to stork spray | 25 |
| 273 | RH40S027 | Extraction 4A Bled Steam Drain Isol valve | 25 |
| 274 | RH40S029 | Feed water tank standpipe 1 bottom isolating valve | 80 |
| 275 | RH40S030 | Feed Water Tank to tundish | 50 |
| 276 | RH40S031 | Feed Water Tank to tundish | 50 |
| 277 | RH45S002 | Extraction 4B to BFPT isol v/v | 500 |
| 278 | RH45S003 | Extraction 4B Bled steam drain valve | 40 |
| 279 | RH45S004 | BFPT Bled steam Emergency stop valve drain valve | 40 |
| 280 | RH45S005 | Extraction 4B Bled steam drain isol valve | 15 |
| 281 | RH45S007 | BFPT Bled steam ESV drain trap isol valve | 15 |
| 282 | RH45S009 | Extraction 4B to BFPT Isol Bypass v/v | 50 |
| 283 | RL00S001 | Feed pump discharge drain isol valve | 25 |
| 284 | RL00S002 | Feed pump discharge vent isol valve | 15 |
| 285 | RL00S003 | Feed pump discharge drain regulating valve | 25 |
| 286 | RL00S004 | Feed pump discharge vent regulating valve | 15 |
| 287 | RL01S001 | EFP A Suction isol v/v | 300 |
| 288 | RL01S005 | EFP A Suction Pipe vent valve | 25 |
| 289 | RL01S006 | EFP A Suction Balance Main Isol Valve | 100 |
| 290 | RL01S007 | EFP A Main pump inlet strainer drain isolating valve | 50 |
| 291 | RL01S008 | EFP A Discharge drain valve | 25 |
| 292 | RL01S009 | Feed pump Balance Main vent valve | 25 |
| 293 | RL01S011 | EFP A Booster Pump Inlet Strainer Air Release | 15 |
| 294 | RL01S012 | EFP A Main pump inlet strainer drain regulating valve | 50 |
| 295 | RL01S013 | EFP A Discharge drain regulating valve | 25 |
| 296 | RL02S001 | EFP B Suction isol v/v | 300 |
| 297 | RL02S005 | EFP B Suction pipe vent valve | 25 |
| 298 | RL02S006 | EFP B Suction Balance Main Isol Valve | 100 |
| 299 | RL02S007 | EFP B Main pump inlet strainer drain isolating valve | 50 |
| 300 | RL02S008 | EFP B Discharge drain valve | 25 |
| 301 | RL02S010 | EFP B Booster Pump Inlet Strainer Air Release | 15 |
| 302 | RL02S011 | EFP B Main pump inlet strainer drain regulating valve | 50 |
| 303 | RL02S012 | EFP B Discharge drain regulating valve | 25 |
| 304 | RL03S001 | BFPT Suction isol | 500 |
| 305 | RL03S004 | BFPT Suction pipe vent valve | 25 |
| 306 | RL03S005 | BFPT Suction Balance Main Isol Valve | 100 |
| 307 | RL03S010 | BFPT Main pump inlet strainer drain regulating valve | 50 |
| 308 | RL03S011 | BFPT Main Pump Discharge drain regulating valve | 25 |
| 309 | RL10S008 | HP Heater 5A FW inlet Drain v/v isol | 25 |
| 310 | RL10S009 | HP Heater 5A FW outlet Drain v/v isol | 25 |
| 311 | RL10S010 | HP Heater 6A FW outlet drain v/v isol | 25 |
| 312 | RL10S011 | HP heater 6A FW outlet vent v/v | 15 |
| 313 | RL10S012 | A Line HP Heaters inl Section Drain isol | 15 |
| 314 | RL10S013 | A line HP Heaters FW out Sect Drain (isol) | 15 |
| 315 | RL10S014 | A-line HP Heater Hydraulic test connection | 25 |
| 316 | RL10S015 | HPH 5A FW Inlet Drain Valve Regulating | 25 |
| 317 | RL10S016 | HP Heater 5A FW outlet Drain reg v/v. | 25 |
| 318 | RL10S017 | HP Heater 6A FW outlet Drain reg v/v | 25 |
| 319 | RL10S018 | HP Heater 6A FW outlet vent v/v (reg) | 15 |

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| 320 | RL10S019 | A line HP Heaters Inlet Section Drain Reg | 15 |
| 321 | RL10S020 | A-line HP Heater outlet Section Drain (Reg) | 15 |
| 322 | RL20S008 | HP Heater 5B FW inlet Drain (isol) | 25 |
| 323 | RL20S009 | HP Heater 5B FW outlet Drain (isol) | 25 |
| 324 | RL20S010 | HP Heater 6B FW outlet Drain Isol | 25 |
| 325 | RL20S011 | HP Heater 6B FW outlet vent (isol) | 15 |
