Eskom	Specification	Medupi Power Station

Title: **Medupi Power Station HVAC Maintenance Services Works Information**

Document Identifier: **240-113172477**

Alternative Reference Number:

Area of Applicability: **Medupi Power Station**

Functional Area: **Maintenance C&I**

Revision: **4**

Total Pages: **37**

Next Review Date: **December 2029**

Disclosure Classification: **Controlled Disclosure**

Compiled by	Supported by	Functional Responsibility	Authorized by
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Date:	Date: 2025/12/10	Date: 10/12/2025	Date: 2025/12/09

Content Page

1. Introduction

The Heating, Ventilation and Air-Conditioning (HVAC) system is installed throughout the plant in Medupi Power station. Eskom Medupi Power Station Management has decided to outsource the HVAC maintenance services to a suitably qualified, experienced and well-established *Contractor* to carry-out the erection, commissioning, corrective maintenance, preventive maintenance, take over and hand over of activities related to HVAC equipment and plant.

Systems and plant down time must be minimized as far as possible by ensuring that adequate cooling of the buildings (offices and workshops), equipment and switchgear rooms is achieved. The HVAC system must therefore be well maintained to achieve high availability and reliability levels of all related field equipment.

This document describes the details of the applicable requirements, works information, specifications, terms & conditions as well as the criteria for the required services to be rendered.

2. Supporting Clauses

2.1 Scope

This document sets out the detailed User Works Information requirements necessary for theHVAC Maintenance Services.

2.1.1 Purpose

The purpose of this document is to define a User Works Information requirement for establishmentof Term Service Contract (TSC) between the *Employer* and the *Contractor*.

Medupi Power Station is expected to perform at 92% UCF, 6% PCLF and 2% UCLF, and the specified Maintenance Services must support this requirement.

It is therefore imperative that the successful and suitably qualified *Contractor* aligns the organization and fully complies with these specified scope activities and processes stipulated in this document.

2.1.2 Applicability

This document shall apply to the TSC for Maintenance Services at Medupi Power Station.

2.1.3 Effective date

The effective date of this document is as per the date and signature of the authorizer, as indicated on the cover page of this document.

2.2 Normative/Informative References

Parties using this document shall apply the most recent edition of the documents listed in the following paragraphs.

2.2.1 Normative

[1] ISO 9001 Quality Management Systems.

[2] 240 - 97020108 REV. 5 Medupi Maintenance Contracts User Requirement Specification (URS).

[3] 32 – 1303 Process Control Manual (PCM) for Execute Maintenance Work.

[4] 32 – 1304 Process Control Manual (PCM) for Manage Work.

[5] 240-126794245 Medupi Power Station Maintenance Execution Strategy HVAC

2.2.2 Informative

[1]. Act No 85 Occupational Health and Safety Act & Regulations.

[2]. 240-46554063: Safety Health Environmental and Quality Policy.

[3]. GGR-0992.Plant Safety Regulations.

2.3 Definitions

2.3.1. Ad hoc: A solution designed for a specific problem or task, non-generalizable, and not intended to be able to be adapted to other purposes.

2.3.2. *Contractor:* Partnership agreements and service provider contracted for supplying specific service to Eskom Generation Medupi Power Station.

2.3.3. Controlled Disclosure: Controlled disclosure to external parties (either enforced by law, or discretionary.

2.3.4. *Employer:* Eskom or Eskom Generation, Medupi Power Station.

2.3.5. Parties: The *Employer* and the *Contractor.*

2.3.6. *Service Manager*: The Employer's representative in regard to the contract agreement.

2.3.7. *Task Order:* The *Service Manager's* instruction to perform a task. SAP PM orders will also be used as task orders.

2.4 Abbreviations

Abbreviation	Explanation
C&I	Control and Instrumentation.
EW	Emergent Work.
HVAC	Heating, Ventilation, and Air Conditioning
NEC3	New Engineering Contract.
NRC	Notification Response Compliance.
OEM	Original Equipment Manufacturer.
PCLF	Planned Capability Load Factor
PCM	Process Control Manual.
PDF	Portable Document Format.
PM	Preventive Maintenance.
PMC	Preventive Maintenance Compliance.
QCP	Quality Control Plan.
SAP	Systems, Applications Products.
SAP PM	SAP Plant Maintenance
SCSA	Strategic & Critical Spares Availability.
SOV	Statutory Order Violations.
SOW	Scope of Work.
TSC	Term Service Contract.
UCF	Unit Capability Factor
UCLF	Unplanned Capability Loss Factor
URS	User Requirement Specification.

2.5 Roles and Responsibilities

2.5.1 Employer

Manage the Medupi Power Station Maintenance Services contact in terms of NEC3 Term Service Contract's procedures and guidelines.

Manage the Medupi Power Station HVAC Maintenance Services contact in term of the 240 - 97020108 REV. 5 Medupi Maintenance Contracts User Requirement Specification (URS).

2.5.2 Contractor

Provide a maintenance service to the *Employer* in accordance with 240–113172477 Medupi Power Station C&I Maintenance Services SOW URS.

Ensure that quality workmanship is delivered in Process for Monitoring in accordance to the Worls Information as stipulated within 240–113172477 Medupi Power Station Maintenance Services Works Information.

Obey an instruction which is in accordance to the contract and is given to him by the *Service*

Manager. Acts in accordance with the Health and Safety requirements as stated in 240–113172477 Medupi Power Station HVAC Maintenance Services SOW.

2.6 Process of Monitoring

Maintenance process monitoring shall be done by means of the following:

2.6.1 Process Control Manuals (PCM)

[1]. 32 – 1303 Process Control Manual (PCM) for Execute Maintenance Work.

[2]. 32 – 1304 Process Control Manual (PCM) for Manage Work.

2.6.2 On – Line Maintenance

[1]. Preventive Maintenance Compliance (PMC).

[2]. Notification Response Compliance (NRC).

[3]. Statutory Order Violations (SOV).

[4]. Emergent Work (EW).

2.7 Related/Supporting Documents

[1]. 240-97020108 REV. 5 Medupi Maintenance Contracts User Requirement Specification (URS).

[2]. 237-0090 Medupi User Scope of Work Specification.

[3]. NEC 3 Term Service Contract.

[4]. 32–1303 Process Control Manual (PCM) for Execute Maintenance Work.

[5]. 32–1304 Process Control Manual (PCM) for Manage Work.

