



on the Go for Growth

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ATMOSPHERIC EMISSION LICENSE AS CONTEMPLATED IN CHAPTER 5 OF THE NATIONAL ENVIRONMENTAL MANAGEMENT: AIR QUALITY ACT, 2004, (ACT NO. 39 OF 2004)

The Provisional Atmospheric Emission License issued to **Eskom Holdings SOC Limited – Medupi Power Station** in terms of section 40(1)(a) of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) ("the Act"), in respect of Listed Activities No. 1.1, 2.4 and 5.1. The Provisional Atmospheric Emission License has been issued on the basis of a decision taken with respect to an application for postponement of compliance timeframes with minimum emission limits identified in terms section 21 of the Act and information that became available during processing of the application.

The Provisional Atmospheric Emission License is issued subject to the conditions and requirements set out below which form part of the Provisional Atmospheric Emission License and which are binding on the holder of the Provisional Atmospheric Emission License ("the License Holder").

This Atmospheric Emission License is valid for a period of five (05) years from the date of issuance. The Atmospheric Emission License expiration terminates the License Holder's right to operate the Listed Activities unless a complete Renewal application has been submitted to the relevant Licensing Authority no later than six (06) months prior to the expiration date of this License. If a complete renewal application has been submitted by the renewal application due date, this Provisional Atmospheric Emission License and all conditions contained therein shall not expire until the renewal License has been issued or denied. This protection shall cease to apply if, subsequent to a renewal application completeness determination, the applicant fails to submit by the deadline any additional information identified by the Licensing Authority as necessary to process the application.

The Atmospheric Emission License is valid until 01 December 2025

1. ATMOSPHERIC EMISSION LICENSE ADMINISTRATION

Name of the Licensing Authority	Waterberg District Municipality
Atmospheric Emission License Number	H16/1/13-AEL/M1/R1
Atmospheric Emission Licence Issue Date	01 December 2020
Expiry date	01 December 2025
Atmospheric Emission License Type	Full License
Review Date, not later than	When deemed necessary by the Licensing Authority

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2. ATMOSPHERIC EMISSION LICENSE HOLDER DETAILS

Enterprise Name	Eskom Holdings SOC Limited
Trading as	Medupi Power Station
Enterprise Registration Number (Registration Numbers if Joint Venture)	2002/015527/06
Registered Address	Megawatt Park, Maxwell Drive, Sunninghill, Sandton
Postal Address	PO Box 1091 Johannesburg 2000
Telephone Number (General)	011 800 3861
Industry Sector	Electricity Generation
Name of Responsible Officer/ Emission Control Officer	Wikus Janse van Rensburg
Telephone Number	014 743 8056
Cell Phone Number	082 371 3461
Fax Number	013 656 4973
Email Address	JVrenesjl@eskom.co.za
After Hours Contact Details	082 371 3461
Land Use Zoning as per Town Planning Scheme	Industrial

3. LOCATION AND EXTENT OF POWER STATION**3.1 Location and Extent of Plant**

Physical Address of the Premises/Plant	Lephalale
Description of Site (Erf)	Farm Naauwontkomen; Farm Eenzaamheid
Coordinates of Approximate Centre of Operations	Latitude: 23.7038316°S Longitude: 27.5617951°E
Extent (km ²)	6.3
Elevation Above Mean Sea Level (m)	900
Province	Limpopo
District Municipality	Waterberg District Municipality
Local Municipality	Lephalale Local Municipality
Designated Priority Area	Waterberg – Bojanala Priority Area