| 326 | RL20S012 | B-Line HP Heater FW inlet Sect Drain (isol) | 15 |
| 327 | RL20S013 | B-Line HP heater outlet section drain valve | 15 |
| 328 | RL20S014 | B Line HP Heater Hydraulic Test Connection | 25 |
| 329 | RL20S015 | HP Heater 5B FW inlet Drain (reg) | 25 |
| 330 | RL20S016 | HP Heater 5B outlet Drain (reg) | 25 |
| 331 | RL20S017 | HP Heater 6B FW outlet Drain (reg) | 25 |
| 332 | RL20S018 | HP Heater 6B FW outlet vent (regl) | 15 |
| 333 | RL20S019 | B-Line HP Heater FW inlet Sect Drain Reg | 15 |
| 334 | RL20S020 | B-line HP Heater outlet section drain Reg | 15 |
| 335 | RL30S001 | HP Heater bypass Master Drain v/v | 25 |
| 336 | RL30S002 | HP Heater Bypass Slave drain | 25 |
| 337 | RL51S003 | EFP A Leak-off NRV | 100 |
| 338 | RL51S004 | EFP A Leak-off isolating valve | 100 |
| 339 | RL51S005 | EFP A Leak-off drain valve | 25 |
| 340 | RL52S003 | EFP B Leak-off NRV | 100 |
| 341 | RL52S004 | EFP B Leak-off isolating valve | 100 |
| 342 | RL52S005 | EFP B Leak-off drain valve | 25 |
| 343 | RL53S004 | BFPT Leak-off NRV | 150 |
| 344 | RL53S005 | BFPT Leak-off isolating valve | 150 |
| 345 | RL53S006 | BFPT Leak-off drain valve | 25 |
| 346 | RP51S001 | HP Heater 5 A Drain to Feed water tank NRV | 250 |
| 347 | RP51S002 | HP Heater 5A Drain to FWT isol v/v | 250 |
| 348 | RP51S004 | HP Heater 5A drain to FWT isolating valve | 300 |
| 349 | RP51S005 | HP Heater 5A Drain to FWT pipe Drain | 25 |
| 350 | RP51S006 | HP Heater Drain to FWT Vent | 15 |
| 351 | RP52S001 | HP Heater 5B Drain to Feed water tank NRV | 250 |
| 352 | RP52S002 | HP Heater 5B to FWT Isol v/v | 250 |
| 353 | RP52S004 | HP Heater 5B Drain to FWT isolating valve | 300 |
| 354 | RP52S005 | HP Heater to FWT pipe drain | 25 |
| 355 | RP52S006 | HP Heater 5B Drain to FWT vent | 15 |
| 356 | RP53S002 | HP Heater 5A to Condenser Drain v/v | 25 |
| 357 | RP53S003 | HP Heater 5A to Condenser Drain | 25 |
| 358 | RP54S002 | HP Heater 5B to condenser drain | 25 |
| 359 | RP54S003 | HP Heater 5B to condenser drain | 25 |
| 360 | RP63S002 | HP Heater 6A Drain to Condenser Pipe Drain | 25 |
| 361 | RP63S003 | HP Heater 6A Drain to condensor pipe drain | 25 |
| 362 | RP64S002 | HP Heater 6B Drain to Condenser pipe drain | 25 |
| 363 | RP64S003 | HP Heater 6B Drain to Condensor Pipe Drain | 25 |
| 364 | RQ00S002 | Auxiliary steam header drain valve | 25 |
| 365 | RQ00S003 | Auxiliary steam header drain trap inlet valve | 25 |
| 366 | RQ10S001 | FWT Warming steam isol v/v | 200 |
| 367 | RQ10S003 | Feed water start up NRV | 200 |
| 368 | RQ10S004 | Auxiliary steam to feed water tank NRV | 65 |
| 369 | RQ10S005 | DST Warming steam isol valve bypass | 25 |
| 370 | RQ10S006 | DST Warming steam pipe drain | 25 |
| 371 | RQ10S008 | Feed water Tank start-up emergency NRV | 200 |

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|-----|----------|---|---------|
| 372 | RQ20S001 | Main turbine Gland steam Isolating valve | 100 |
| 373 | RQ20S002 | Main turbine Gland steam pipe drain valve | 25 |
| 374 | RQ25S001 | Turbine Warming Aux Steam Valve | 150 |
| 375 | RQ30S005 | Unit 1 BBDV aux steam Drain | 25 |
| 376 | RQ30S021 | Unit 1 BBDV aux steam Drain | 25 |
| 377 | RQ30S022 | Unit 1 BBDV aux steam Drain | 25 |
| 378 | RQ31S001 | Aux steam header unit isolating v/v | 300 |
| 379 | RQ31S002 | Auxiliary steam Pre-warming drain valve | 25 |
| 380 | RQ31S003 | Auxiliary steam pre-warming drain valve | 25 |
| 381 | RQ31S004 | Auxiliary steam header drain trap inlet valve | 25 |