3. Document Content

3.1 General

3.1.1 Adherence to Eskom General Policies & Standards

The Employees of the *Contractor* shall comply with Eskom's policies and site regulations. The 240-97020108 Medupi Maintenance Contracts User Requirement Specification Rev.5 aims to normalise contract agreements and as such should be used as the point of departure on which this service contract will be based.

3.1.2 Quality Standard

The *Contractor* shall provide a complete Quality Assurance plan in accordance with the requirements of ISO 9001: 2010 – Quality Management to the Employer for approval. This plan must ensure an integrated quality service as part of the contract.

Execution of all quality related activities, including inspection and test plans compilation and execution, stores material quality inspections and all quality-related record keeping is part of the *Contractor's* scope of work.

Workmanship shall, at all times, be of a grade accepted as the best practice of the particular trade involved and as stipulated in written standards of recognised organisations or institutes of the respective trades, except as exceeded or qualified by the specifications. The *Employer* shall determine the acceptability of workmanship.

3.1.3 Document Control

All contractual communication between the *Employer* and *Contractor* shall be in written format accompanied by an official letterhead and signed by the authorised *Parties*.

All attached documentation shall be in the format of Microsoft Word/ Excel and/ or Power Point.

All contractual communication letterheads and attached documentation shall be electronically mailed as per PDF format.

3.1.4 Contractual Meetings

The *Contractor* shall be required to adhere to and take part in the following meetings being held by the *Service Manager* and/ or person delegated in writing to do so:

a) Safety File Meeting.

b) Contractual Start – up Meeting.

c) ADHOC Meetings.

3.1.5 Correspondence

All verbal and non – verbal communication between the *Employer* and *Contractor* which this contract requires shall be communicated in a form which can be read, copied and recorded. All correspondence between the *Parties* shall be in written format and exchanged by means of electronic mail service.

The rules of NEC3; Term Service Contract will set out the requirement for both *Parties.*

3.1.6 Legal Requirements

Operating Regulations for High-Voltage Systems and Plant Safety Regulations

The *Contractor's* employees shall be trained within the terms of the Operating Regulations for High-Voltage Systems and Plant Safety Regulations implemented at Medupi Power Station.

The *Employer* shall decide be means of a risk assessment whether the Operating Regulations for High-Voltage Systems and/ or Plant Safety Regulations training will be required.

The Contractor shall ensure that all technically qualified (above semi-skilled) Contractor`s personnel are trained and authorised as responsible persons (in terms of PSR and ORHVS) for any work performed on the plant. This will require individuals to successfully complete a written and oral examination for the relevant regulation based on the Plant Safety Regulations and Operating Regulations for High Voltage Systems within 12 months of contract award date.Initial training will be supplied by the Employer.

The first attempt shall be paid by the *Employer* and the *Contractor* shall be responsible for the costs of other attempts should the employees fail to obtain authorisation.

3.1.7. *Task Order*

The *Contractor* shall by no means carry out any maintenance work in terms of the Works Information, without the approval of the *Employer*.

The *Contractor* shall by no means carry out any maintenance work in terms of the Works Information, without the approval an official SAP Task Order Number being supplied by the *Employer* to the *Contractor.*

3.2 Manpower

3.2.1 Competent Personnel

The *Contractor* shall make use of competent personnel which has been fully trained and authorised to provide the required Maintenance Services as stipulated in the Works Information. The *Contractor* shall supply the *Employer* with valid documentation as proof regarding the competency (See Appendix A) of their personnel.

3.2.2 Structure

This structure (See Appendix B) is a generic structure on which initial resource planning shall be based. Phasing in of resources need to be defined and agreed on.

The *Contractor* is required to do an assessment on resource utilisation using SAP - PM and the effectiveness of the generic structure and make proposals on how to optimise resources into a final working structure.

3.3 Tools and Electrical Equipment

The *Contractor* shall supply their own tools and electrical equipment when providing the Maintenance Services to the *Employer.*

The *Contractor* shall provide a comprehensive list of all tools and electrical equipment to be used for the Maintenance Service before entering the premises of the *Employer.*

All tools and electrical equipment shall be checked for compliance purposes before commencement of work and during the period of contract by the *Employer*.

Refer to document 240–97020108 Medupi Power Station Maintenance Contracts User Requirement Specification. See Section 3.2.2 Site Service provided by the *Employer*.

3.4 Tools and Electrical Equipment

The contractor will be provided with an area where they can establish their Mobile Office, Ablution, tools, and storage FACILITIES (Park homes)

a) The contractor will be required to establish mobile workspace units to serve as Office, Ablution, and storage Containers/Units for the contractor's staff, on site.
b) The contractor will be responsible for connection of power from the nearest Eskom supply point to the various mobile workspace units.
c)The contractor will also be responsible for the connection of potable water from the supply by the Employer to the various units that require potable water.
d) The contractor will be required to install Sewage removal pipes from the ablution mobile units to the nearest connection sewage pipeline of the employer.
e) The contractor will be required to supply a rental price as well as a price to purchase the Units in which case the units will become the property of the employer.
f) The contractor will be required to maintain the Mobile units for the duration of the contract. The Contractor will rectify any defects immediately or as soon as practically possible, at the contractors cost. The Employer may conduct inspections at any time and instruct the contract to rectify any defects, at the contractor's cost.
g) It is estimated that the mobile workspaces listed in table 1 will be required for this contract. For evaluation purposes the contractors will be required to quote on mobile space that provides this functionality and accommodation capacities. When Eskom does have these some of these facilities available, the contractor will be responsible to relocate them if required. Final facilities will be negotiated with the successful contractor and mobilising any facility or movement of any facility only be done on instruction of the employer. It should be noted that these are the minimum envisage facilities and if the successful contract wants to mobiles additional facilities it will be at the contracts cost.

3.5 Transport

3.5.1 Vehicle transport to and from the *Employer's* Premises

The *Contractor* shall be responsible to provide means of transport in order to get employees, spares and tools onto and out from *Employer* premises.

The *Contractor* shall ensure that all employees who is authorised to drive a motor vehicle/ specialised vehicle have the required authorisation to do so.

The *Contractor* shall supply the *Employer* with the required legal authorisation as proof of compliance.

The *Employer* shall provide two quantities of 4X4 Bakkies for the Contractor to perform daily corrective and preventative maintenance across all plants including Coal and Ash for safe execution of task, one quantity of 4X2 Bakkie to cover Supervisor's standby. The *Employer* shall also provide one quantity of 22 seater vehicle and one quantity of 16 seater vehicle for employees to be transported from home-work-home.