3.2 Description of Surrounding Land Use (within 5 km radius)

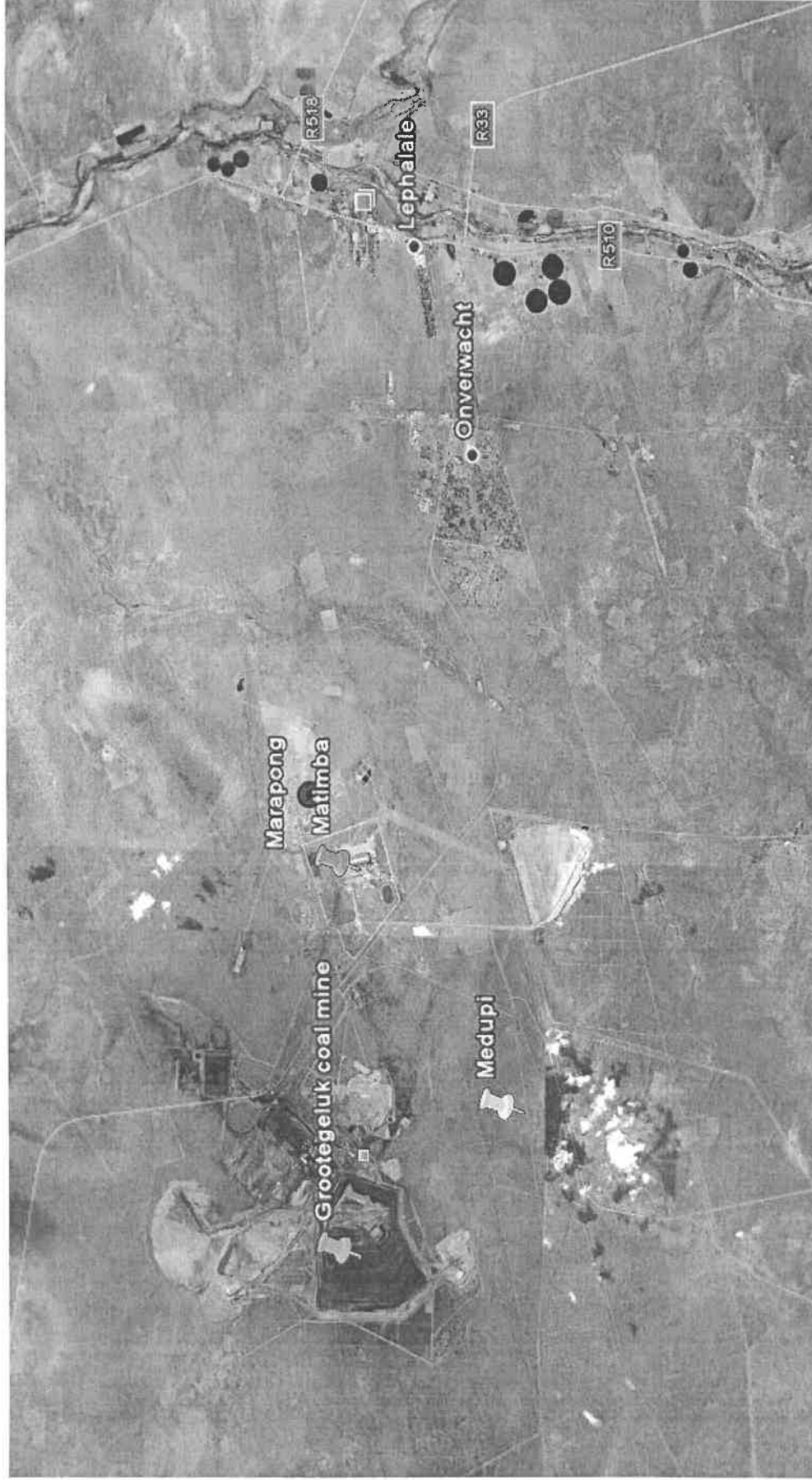


Figure 1: Location of premises in relation to surrounding community

4. GENERAL CONDITIONS

4.1 Process and ownership changes

The holder of the atmospheric emission License must ensure that all unit processes and apparatus used for the purpose of undertaking the listed activity in question, and all appliances and mitigation measures for preventing or reducing atmospheric emissions, are at all times properly maintained and operated.

No facilities (building, plant or site of works) related to the listed activity or activities shall be extended, altered or added to the listed activity without prior approval by the Licensing Authority. The investigation, assessment and communication of potential impact of such an activity must follow the basic assessment procedure as prescribed in the Environmental Impact Assessment Regulations published in terms of section 24(5) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), as amended.

Any changes in processes or production increases, by the License Holder, will require prior approval by the Licensing Authority.

Any changes to the type and quantities of input materials and products, or to production equipment and treatment facilities will require prior written approval by the Licensing Authority.

The License Holder must, in writing, inform the Licensing Authority of any change of ownership of the enterprise. The Licensing Authority must be informed within thirty (30) days after the change of ownership.

The License Holder must immediately on cessation or decommissioning of the listed activity inform, in writing, inform the Licensing Authority.

4.2 General duty of care

The License Holder must, when undertaking the listed activity, adhere to the duty of care obligations as set out in section 28 of the NEMA.

The License Holder must undertake the necessary measures to minimize or contain the atmospheric emissions. The measures are set out in section 28(3) of the NEMA.

Failure to comply with the above condition is a breach of the duty of care, and the License Holder will be subject to the sanctions set out in section 28 of the NEMA.

4.3 Sampling and or analysis requirements

Measurement, calculation and/or sampling and analysis shall be carried out in accordance with any nationally or internationally acceptable standard. A different method may be acceptable to the Licensing Authority as long as it has been consulted and agreed to the satisfactory documentation necessary in confirming the equivalent test reliability, quality and equivalence of analyses.

The License Holder is responsible for quality assurance of methods and performance. Where the License Holder uses external laboratories for sampling or analysis, accredited laboratories shall be used.