| 382 | RQ31S006 | Aux steam unit header isolating v/v | 300 |
| 383 | RQ31S007 | Auxiliary steam unit header vent isol valve | 25 |
| 384 | RQ31S008 | Auxiliary steam unit heater vent valve | 25 |
| 385 | RQ50S002 | BFPT Quick Start eject pipe drain inlet valve | 15 |
| 386 | RQ51S001 | BFPT Gland steam isol v/v | 50 |
| 387 | RQ60S001 | Extraction 5 Aux Steam Isol Units 1 and 2 | 150 |
| 388 | RQ60S031 | Extraction 5 Aux Steam Strainer Drain | 40 |
| 389 | RQ61S001 | Turbine Warming Header Steam valve | 150 |
| 390 | RQ61S002 | Extraction 5 Aux steam Unit header NRV | 150 |
| 391 | RQ61S003 | Extraction 5 Aux steam vent valve | 100 |
| 392 | RQ61S004 | Extraction 5 Aux steam isolating valve | 150 |
| 393 | RQ61S005 | Auxiliary Steam Header 2 Valve | 150 |
| 394 | RQ61S006 | Auxiliary Steam Header 2 Bypass Valve | 40 |
| 395 | RQ61S007 | Extraction 5 Auxiliary Steam NRV | 150 |
| 396 | RQ61S008 | Extraction 5 Auxiliary Steam Isol Section Vent Valve Isol | 25 |
| 397 | RQ61S009 | Extraction 5 Auxiliary Steam Isol Section Vent Valve | 25 |
| 398 | SA11S150 | IP Cooling Cold Steam | 40 |
| 399 | SA11S151 | Casing warming header drain | 15 |
| 400 | SA11S152 | Casing warming header drain | 25 |
| 401 | SA11S552 | HP Casing Heating NRV | 100 |
| 402 | SA11S553 | Turbine Warming Aux Steam NRV | 150 |
| 403 | SA11Z101 | IP Casing heating screen insert | 100 |
| 404 | SA11Z102 | IP Casing heating screen insert | 100 |
| 405 | SA12S053 | IP Cooling hot steam valve | 80 |
| 406 | SA12S054 | IP Cooling isolating valve | 65 |
| 407 | SA12S552 | IP Casing heating NRV | 100 |
| 408 | SA51S013 | BFPT control v/v 2 heating line isol valve | 50 |
| 409 | SG20S003 | Leak Steam Overflow Reg Valve | 200 |
| 410 | SG20S703 | Gland Steam NRV to Turbine Valves | 300 |
| 411 | SG22S005 | Gland steam isolating valve | 80 |
| 412 | SG24S110 | Turbine Gland Steam Temp Reg Isol Valve 1 | 25 |
| 413 | SG24S210 | Spray Nozzle 1 Isol Valve | 20 |
| 414 | SG24S211 | Spray Nozzle 2 Isol Valve | 20 |
| 415 | SG24S510 | Gland Steam Cooler Inlet Check Valve | 25 |
| 416 | SG60S001 | BFPT Gland Steam Pressure Reg Valve | 40/125 |
| 417 | SG60S503 | BFPT Overflow Throttle Damper | 50 |
| 418 | SG61S123 | BFPT Gland Steam Condenser Auxiliary Damper | 50 |
| 419 | SG61S720 | BFPT GSC Gland / Steam Exhaust to Atm NRV | 150/200 |
| 420 | SG61S921 | BFPT GSC Extractor NRV | 125/80 |
| 421 | SG62S005 | BFPT Seal Steam Start Up Valve | 40 |
| 422 | SH10S001 | HP Turbine inlet drain valve | 25 |
| 423 | SH10S009 | HP Chest Warming Valve 1 | 80 |

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|-----|----------|--|-----|
| 424 | SH10S010 | HP Chest Warming valve 2 | 80 |
| 425 | SH10S011 | IP Turbine inlet drain valve | 25 |
| 426 | SH10S012 | IP Cooling Mixing drain valve | 25 |
| 427 | SH10S013 | IP Cooling pipe drain valve | 25 |
| 428 | SH10S019 | IP Chest Warming valve 1 | 100 |
| 429 | SH10S020 | IP Chest Warming valve 2 | 100 |
| 430 | SH10S052 | Gland steam warming valve | 65 |
| 431 | SH10S053 | Auxiliary Steam Warming valve | 25 |
| 432 | SH10S101 | HP Turbine inlet Drain valve | 15 |
| 433 | SH10S109 | HP Chest Warming drain valve 1 | 15 |
| 434 | SH10S110 | HP Chest Warming drain valve 2 | 15 |
| 435 | SH10S111 | IP Turbine inlet drain valve | 15 |
| 436 | SH10S112 | IP Cooling Mixing drain valve | 15 |
| 437 | SH10S113 | IP Cooling Mixing pipe drain valve | 15 |
| 438 | SH10S119 | IP Chest Warming drain valve 1 | 15 |
| 439 | SH10S120 | IP Chest Warming drain valve 2 | 15 |