3.6 Site Services Provided by the *Employer*

3.6.1 Site Facilities

Refer to document 240 – 97020108 Medupi Power Station Maintenance Contracts User Requirement Specification. See Section 3.2.2 Site Service provided by the *Employer*.

3.7 Services Provided By the *Contractor*

The *Contractor* shall be required to supply a maintenance service in terms of the Works Information of a permanent basis for the duration of the contract period.

The contract period for this contract is 5 years.

The *Contractor* shall be based at Medupi Power Station on a permanent basis for the duration of the contract period.

Refer to document 240 – 97020108 Medupi Power Station Maintenance Contracts User Requirement Specification. See Section 3.2.3 Site Service provided by the *Contractor*.

3.8 Works Information

3.8.1 Plant Areas to Be Covered

The *Contractor* shall be responsible for the maintenance of all HVAC equipment installed on Medupi Power Station and shall also be responsible for implementing and adhering to good housekeeping practices in plant rooms and any other facility allocated to the *Contractor* in terms of their maintenance responsibilities.

The following plant areas shall be covered it accordance to the Works Information:See Appendix

C – Plant Areas To Be Covered.

The employees of the *Contractor* will be expected to be involved with erection, commissioning, take over and hand over activities related to HVAC equipment and plant.

In terms of taking over plant, the supervisor(s) of the *Contractor* will advise the *Employer* on plant condition and suitability for take over.

The *Contractor* shall be responsible for maintenance services for the plants that are handed over to the *Employer*. The *Employer* shall decide by means of a risk assessment whether the *Contractor* shall maintain the plants that are not yet hand to the *Employer*.

3.8.2 Maintenance of Medupi Power Station HVAC Systems.

The contractor shall perform maintenance as per 240-126794245 Medupi Power Station Maintenance Execution Strategy Heating Ventilation and Air Conditioning (HVAC)

The contractor shall perform planned and unplanned maintenance, and repairs on the following, but not limited to; HVAC systems:

- Access Control Building
- Admin Building
- Admin Island Chiller Yard
- Air Cooled Condenser Sub Station
- All domestic Air conditioners installed in buildings
- Ash Conditioning Sub Station
- Ash Conveyor Sub Station
- Ash Dump Sub Station and Ash Stackers
- Ash dump workshop
- Boiler Motor Room
- Bulk Fuel Oil Sub Station
- CEP Pump Room and VSD Area
- Coal Plant Sub Station
- Coal Silo Sub Station
- Coal Stockyard North Sub Station.
- Coal Stockyard Office, Coal Stackers and Coal Reclaimer
- Coal Stockyard South Sub Station
- Compressor House North

- Compressor House South
- Compressor House South Sub Station
- Condensate Polishing plant Sub Station
- Facilities
- Fire and Medical Station
- Fire Pump House
- IT and Communication Building.
- Pulse Jet Fabric Filter Plant Sub Station
- Raw Water Substation
- Sewage Treatment Plant
- Smoke Stack North and South
- Sub Station West
- Turbine Hall Ventilation Fans. (Unit 6-1)
- Unit 6 -1 Excitation room
- Unitized CPP sample conditioning room chiller units
- Water Treatment Plant Building
- Water Treatment Plant Laboratory
- Water Treatment Plant Sub Station
- Workshops and stores
- Other plants that will be handed-over to Medupi Generation Division during the duration of the contract

The contractor shall be equipped to maintain, repair, replace and fault finding HVAC components which include but not limited to;

Mechanical
• Chilled water pumps
• Chilled water valves and piping
• Ducting and ducting repair works on ventilation system
• Chemical dosing for Chilled water system
• Fan
• Air Handling Unit and its ancillaries
• All elements on the refrigeration cycle

Electrical:
• Chiller electronics (PC Cards, contactors etc.)
• Control and instrumentation
• Network Control Panel
• All instrumentation on HVAC system (Transmitters, gauges, switches, sensors)

Additionally, the contract shall be equipped and skilled in:
• Chiller heat exchanger installation (braising)
• Pump installations and alignments (Where applicable)
• Piping and valve installation for chiller plants

• Compressor installation
• Fan installation and alignment (where applicable)
• Split unit maintenance and installation

Where the contractor is unable to execute a task, they can use approved OEM support or the OEM. The contractor is required to provide OEM support letter from each of the following OEM:
• CIAT, Carrier, Airwell, Apache and Trane.

HVAC equipment to be maintained include but not limited to the drawing attached on Appendix D.

The contractor shall also be responsible for ensuring the chilled water is kept within acceptable specifications and chemical dosing is done on the chilled water annually /or as and when required.

3.8.3 Work Preparation and Work Management

a) Adherence to the Works Management process is of utmost importance.

b) The Eskom Plant Safety regulations shall always be adhered to.

c) Risk assessments shall be done and documented for each job.

d) Safe working procedures or temporary working procedures shall be available and used for each job.

e) The staff shall perform Job Observations on the required frequencies.

f) All documentation required to complete work shall be referenced and filed for future reference. (Test results, reports, drawings, etc.).

3.8.4 Required resources

#	**Designation**	**Requirements**	**Total**
1.	Site manager	National Diploma/Degree, ECSA professional registration with SAIRAC registration plus 5 years' experience	1
2.	Admin clerk	Diploma/Certificate in the relevant function at NQF level 4 plus 2 years' experience	1
3.	Safety Officer	National Diploma in Safety Management or equivalent plus 2 years' experience	1
4.	HVAC Supervisor	National Diploma in; 1- Refrigeration and air conditioning/Electrical 1- Electrical (Instrumentation and Control)/ Mechatronics 1-Mechanical. Plus 3 years experience and refrigeration licence	3
5.	HVAC Technicians	National Diploma; 4-Electrical/ Refrigeration and air conditioning 3-Mechanical	10

		3 Electrical (Instrumentation and Control)/ Mechatronics plus 2 years experience and refrigeration licence	
6.	HVAC Artisans	N3 Electrical/Mechanical/Mechatronics/C&I and Refrigeration plus 2 years experience	10
7.	Semi- Skilled	Grade 12	5
8.	Utility man	Abet	5
Total			**36**

3.8.5 Training

a) All artisans and supervisors should be trained and authorised as Responsible Persons (RP) in terms of Plant Safety Regulations and Operating Regulations for High Voltage Systems. This training will be provided by the Employer within 3 months of contract award date. Authorization of the persons as RPs will be through the Employer authorization committee within 3 months of theoretical training and thereafter RPs will be expected to undergo re-authorization every two years.

b) All necessary training in relation to the scope of this contract shall be provided by the contractor e.g., forklift, working at heights, tele handlers, scissor lifts, cherry pickers, cranes etc.

c) Semi-skilled are to be authorised for access on ORHVS.

d) Contractor must ensure that a training plan is documented.

3.8.6 Specialist consultation

As and when required on a minimum 4 times a year the *Contractor* should call out the HVAC Specialist to support the HVAC team on the complex plant issues.

3.8.7 Standby Services

The *Contractor* shall provide a team of employees that are qualified and have adequate expertise to manage the plant area issues on a 24 – hour standby service.

The *Contractor* shall ensure that there are at least two persons available for standby service.

One for standby and the other a backup in cases of emergency.

Response time to a callout shall be 45 minutes from the time that the *Contractor*'s standby person was notified of the plant concern until the person report on site.

The *Contractor* shall provide a Technical Backup Support service from their Technical Support Section is also required. Normal response time of 12 hours for the person to arrive on Medupi Power Station site is expected.

3.8.8 Condition Based Maintenance

Applicable to all HVAC equipment connected to the BMS system:

a) Online monitoring of all input and output signals.

b) Online monitoring of all field devices such as temperature devices etc.

c) Online verifications of all applied settings and software configurations.

d) Evaluation of all alarms signals initiated.

e) Evaluation of all HVAC equipment for correctness against design specifications.

f) Evaluation of all plant configurations to ensure correct plant status.

g) Online implementation of setting and software configuration changes as per modification process and record keeping thereof.

h) Downloading and record keeping of critical data for audit purposes.

3.8.9 Plant and Material

The Contractor shall be required to:

a) Provide tools required for fault finding, inspections, repairs, maintaining, replacing and fitting as well as commissioning.

b) Supply consumables required for repairing, maintaining, replacing and fitting as per plant specifications. Examples of consumables include but is not limited to bearings; gaskets; seals; gases such as refrigerant; universal air conditioning remotes; chiller internal components, ducting material etc.

c) Replace and repair damaged HVAC ducting as per original design layout.

d) Any damage caused to existing spares is repaired by the Contractor at his own cost prior to takeover.

e) The Contractor shall provide all relevant hand tools for the trade.

The *Contractor* shall be expected to make recommendations regarding to the inventory strategies to ensure that the correct spares are available in the Medupi Power Station Materials Management Warehouse.

3.8.10 Continuous Improvement

The *Contractor* shall implement a program of continuous improvement to optimise plant performance and reduce system and equipment failures.

The *Contractor* will be responsible for participating in root cause failure investigations requiredby the Employer.

The *Contractor* will participate in improvement programs pertaining to plant equipment.

3.8.11 Management and Reporting

The *Contractor* will be responsible for implementing a performance management system consistent with the Employers supplier management requirement.

The KPA's and KPI's required will be jointly agreed by the *Employer* and the *Contractor*.

Typical KPI's can include but not limited to:

- Plant and/ or equipment availability.
- Plant and/ or equipment reliability.
- Works management program compliance.
- Safety.
- Financial performance indicators.

4. Acceptance

This document has been seen and accepted by:

Name	Designation
Mbongeni Mqadi	Maintenance Group Manager.
Lerato Sehume	Maintenance C&I Manager.
Centy Selala	Maintenance RWM Manager (Acting).
Snenhlanhla Khumalo	Engineering System Engineer.
Tumelo Chauke	Maintenance C&I Senior Supervisor.
Tankiso Mpebe	Maintenance C&I Senior Supervisor.
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Cornelius Mulaudzi	Maintenance C&I Senior Supervisor.

5. Revisions

Date	Rev.	Compiler	Remarks
December 2020	2	Nare Hopane	Compilation of Medupi Power Station HVAC Maintenance Services Scope of Work User Requirement Specification.
April 2025	3	Tumelo Chauke	Compilation of Medupi Power Station HVAC Maintenance Services Scope of Work User Requirement Specification.
December 2025	4	Snenhlanhla Khumalo	Compilation of Medupi Power Station HVAC Maintenance Services Scope of Work

6. Development Team

The following people were involved in the development of this document:

- Nare Senama
- Lerato Sehume
- Sibonelo Khanyile
- Mufarisi Manyuha
- Tumelo Chauke
- Snenhlanhla Khumalo
- Benji Rahlogo

7. Acknowledgements

Not Applicable.

8. Appendix

8.1 Appendix A – Job Descriptions

Supervisor.

Eskom Generation	12. **JOB DESCRIPTION**	KC - 30 / E REV F

DIVISION :	**GENERATION**	BU :	**POWER STATIONS**
DEPARTMENT :	**MAINTENANCE**	SECTION :	**MAINTENANCE**
DESIGNATION :	**SENIOR SUPERVISOR TECH MAINTENANCE**	JOB CODE :	**GEN 282**

JOB MISSION / PURPOSE : **To perform supervisory activities.**

KEY PERFORMANCE AREAS (APPLICABLE TO BU MANAGERS, MANAGERIAL LEVEL & NON BARGAINING EMPLOYEES

FUNCTIONAL OUTPUTS / ACTIVITIES : (Functional outputs are normally applicable to managerial posts and should be described in terms of end results to be achieved).	%	**KEY RECEIVERS**
1. PERFORM SUPERVISORY ACTIVITIES	20	Engineering OPS Production Maint Staff Services HR
1.1 Determine priorities and delegate activities. 1.2 Advise staff iro queries and problems encountered. 1.3 Implement and maintain the performance management system. 1.4 Verify compliance to statutory and Eskom requirements, identify and address deviations. 1.5 Address industrial relations issues as per delegation. 1.6 Coordinate and control all activities to achieve set KPI's. Identify possible short falls and initiate action to correct. 1.7 Approve all administrative related requests ie leave applications, timesheets, overtime worked, standby roster etc. Check that requests comply with legislative and Conditions of Service practices. Identify and address non-compliances. 1.8 Mentor and informally coach staff.		
2. CO-ORDINATE MAINTENANCE WORK PLANS IN SUB SECTION	15	
2.1 Influence and implement proposed plans taking into account high priority defects, production targets, plant availability, unplanned maintenance, staff, contractors and spares availability etc. 2.2 Consolidate actions / activities, cancel or accelerate activities. 2.3 Investigate work not completed. 2.4 Approve maintenance work plans.		