| 440 | SH10S156 | Gland Steam Condensate drain valve | 50 |
| 441 | SH10S553 | Drain Line NRV | 40 |
| 442 | SH50S001 | BFPT CRH ESV Warming valve | 50 |
| 443 | SH50S002 | BFPT Bled steam ESV Warming valve | 25 |
| 444 | SH50S003 | BFPT Casing Drain Valve | 25 |
| 445 | SH50S102 | BFPT Bled steam ESV Warming drain isol valve | 15 |
| 446 | SH50S104 | BFPT Seal steam drain valve | 15 |
| 447 | SH50S152 | BFPT Gland Steam Warming Drain Isol | 25 |
| 448 | SH50S156 | BFPT GSC Drain Isol to Steam Trap | 25 |
| 449 | SO10S005 | HP Chest warming valve 1 | 150 |
| 450 | SO10S105 | Heating Steam Pipe | 150 |
| 451 | SO10S505 | Heating Line Check Valve | 150 |
| 452 | RM71S002 | BFPT CEP A discharge NRV | 125 |
| 453 | RM72S002 | BFPT CEP B discharge NRV | 125 |
| 454 | RN10S001 | LP heater 1 Drain Pump A Suction iso v/v | 350 |
| 455 | RN10S002 | LP heater 1 Drain pump A NRV | 150 |
| 456 | RN10S003 | LP heater 1 Drain pump A discharge iso v/v | 250 |
| 457 | RN10S004 | LP heater 1 Drain pump B Suction iso v/v | 350 |
| 458 | RN10S005 | LP heater 1 Drain pump B NRV | 150 |
| 459 | RN10S006 | LP heater 1 Drain pump B discharge iso v/v | 250 |
| 460 | RN31S002 | LP heater 3 DST drain v/v | 25 |
| 461 | RQ40S002 | Start eject pipe drain trap inlet valve | 15 |
| 462 | RQ50S002 | BFPT start eject pipe drain trap inlet valve | 15 |
| 463 | RQ60S003 | Extraction 5 Aux steam isolating valve | 150 |
| 464 | RQ60S032 | Extraction 5 Aux steam drain v/v | 50 |
| 467 | RM73S001 | BFPT condensate recirc valve | 80 |

Turbine General valves to be refurbished during IRs and MGOs:

| No. | AKZ No. | Description |
|------------|----------------|---|
| 1 | RH10S002 | LP Heater 1 Standpipe top isolating valve |
| 2 | RH10S003 | LP Heater 1 Standpipe drain valve |
| 3 | RH10S004 | LP Heater 1 Standpipe vent valve |
| 4 | RH10S005 | LP Heater 1 Vent to Condenser |
| 5 | RH10S006 | LP Heater 1 Vent to Condenser |
| 6 | RH10S009 | Make-up Water Heater Bled Steam Isol |
| 7 | RH10S010 | Make-up Water Heater Vent to Condenser |
| 8 | RH10S011 | LP Heater 1 Standpipe bottom isolating valve |
| 9 | RH20S002 | LP Heater 2 Standpipe top isolating valve |
| 10 | RH20S003 | LP Heater 2 Standpipe drain valve |
| 11 | RH20S004 | LP Heater 2 Standpipe vent valve |
| 12 | RH20S005 | LP heater 2 Vent to Condensor |
| 13 | RH20S006 | LP heater 2 Vent to Condensor |
| 14 | RH20S009 | LP heater 2 Stand Pipe Bottom Isol Valve |
| 15 | RH30S004 | LP Heater 3 Standpipe top isolating valve |
| 16 | RH30S005 | LP Heater 3 Standpipe drain valve |
| 17 | RH30S006 | LP Heater 3 Standpipe vent valve |
| 18 | RH30S007 | LP Heater 3 Vent to condenser |
| 19 | RH30S008 | LP Heater 3 Vent to condenser |
| 20 | RH30S012 | LP Heater 3 Standpipe bottom isolating valve |
| 21 | RN10S006 | LP Heater 1 Drain Pump B Discharge Isol |
| 22 | RN10S008 | LP Heater 1 Drain Pump Condensate Inlet Isol Valve |
| 23 | RN10S009 | LP Heater 1 Drain Pumps Suction Drain |
| 24 | RN10S010 | LP Heater 1 Drain Pump A Suction Vent to LP Htr 1 |
| 25 | RN10S011 | LP Heater 1 Drain Pump B Suction Vent REG valve |
| 26 | RN10S012 | LP Heater 1 discharge vent valve |
| 27 | RN10S014 | LP Heater 1 drain pump discharge drain valve |
| 28 | RN10S015 | LP Heater 1 Drain Pump A Leak Off NRV |
| 29 | RN10S016 | LP Heater 1 drain pump A Leak Off Isol |
| 30 | RN10S017 | LP Heater 1 Drain Pump B Leak Off NRV |
| 31 | RN10S018 | LP Heater 1 drain pump B Leak Off Isol |
| 32 | RN10S019 | LP Heater 1 Drain Pumps leak-off drain valve |
| 33 | RN11S001 | LP Heater 1 Barometric Loop Drain |