1 TASK : Gx GENERIC (TECHNICAL) JOB DESCRIPTIONS MAINTENANCE - 12 SNR SUPERVISOR

JOB DESCRIPTION (CONTINUE)		
FUNCTIONAL OUTPUTS / ACTIVITIES :	**%**	**KEY RECEIVERS**
2.5 Enhance the maintenance business processes by utilizing the computerized maintenance management systems. 2.6 Verify the description on defects for correctness, clarity and completeness. Make required changes. 2.7 Verify correctness of history and quality maintenance system.		
3. ENFORCE PERMIT TO WORK SYSTEM	**5**	
3.1 Take out permits. 3.2 Do job observations and check compliance to legislative requirements and implement corrective actions. 3.2 Explain the procedure for the job and all risks involved to staff. Check that staff apply the correct permit practices. 3.3 Clear the permits when work is completed and when workers register has been signed off. 3.4 Monitor and control overdue permits. 3.5 Apply and / or approve permit extensions.		
4. CO-ORDINATE THE SAFETY RISK MANAGEMENT PROGRAMME	**10**	
4.1 Conduct inspections of all tools, protective clothing and equipment used by the staff. Give guidance on how to use equipment in correct and safe manner. 4.2 Hold daily toolbox talks. 4.3 Conduct regular plant inspections. 4.4 Attend and actively participate in the statutory monthly safety meetings. 4.5 Conduct / participate in incident investigations and compile investigation reports. 4.6 Develop / implement safe work procedures.		
5. CONTROL SUB SECTION FINANCES	**10**	
5.1 Compile budget. 5.2 Approve expenditure as per delegation. 5.3 Identify variances, compile variance explanation reports and implement corrective actions. 5.4 Conduct monthly projections.		

JOB DESCRIPTION (CONTINUE)

FUNCTIONAL OUTPUTS / ACTIVITIES :	%	KEY RECEIVERS
6. CONTROL THE EXECUTION OF MAINTENANCE ACTIVITIES	**25**	
6.1 Propose modifications to optimize maintenance practices and costs by determining risks, impact and compatibility with existing systems components.		
6.2 Pro-actively identify potential risks and implement actions to mitigate.		
6.3 Check that approved modification documents are completed correctly before implementation and hand-over.		
6.4 Verify commissioning / recommissioning activities of plant after maintenance / modifications.		
6.5 Check that all drawings, testsheets and documentation are updated and correct.		
6.6 Analyse work methods to improve productivity.		
6.7 Perform / check / control job observations.		
6.8 Initiate and control investigations of recurring plant problems in sub section.		
6.9 Verify that maintenance activities meet quality requirements. Identify and correct non-compliances.		
7. PERFORM ADMINISTRATIVE ACTIVITIES	**5**	
7.1 Recommend spares list, store stock and spares holdings.		
7.2 Compile and review procedures, work practices etc.		
7.3 Provide technical advise for the purchasing of materials / spares. Compile specifications when required and do technical evaluations.		
8. CO-ORDINATE AND CONTROL CONTRACT WORK	**10**	
8.1 Verify that contractors comply with certification requirements.		
8.2 Verify that equipment meets specification requirements.		
8.3 In case of any non-compliance, initiate specific action.		
8.4 Check that work performed is in accordance with contract / standards / requirements. Identify and address non-compliances.		
8.5 Check that services provided are as per contract requirements.		
9. PERFORM ANY OTHER LEGITIMATE ACTIVITY AS REQUIRED.		

JOB DESCRIPTION (CONTINUE)

FUNCTIONAL OUTPUTS / ACTIVITIES :	%	KEY RECEIVERS

MINIMUM QUALIFICATION : **GRADE 12 + 3 TECHNICAL**	RELATED EXPERIENCE : **5 YEARS**

SKILLS / COMPETENCIES REQUIRED (INCLUDES INTERNAL TRAINING) :

SUPERVISORY SKILLS
BUDGETING SKILLS
PLANNING SKILLS
SCHEDULING SKILLS
COMPUTER LITERATE
HV / LV AUTHORISATION
SHE KNOWLEDGE
NEC KNOWLEDGE
QC KNOWLEDGE
KNOWLEDGE OF GENERAL MAINTENANCE PROCESSES AND SYSTEMS

N. Moshoeli
NAME

SIGNATURE

This serves to confirm that this job profile was graded prior to July 2008 and that the job exists in the Generation Division TASK folder. The job is therefore valid and acceptable in GX

JOB GRADE	JOB EVALUATION COMMITTEE DESIGNATION	GRADING CONFIRMED
T13	SIGNATURE _____ DATE _____	NAME _____ SIGNATURE _____ DATE _____

Technician.

Eskom Generation	5 (1) **JOB DESCRIPTION**	KC - 30 / E REV F

DIVISION :	**GENERATION**	BU :	**POWER STATIONS**
DEPARTMENT :	**MAINTENANCE**	SECTION :	**ELEC(HC&LC), MECHANICAL,C&I, TURBINE**
DESIGNATION :	**TECHNICIAN**	JOB CODE :	**GEN 286**

JOB MISSION / PURPOSE: **To assure optimum reliability and availability of plant.**

KEY PERFORMANCE AREAS (APPLICABLE TO BU MANAGERS, MANAGERIAL LEVEL & NON BARGAINING EMPLOYEES

FUNCTIONAL OUTPUTS / ACTIVITIES : (Functional outputs are normally applicable to managerial posts and should be described in terms of end results to be achieved).	%	**KEY RECEIVERS**
1. MAINTAIN OPTIMISATION OF ALLOCATED SYSTEM	**30**	Engineering Maintenance OPS Commercial Production
1.1 Investigate and analyse returned to work documents, case history, manuals, manufacturing specifications to determine root cause of recurring defects / incidents.		
1.2 Identify and test potentially faulty components / equipment and record results. Initiate and / or repair and replace faulty components / equipment.		
1.3 Identify potential problems and initiate proactive measures to correct timeously.		
1.4 Conduct maintenance activities by complying with all standards, procedures and instructions.		
1.5 Write and submit comprehensive reports detailing problems, possible solutions and alternatives with cost justifications.		
1.6 Evaluate equipment by studying drawings and manuals.		
1.7 Set up and adjust components / equipment installed according to specifications.		
1.8 Compile and review work procedures.		
1.9 Perform QC activities.		
2. VERIFY THAT CORRECT COMPONENTS / SPARES / SERVICES ETC ARE PROCURED	**10**	
2.1 Perform quality checks of goods received against technical specifications.		
2.2 Perform quality control inspections of services rendered.		
2.3 Update spares descriptions and holding levels on computerised maintenance system.		

JOB DESCRIPTION (CONTINUE)

FUNCTIONAL OUTPUTS / ACTIVITIES :	%	KEY RECEIVERS
3. ASSIST WITH MODIFICATIONS TO IMPROVE RELIABILITY OF PLANT	**5**	
3.1 Analyse faults and determine whether modification or replacement components are required.		
3.2 Analyse trends and determine whether modification on systems is required.		
3.3 Draft modifications on drawings.		
3.4 Perform tests and evaluate modifications as per specifications.		
4. ADVISE AND ASSIST WITH STAFF DEVELOPMENT	**10**	
4.1 Simulate plant conditions on test rigs to demonstrate operation of equipment / components.		
4.2 Provide advice iro plant problems and possible solutions.		
4.3 Provide on job training and coaching.		
4.4 Periodically assess trainees, utilitymen and artisans on ability to perform work related activities.		
4.5 Conduct on job observations and make recommendations.		
5. ATTEND AND PARTICIPATE IN MEETINGS, DISCUSSIONS ETC AND WRITE COMPREHENSIVE REPORTS AS REQUIRED.	**5**	
6. PROVIDE BUDGET REQUIREMENTS.	**5**	
7. PERFORM PROJECTS / CONTRACT SUPERVISION ACTIVITIES	**10**	
7.1 Supervise contractor activities as per contract.		
7.2 Perform job observations and implement corrective actions.		
7.3 Explain the procedure for the job and all risks involved to staff. Check that staff apply the correct permit practices.		
7.4 Clear permits after being signed off.		
8. COMPLY TO PERMIT TO WORK SYSTEM *	**5**	
8.1 Take out permits.		
8.2 Do job observations and check compliance to legislative requirements and implement corrective actions.		
8.3 Explain the procedure for the job and all dangers involved to staff. Check staff apply the correct permit practices.		
8.4 Clear permits when work is completed and when workers register has been signed off.		

JOB DESCRIPTION (CONTINUE)

FUNCTIONAL OUTPUTS / ACTIVITIES :	%	KEY RECEIVERS
8.5 Monitor and control overdue permits. 8.6 Apply and / or approve permit extensions. * *Mostly at Koeberg nuclear power station.*		
9. PERFORM ADMINISTRATION ACTIVITIES	**15**	
9.1 Develop and compile task lists and BOM's. 9.2 Record / report full details (technical and cost related history) of work carried out on notification / defects and scheduled work (planned maintenance) documents prior to submission with special reference to material repairs carried out and equipment used.		
10. ASSIST WITH RECOMMISSIONING OF PLANT AND PERFORM TESTS AND INSPECTIONS AS REQUIRED.	**5**	
11. PERFORM ANY OTHER LEGITIMATE ACTIVITY AS REQUIRED.		

MINIMUM QUALIFICATION : **GRADE 12 + 3 TECHNICAL**	RELATED EXPERIENCE : **2 YEARS**

SKILLS / COMPETENCIES REQUIRED (INCLUDES INTERNAL TRAINING) :

ANALYSING	**QUALITY CONTROL**
HV / LV REGULATIONS	**SAFETY KNOWLEDGE**
COMPUTER LITERACY	**COMMUNICATION**
PROBLEM SOLVING	**DIAGNOSES**

JOB DESCRIPTION APPROVED BY :

N. Moshoi

NAME SIGNATURE

This serves to confirm that this job profile was graded prior to July 2008 and that the job exists in the Generation Division TASK folder. The job is therefore valid and acceptable in GX

JOB GRADE	JOB EVALUATION COMMITTEE DESIGNATION		GRADING CONFIRMED
T11	SIGNATURE	DATE	NAME SIGNATURE DATE

Utility Man.

Eskom Generation	**13. JOB DESCRIPTION**	KC - 30 / E REV F

DIVISION :	**GENERATION**	BU :	**POWER STATIONS**
DEPARTMENT :	**MAINTENANCE**	SECTION :	**ELECTRICAL**
DESIGNATION :	**UTILITYMAN (ELECTRICAL)**	JOB CODE :	**GEN 323**

JOB MISSION / PURPOSE : **To perform semi-skilled maintenance activities.**

KEY PERFORMANCE AREAS (APPLICABLE TO BU MANAGERS, MANAGERIAL LEVEL & NON BARGAINING EMPLOYEES

FUNCTIONAL OUTPUTS / ACTIVITIES : (Functional outputs are normally applicable to managerial posts and should be described in terms of end results to be achieved).	%	**KEY RECEIVERS**
1. CARRY OUT BATTERY MAINTENANCE ACTIVITIES	**20**	Maintenance
1.1 Obtain a LAR or permit to carry out battery maintenance.		
1.2 Utilize basic battery test equipment applicable to different types of batteries ie meter, hydrometer, thermometer, TMC module, insulated tools etc to carry out daily tasks tests.		
1.3 Check daily and according to preventative maintenance schedules the voltage, specific gravities, temperatures, condition and electrolyte levels on all lead acid and alkaline batteries on site and report abnormalities.		
1.4 Fill-up battery water levels when required.		
1.5 Clean all batteries and battery room floors.		
1.6 Report all defects and conditions to supervisor		
1.7 Assist with, battery discharge tests and moving batteries when required and under supervision.		
2. CARRY OUT SEMI-SKILLED MAINTENANCE ACTIVITIES	**20**	
2.1 Assist with faultfinding on defective lights.		
2.2 Obtain material required to assist with corrective action on defective lights.		
2.3 Complete notifications.		
2.4 Do physical inspections and identify lights that are out of order.		
2.5 Carry out earth leakage tests and record findings.		
2.6 Dig cable trenches, lay electrical cables and backfill trenches.		
2.7 Dispose of electrical lamps and tubes as per procedure.		
2.8 Collect spares from stores receiving when required.		