| 34 | RN11S002 | LP Heater 1 Barometric Loop Test Point |
| 35 | RN12S001 | Make-up water heater drain to LP heater 1 |
| 36 | RN12S002 | Make-up water Heater hydraulic test Connection |
| 37 | RN20S001 | LP Heater 2 to LP Heater 1 dist isol v/v |
| 38 | RN21S002 | LP Heater 2 Dist drain valve |
| 39 | RU10S002 | Feed water tank drain isolating valve |
| 40 | RN30S001 | LPH 3 to LPH 2 Dist Isol Valve |
| 41 | RU20S001 | Expansion vessel drain to condenser isolating valve |
| 42 | RU20S006 | Expansion Vessel Emergency overflow water to pit |
| 43 | RM00S016 | LP Heater 1 inlet drain valve |
| 44 | RM00S017 | LP Heater 1 outlet vent valve |
| 45 | RM00S018 | LP Heater 2 inlet drain valve |
| 46 | RM00S019 | LP Heater 2 outlet vent valve |
| 47 | RM00S020 | LP Heater 3 inlet drain valve |
| 48 | RM00S021 | LP Heater 3 outlet vent valve |

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| 49 | RM00S022 | LP Condenser Hotwell Drain |
| 50 | RM00S023 | Gland steam Condenser Inlet vent valve |
| 51 | RM00S024 | Gland steam condenser Inlet drain valve |
| 52 | RM00S025 | Gland Steam Condenser Inlet Bypass Isol Valve |
| 53 | RM00S026 | LPH 1 Inlet bypass Isol Valve |
| 54 | RM00S027 | LPH 2 Inlet bypass Isol Valve |
| 55 | RM00S028 | LPH 3 Inlet Bypass Isol Valve |
| 56 | RM00S029 | LP Heater 1 Hydraulic test connection |
| 57 | RM00S033 | LP Heaters condensate drain |
| 58 | RM04S008 | LP Heater Seal Water Isol Valve |
| 59 | RM04S009 | LP Heater Seal Water Isol Valve |
| 60 | RM04S010 | LP Heater Seal Water Isol Valve |
| 61 | RM04S011 | LP Heaters Stand Pipe Filling NRV |
| 62 | RM04S012 | HP Heater 6A / 6B Stand Pipe Filling NRV |
| 63 | RM04S013 | HP Heater 5A / 5B Stand Pipe Filling NRV |
| 64 | RM04S014 | Seal Water to CEP A Isol Valve |
| 65 | RM04S015 | Seal Water to CEP B Isol Valve |
| 66 | RM04S016 | Filler Pipe to Loop LPH 1 |
| 67 | RM04S017 | LPH 1 Drain Pump A Seal Water Isol Valve |
| 68 | RM04S018 | LPH 1 Drain Pump B Seal Water Isol Valve |
| 69 | RM04S019 | Expansion Vessel Stand Pipe Filling |
| 70 | RM50S002 | LPH3 Bypass Hydraulic Test |
| 71 | RM40S002 | LPH 2 Bypass Isolation |
| 72 | UG53S001 | Make-up water valve 4 nozzle |
| 73 | UG53S008 | Make-up water valve 2 nozzle |
| 74 | RB00S100 | Hot reheat drain stop valve |
| 75 | RB00S101 | Hot reheat drain valve |
| 76 | RC01S002 | Cold reheat 1 drain stop valve |
| 77 | RC01S003 | Cold reheat drain valve 1 |
| 78 | RC02S002 | Cold reheat 2 drain stop valve |
| 79 | RC02S003 | Cold reheat drain valve 2 |
| 81 | RC20S002 | BFPT Cold reheat motorised drain valve |
| 85 | RF51S005 | HP Heater 5A Standpipe vent |
| 86 | RF51S006 | HP Heater 5A vent |
| 87 | RF51S007 | HP Heater 5A vent to condensor |
| 88 | RF51S008 | HP Heater 5A Vent to Atmosphere |
| 89 | RF51S009 | HP Heater 5A Drain (regulating) |
| 90 | RF51S012 | HP Heater 5A BSV inlet Drain trap isol |
| 91 | RF51S014 | HP Heater 5A Standpipe bottom isol |
| 92 | RF51S015 | HP Heater 5A Drain Isol |
| 94 | RF52S003 | HP Heater 5B Standpipe top isolation |
| 95 | RF52S004 | HP Heater 5B standpipe drain |
| 96 | RF52S005 | HP Heater 5B Standpipe Vent |
| 97 | RF52S006 | HP Heater 5B Vent |
| 98 | RF52S007 | HP Heater vent to condensor |
| 99 | RF52S008 | HP Heater 5B Vent to atmosphere |
| 100 | RF52S009 | HP Heater 5B Drain v/v (reg) |
| 101 | RF60S002 | LPH 6B Vent |
| 102 | RF61S012 | LPH 6B Vent |
| 103 | RF62S012 | LPH 6B Vent |
| 104 | RF62S013 | LPH 6B Vent |