JOB DESCRIPTION (CONTINUE)		
FUNCTIONAL OUTPUTS / ACTIVITIES :	**%**	**KEY RECEIVERS**
3. CARRY OUT SEMI-SKILLED MAINTENANCE ACTIVITIES ON FILTERS	**20**	
3.1 Do manometer calibration check. 3.2 Remove dirty filters and replace them with clean / new filters. 3.3 Clean dirty filters and allow them to dry out.		
4. CARRY OUT SEMI-SKILLED MAINTENANCE ACTIVITIES ON TRANSFORMERS	**10**	
4.1 Perform visual inspections as per checksheet and identify which breathers require silica gel replacement. 4.2 Replace silica gel in breathers as required. 4.3 Replace oil in breather oil containers.		
5. CARRY OUT SEMI-SKILLED BOARD MAINTENANCE ACTIVITIES	**10**	
5.1 Clean boards of dust ingress. 5.2 Verify electrical connections for tightness. 5.3 Clean floors.		
6. CARRY OUT SEMI-SKILLED MAINTENANCE ACTIVITIES UNDER SUPERVISION	**10**	
6.1 Strip components into its various parts. 6.2 Clean the parts of the components. 6.3 Replace the bearings. 6.4 Reassemble the components. 6.5 Paint the components when required.		
7. ASSIST WITH CLEANING ACTIVITIES	**10**	
7.1 Clean the workshop. 7.2 Repaint workshop floor demarcated areas. 7.3 Clean workshop vehicle as required		
8. PERFORM ANY OTHER LEGITIMATE ACTIVITY AS REQUIRED.		

8.2 Appendix C Plant to Be Covered

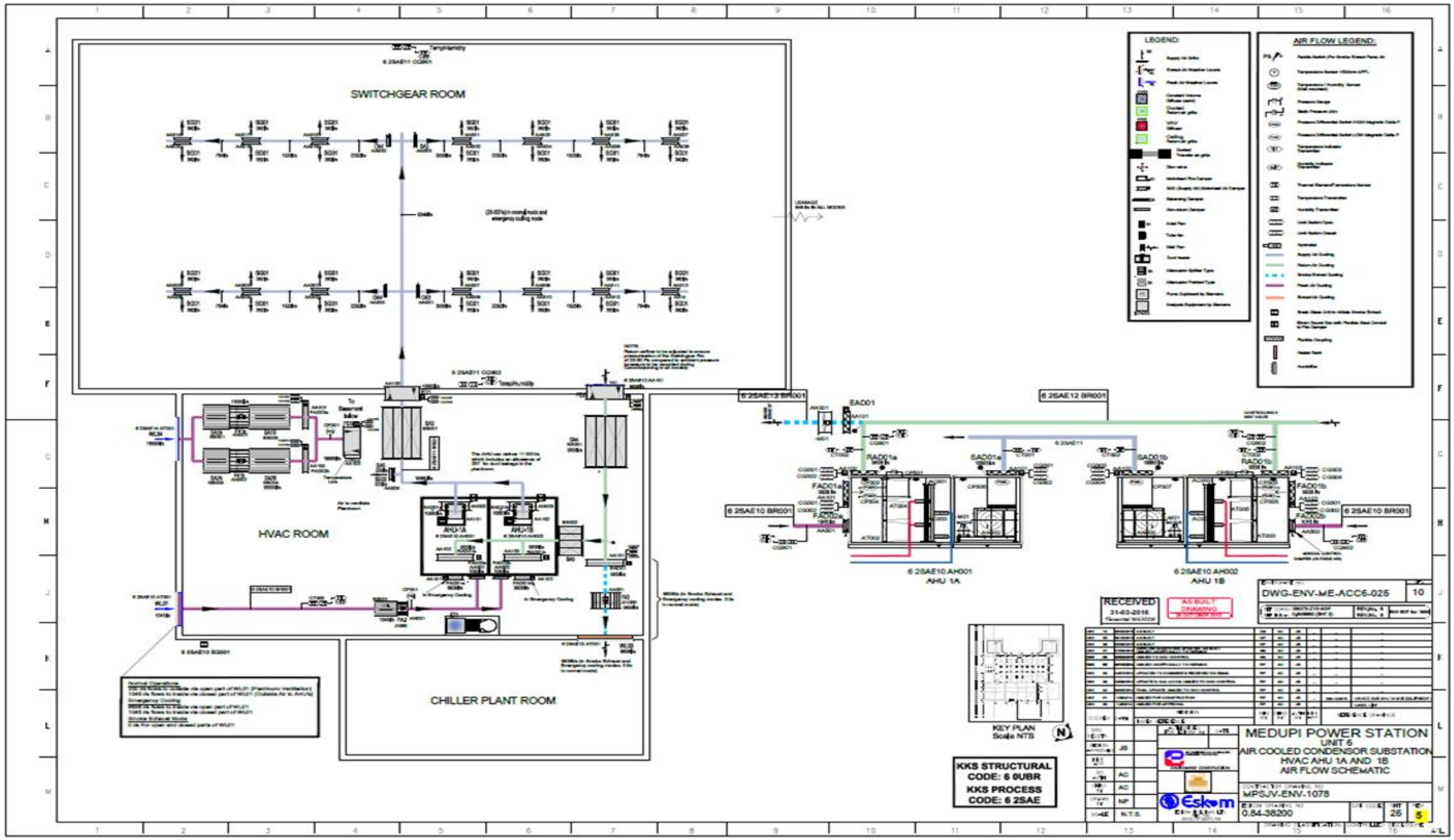
The following plant areas are to be covered as per Scope detailed in section 3.7.

Access Control Building
ACC Switchgears
Admin Building
Admin Island Chiller Yard
Air Cooled Condenser Sub Station
All domestic Air conditioners installed in buildings
Ash Conditioning Sub Station
Ash Conveyor Sub Station
Ash Dump Sub Station and Ash Stackers
Ash dump workshop
Auxiliary Bay (1-6)
Boiler Motor Room
CEP Pump Room and VSD Area
Coal Plant Sub Station
Coal Silo Sub Station
Coal Stockyard North Sub Station.
Coal Stockyard Office, Coal Stackers and Coal Reclaimer
Coal Stockyard South Sub Station
Compressor House North
Compressor House South
Condensate Polishing plant Sub Station
Facilities