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| 105 | RF52S014 | HP Heater 5B Standpipe bottom isol |
| 106 | RF52S015 | HP Heater 5B Drain v/v (isol) |
| 108 | RF61S003 | HP Heater Standpipe top isol v/v |
| 109 | RF61S004 | HP Heater 6A Standpipe drain v/v |
| 110 | RF61S005 | HP Heater 6A Standpipe vent |
| 111 | RF61S006 | HP Heater 6A vent |
| 112 | RF61S007 | HP heater 6A vent to Condensor |
| 113 | RF61S008 | HP Heater 6A vent to Atmosphere |
| 114 | RF61S009 | HP Heater 6A Drain (reg) |
| 115 | RF51S003 | HP Heater 5A Standpipe Top Iso Valve |
| 116 | RF51S004 | HP Heater 5A Standpipe drain v/v |
| 117 | RF61S014 | Hp heater 6A standpipe bottom isol |
| 118 | RF61S015 | HP Heater 6A Drain isol |
| 120 | RF62S003 | HP Heater 6B Standpipe top isol v/v |
| 121 | RF62S004 | HP Heater 6B Standpipe Drain v/v |
| 122 | RF62S005 | HP Heater 6B Standpipe Vent |
| 123 | RF62S006 | HP Heater 6B vent |
| 124 | RF62S007 | HP Heater 6B vent to Condensor |
| 125 | RF62S008 | HP heater 6B Vent to atmosphere |
| 126 | RF62S009 | HP Heater 6B Drain v/v (Reg) |
| 128 | RF62S011 | HP Heater 6B standpipe filling |
| 129 | RF62S014 | HP Heater 6B Standpipe bottom isolation |
| 130 | RF62S015 | HP Heater 6B Drain v/v |
| 131 | RF50S002 | Extraction 5 Bled steam Drain valve |
| 132 | RF50S003 | Extraction 5 Drain valve |
| 133 | RF60S001 | Drain upstream HP Heaters 6A/6B |
| 134 | RH10S001 | LP Heater 1 Bled Steam Inlet Drain To Condenser |
| 135 | RH20S001 | LP Heater 2 Bled steam Inlet Drain to Condenser |
| 136 | RH30S002 | LP Heater 3 Bled steam Inlet Drain valve to condensor |
| 137 | RH40S003 | Extraction 4A Bled Steam Isolating Valve |
| 138 | RH45S002 | Extraction 4B to BFPT isol v/v |
| 139 | RH45S004 | BFPT Bled steam Emergency stop valve drain valve |
| 140 | RL01S001 | EFP A Suction isol v/v |
| 143 | RL01S006 | EFP A Suction Balance Main Isol Valve |
| 144 | RL02S001 | EFP B Suction isol v/v |
| 147 | RL02S006 | EFP B Suction Balance Main Isol Valve |
| 148 | RL03S001 | BFPT Suction isol |
| 150 | RL03S005 | BFPT Suction Balance Main Isol Valve |
| 151 | RL03S113 | Main Pump Air Release |
| 155 | RL10S008 | HP Heater 5A FW inlet Drain v/v isol |
| 156 | RL10S009 | HP Heater 5A FW outlet Drain v/v isol |
| 157 | RL10S010 | HP Heater 6A FW outlet drain v/v isol |
| 158 | RL10S011 | HP heater 6A FW outlet vent v/v |
| 159 | RL10S012 | A Line HP Heaters inl Section Drain isol |
| 160 | RL10S013 | A line HP Heaters FW out Sect Drain (isol) |
| 161 | RL10S014 | A-line HP Heater Hydraulic test connection |
| 162 | RL10S015 | HPH 5A FW Inlet Drain Valve Regulating |
| 163 | RL10S016 | HP Heater 5A FW outlet Drain reg v/v. |
| 164 | RL10S017 | HP Heater 6A FW outlet Drain reg v/v |
| 165 | RL10S018 | HP Heater 6A FW outlet vent v/v (reg) |

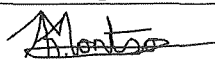
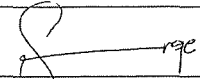
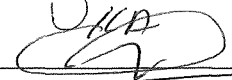
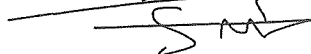
| | | |
|-----|-----------------|---|
| 166 | RL10S019 | A line HP Heaters Inlet Section Drain Reg |
| 167 | RL10S020 | A-line HP Heater outlet Section Drain (Reg) |
| 180 | RL20S008 | HP Heater 5B FW inlet Drain (isol) |
| 181 | RL20S009 | HP Heater 5B FW outlet Drain (isol) |
| 182 | RL20S010 | HP Heater 6B FW outlet Drain Isol |
| 183 | RL20S011 | HP Heater 6B FW outlet vent (isol) |
| 184 | RL20S012 | B-Line HP Heater FW inlet Sect Drain (isol) |
| 185 | RL20S013 | B-Line HP heater outlet section drain valve |
| 186 | RL20S014 | B Line HP Heater Hydraulic Test Connection |
| 187 | RL20S015 | HP Heater 5B FW inlet Drain (reg) |
| 188 | RL20S016 | HP Heater 5B outlet Drain (reg) |
| 189 | RL20S017 | HP Heater 6B FW outlet Drain (reg) |
| 190 | RL20S018 | HP Heater 6B FW outlet vent (regl) |
| 191 | RL20S019 | B-Line HP Heater FW inlet Sect Drain Reg |
| 192 | RL20S020 | B-line HP Heater outlet section drain Reg |
| 202 | RL30S001 | HP Heater bypass Master Drain v/v |
| 203 | RL30S002 | HP Heater Bypass Slave drain |
| 204 | RL51S003 | EFP A Leak-off NRV |
| 206 | RL52S003 | EFP B Leak-off NRV |
| 207 | RL53S004 | BFPT Leak-off NRV |
| 212 | RP51S001 | HP Heater 5 A Drain to Feed water tank NRV |
| 213 | RP51S002 | HP Heater 5A Drain to FWT isol v/v |
| 214 | RP51S004 | HP Heater 5A drain to FWT isolating valve |
| 215 | RP51S005 | HP Heater 5A Drain to FWT pipe Drain |
| 216 | RP51S006 | HP Heater Drain to FWT Vent |
| 217 | RP52S001 | HP Heater 5B Drain to Feed water tank NRV |
| 218 | RP52S002 | HP Heater 5B to FWT Isol v/v |
| 219 | RP52S004 | HP Heater 5B Drain to FWT isolating valve |
| 220 | RP52S005 | HP Heater to FWT pipe drain |
| 221 | RP52S006 | HP Heater 5B Drain to FWT vent |
| 222 | RP53S002 | HP Heater 5A to Condenser Drain v/v |
| 223 | RP53S003 | HP Heater 5A to Condenser Drain |
| 224 | RP54S002 | HP Heater 5B to condenser drain |
| 225 | RP54S003 | HP Heater 5B to condenser drain |
| 226 | RP63S002 | HP Heater 6A Drain to Condenser Pipe Drain |
| 227 | RP63S003 | HP Heater 6A Drain to condensor pipe drain |
| 228 | RP64S002 | HP Heater 6B Drain to Condenser pipe drain |
| 229 | RP64S003 | HP Heater 6B Drain to Condensor Pipe Drain |
| 230 | RQ10S001 | FWT Warming steam isol v/v |
| 231 | RQ10S003 | Feed water start up NRV |
| 232 | RQ10S004 | Auxiliary steam to feed water tank NRV |
| 233 | RQ10S008 | Feed water Tank start-up emergency NRV |
| 234 | RQ20S001 | Main turbine Gland steam Isolating valve |
| 235 | RQ20S002 | Main turbine Gland steam pipe drain valve |
| 236 | RQ25S001 | Turbine Warming Aux Steam Valve |
| 237 | RQ31S001 | Aux steam header unit isolating v/v |
| 238 | RQ40S001 | Steam Ejector Steam Valve |
| 239 | RQ50S001 | BFPT Ejector Steam Valve |
| 240 | SH10S001 | HP TRB Inlet Drain Valve |
| 241 | SH10S010 | HP Chest Warming valve 2 |

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| 242 | SH10S011 | IP Turbine inlet drain valve |
| 243 | SH10S012 | IP Cooling Mixing drain valve |
| 244 | SH10S013 | IP Cooling pipe drain valve |
| 245 | SH10S019 | IP Chest Warming valve 1 |
| 246 | SH10S020 | IP Chest Warming valve 2 |
| 247 | SH10S052 | Gland steam warming valve |
| 248 | SH10S053 | Auxiliary Steam Warming valve |
| 249 | SH10S009 | HP Chest Warming valve |

Turbine General valves to be refurbished during opportunity maintenance:

| No. | Akz number | Description |
|-----|------------|---|
| 1 | RM70S009 | BFPT Condenser Hot well Drain |
| 2 | RF51S003 | HP heater 5A standpipe top isol v/v |
| 3 | RF62S003 | HP Heater 5B Standpipe bottom isol |
| 4 | RL01S006 | EFP A Suction balance main isol v/v |
| 5 | RL02S006 | EFP B Suction balance main isol v/v |
| 6 | RL03S005 | BFPT Suction balance main isol v/v |
| 7 | RC01S002 | Cold reheat 1 drain stop valve |
| 8 | RC02S002 | Cold reheat 2 drain stop valve |
| 9 | RC01S003 | Cold reheat drain valve 1 |
| 10 | RC02S003 | Cold reheat drain valve 2 |
| 12 | RQ61S003 | Extraction 5 Aux steam vent valve |
| 13 | RB00S101 | Hot reheat drain valve |
| 14 | RB00S100 | Hot reheat stop valve |
| 15 | SH10S019 | IP Chest Warming valve 1 |