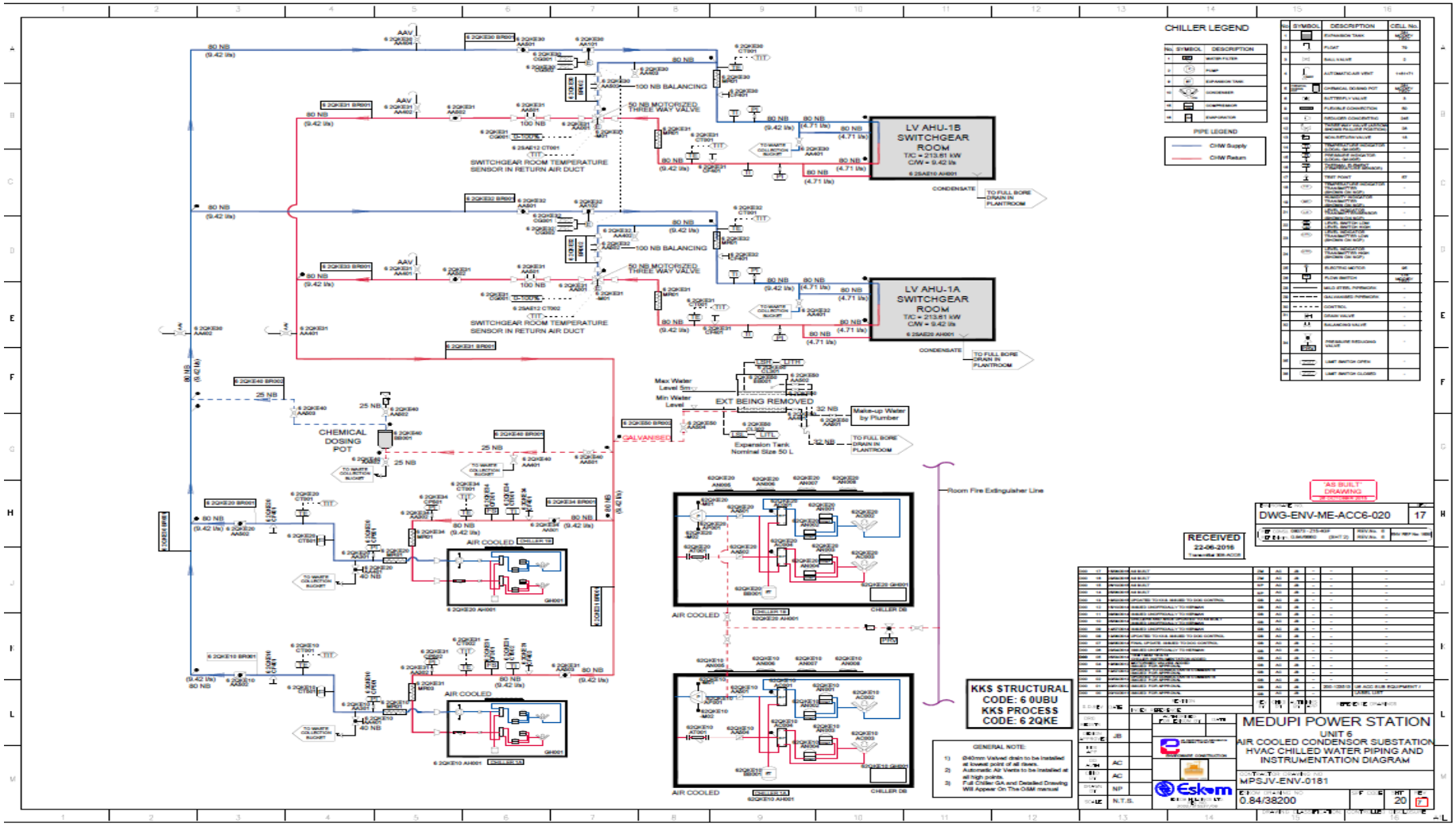
Fire and Medical Station
Fire Pump House
IT and Communication Building.
Pulse Jet Fabric Filter Plant Sub Station
Raw Water Substation
Sewage Treatment Plant
Smoke Stack North and South
South Chiller Yard
Station Services Building
Sub Station North
Sub Station West
Turbine Hall Ventilation Fans. (Unit 6-1)
Unit 6 -1 Excitation room
Unitised CPP sample conditioning room chiller units
Water Treatment Plant Building
Water Treatment Plant Laboratory
Water Treatment Plant Sub Station
Workshops and Stores

PJFF Plant
SSB Building
Water Treatment Plant Building

8.3. Appendix D: HVAC equipment example



8.3.1 Airflow P&ID



8.3.2. Chilled water P&ID

Chiller water P&ID PDF found here for clearer view.
Airflow P&ID PDF found here for clearer view.

8.5. Appendix E: List of HVAC plants and type of HVAC system

	Type of HVAC system	Brand	Uni1-6	Building	Outside Plant
Access Control Building	Direct Expansion			x	
Admin Building	Air-cooled chiller			x	
Admin Island Chiller Yard	Air-cooled chiller				x
Air Cooled Condenser Sub Station	Air-cooled chiller		x		
All domestic Air conditioners installed in buildings	Split Units		x	x	
Ash Conditioning Sub Station	Air-cooled chiller				x
Ash Conveyor Sub Station	Air-cooled chiller				x
Ash Dump Sub Station and Ash Stackers	Air-cooled chiller				x
Ash dump workshop	Split-Units				x
Auxiliary Bay (1-6)	Water-cooled chiller		x		
Boiler Motor Room	Split-Units		x		
CEP Pump Room and VSD Area	Split-Units		x		
Coal Plant Sub Station	Air-cooled chiller				x
Coal Silo Sub Station	Air-cooled chiller				x
Coal Stockyard North Sub Station.	Air-cooled chiller				x
Coal Stockyard Office, Coal Stackers and Coal Reclaimer	Air-cooled chiller				x
Coal Stockyard South Sub Station	Air-cooled chiller				x
Compressor House North	Air-cooled chiller				x
Compressor House South	Air-cooled chiller				x
Condensate Polishing plant Sub Station	Water-cooled chiller		x		
Facilities	Air-cooled chiller			x	
Fire and Medical Station	Air-cooled chiller			x	
Fire Pump House	Ventilation				x
IT and Communication Building.	Air-cooled chiller				x
Pulse Jet Fabric Filter Plant Sub Station	Air-cooled chiller		x		
Raw Water Substation	Direct Expansion				x
Station Services Building	Air-cooled chiller				x
Sub Station North	Air-cooled chiller				x
Sub Station West	Air-cooled chiller				x
Turbine Hall Ventilation Fans. (Unit 6-1)	Ventilation fans		x		
Unit 6 -1 Excitation room	Direct Expansion		x		
Water Treatment Plant Building	Water-cooled chiller				x
Water Treatment Plant Laboratory	Water-cooled chiller				x
Water Treatment Plant Sub Station	Water-cooled chiller				x
Workshops and Stores	Air-cooled chiller			x	