| 16 | SH10S020 | IP Chest Warming valve 2 |
| 17 | RM00S022 | LP Condenser Hotwell Drain |
| 18 | RM71S003 | BFPT CEP A Discharge Isolation |
| 19 | RM72S003 | BFPT CEP B Discharge Isolation |
| 20 | RM70S010 | BFPT Condensate Inlet to Main Condenser Isolating |
| 21 | RQ61S001 | Aux Steam unit Header isolating valve |
| 22 | RQ60S001 | Auxiliary steam header 2 vlv 1 |
| 23 | RQ61S005 | Extraction 5 Aux steam isolating valve |
| 24 | RQ61S007 | Extraction 5 Aux steam NRV |
| 25 | SO10S105 | Heating Steam Pipe |
| 26 | SO10S005 | HP Chest warming valve 1 |
| 27 | RM71S001 | BFPT CEP A Suction Isolation |
| 28 | RM72S001 | BFPT CEP B Suction Isolation |
| 29 | RU21S001 | Expansion Vessel Drain Pump A Suction Isol |
| 30 | RU22S001 | Expansion Vessel Drain Pump B Suction Isol |
| 31 | RU20S006 | Expansion Vessel Emergency overflow water to pit |
| 32 | RQ10S008 | Feed water Tank start-up emergency NRV |
| 33 | RU10S002 | FWT drain isolating valve |
| 34 | RU10S003 | FWT Overflow Isol valve |
| 35 | RU10S001 | FWT Overflow reg valve |
| 36 | RQ10S001 | FWT Warming steam isol v/v |
| 37 | SG20S003 | Leak Steam Overflow Reg Valve |
| 38 | RM06S002 | FWT Low limit emergency Reg v/v |

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| 39 | RP51S001 | | HP Heater 5 A Drain to Feed water tank NRV |
| 40 | RP51S002 | | HP Heater 5A Drain to FWT isol v/v |
| 41 | RP52S001 | | HP Heater 5B Drain to Feed water tank NRV |
| 42 | RP52S002 | | HP Heater 5B Drain to FWT Isol v/v |
| 43 | RN10S008 | | LP Heater 1 Drain Pump Condensate Inlet Isol Valve |
| 44 | RN20S001 | | LP Heater 2 to LP Heater 1 dist isol v/v |
| 45 | RQ31S001 | | Aux steam header unit isolating v/v |
| 46 | RQ31S006 | | Aux steam unit header isolating v/v |
| 47 | RM05S002 | | CRT Dumping from Condensate NRV |
| 48 | RL01S001 | | EFP A Suction isol v/v |
| 49 | RL02S001 | | EFP B Suction isol v/v |
| 50 | SG20S703 | | Gland Steam NRV to Turbine Valves |
| 51 | RP51S004 | | HP Heater 5A drain to FWT isolating valve |
| 52 | RP52S004 | | HP Heater 5B Drain to FWT isolating valve |
| 53 | RM00S014 | | Condensate to feed water tank inlet NRV |
| 54 | RM00S015 | | Condensate to feed water tank inlet NRV |
| 55 | RH10S009 | | Make-up Water Heater Bled Steam Isol |
| 56 | RM01S003 | | CEP A Discharge Isol Valve |
| 57 | RM01S002 | | CEP A Discharge NRV |
| 58 | RM02S003 | | CEP B Discharge Isol Valve |
| 59 | RM02S002 | | CEP B Discharge NRV |
| 60 | RM30S001 | | LPH 1 Bypass Isol Valve |
| 61 | RM40S001 | | LPH 2 Bypass Isol Valve |
| 62 | RL03S001 | | BFPT Suction isol. |
| 63 | RM00S032 | | Condensate to LPH1 NRV |
| 64 | RH45S002 | | Extraction 4B to BFPT isol v/v |
| 65 | RM00S001 | | Gland Steam Condenser Inlet Isol Valve |
| 66 | RM00S002 | | Gland Steam Condenser Outlet Isol Valve |
| 67 | RM10S001 | | GSC bypass Isol Valve |
| 68 | RM00S005 | | LPH 1 Inlet Isol Valve |
| 69 | RM00S006 | | LPH 1 Outlet Isol Valve |
| 70 | RM00S008 | | LPH 2 Inlet Isol Valve |
| 71 | RM00S009 | | LPH 2 Outlet Isol Valve |
| 72 | RM00S011 | | LPH 3 Inlet Isol Valve |
| 73 | RM00S012 | | LPH 3 Outlet Isol Valve |
| 74 | RM06S001 | | Condensate Reserve Tank Outlet v/v |
| 75 | RM01S001 | | CEP A Suction Isol Valve |
| 76 | RM02S001 | | CEP B Suction Isol Valve |

| Name | Designation | Signature |
|-------------------|---------------------------|--|
| Katleho Montso | O&M Engineer |  |
| Sandile Mdunge | Project Co-Ordinator |  |
| Kamohelo Monyatso | Snr Supervisor |  |
| Samkelo Mgobo | Snr Technical Maintenance |  |