4.4 General requirements for License Holder

The License Holder is responsible for ensuring compliance with the conditions of this License by any person acting on his, her or its behalf, including but not limited to, an employee, agent, sub-contractor or person rendering a service to the holder of the License.

The License does not relieve the License Holder to comply with any other statutory requirements that may be applicable to the carrying on of the listed activity.

A copy of the License must be kept at the premises where the listed activity is undertaken. The License must be made available to the environmental management inspector representing the Licensing Authority who requests to see it.

The License Holder must inform, in writing, the Licensing Authority of any change to its details including the name of the emission control officer, postal address and/or telephonic details.

4.5 Statutory obligations

The License Holder must comply with the obligations as set out in Chapter 5 of the Act.

4.6 License Revisions, Termination and Reissuance

The License Holder may request the Licensing Authority to revise the conditions of this License by submitting an application that contains the information specified in Section 46 of the Act. The Licensing Authority will revise the License using the same procedures that apply to initial License issuance.

If the License Holder wishes to terminate the License, a written request must be submitted to the Licensing Authority explaining the reasons for the request and, if necessary for continued operation, submitting applications for any License or approvals that the License Holder avoided by establishment of the limits contained in this License.

This License may be terminated, revised, or revoked and reissued by the Licensing Authority for cause. Cause exists to terminate, revise, or revoke and reissue this License under the following circumstances:

- a) This License contains a material mistake;
- b) Inaccurate statements were made in establishing the terms or conditions of this License;
- c) Newly discovered material information or material change in environmental conditions, environmental technology or applicable law or regulations since the issuance of the existing License;
- d) The License Holder fails to comply with any condition of this License; or
- e) This License must be terminated, revised, or reopened and reissued to assure compliance with Air Quality Act requirements.

The Licensing Authority will use the same proceedings to terminate, revise, or revoke and reissue a License for cause as for initial License issuance. Before initiating proceedings to terminate, revise, or revoke and reissue a License, the Licensing Authority will provide the License Holder at least 30 days' advance written notice of Licensing Authority's intent to terminate, revise, or revoke and reissue the permit, except that the Licensing Authority may provide a shorter notice period in the case of an emergency.

4.7 Non-Compliance with Conditions

If the License Holder fails to comply with the conditions or requirements of the License, the Licensing Authority may by notice in writing call upon such holder to comply with such conditions or requirement within a reasonable period specified in the notice, and in the event of failure on the part of such holder to comply with the said conditions or requirement within the period so specified, the Licensing Authority may cancel the License or suspend the operation thereof for such period as he or she may deem fit.

4.8 Appeal of Licence

- A. The License Holder must, within seven (07) calendar days of receipt of this license, inform all interested and affected parties and at least include the following:

- (i) That an Atmospheric Emission License has been issued to the applicant to proceed with the operation of the activities. If requested provide copies of this license.
 - (ii) That any appeals against the issuing of the license must be lodged with the Member of the Executive Council of Limpopo Department of Economic Development Environment and Tourism ("the Municipal Manager") as per chapter 2 of National Appeal Regulations Government Notice No. R.594 in Government Gazette No. 38303 of 8 December 2014.
 - (iii) The date on which the license was issued to the applicant in terms of section 40 of the Act and the date by which appeals must reach the Municipal Manager.
- B. Failure to inform interested and affected parties within the stipulated time period may result in the Municipal Manager considering requests from such parties for permission to submit late appeal favourably.
- C. An appeal lodged with the Municipal Manager must be submitted to the Waterberg District Municipality by means of one of the following methods:
- By post: Private Bag X 1018, MODIMOLLE, 0510
By fax: (014)717 3286
By hand: Harry Gwala Street, Modimolle,0510
- D. An appeal must be
- (i) submitted in writing
 - (ii) accompanied by:
 - a statement setting out the grounds of appeal;
 - supporting documentation which is referred to in the appeal and is not available to the relevant Licensing Authority
 - a statement that the appellant has complied with regulation 60(2) or (3) of NEMA EIA Regulations

5. NATURE OF PROCESS

5.1 Process description

Medupi Power Station was designed to produce a combined 4800MW nominal, generated from six (6) 800MW nominal power generating units. Coal is supplied, into the 10 000 Ton Silo, from Grootegeluk Exxaro mine by means of conveyor belts. The delivered coal is either stored at the Coal Stock Yard or conveyed directly into the individual unit's Mill Bunkers. The Mill Feeders are then used to transport coal into the mills. Bunker 150 Fuel Oil (FO) is transported and delivered into the Power Station by means of road trucks. FO is then offloaded into one (01) of the two (02) FO Storage Tanks. It is then pumped into the FO Burners by means of the FO pumps.

Liquefied Petroleum (LP) Gas is used to start the combustion fire in the boiler furnace by means of the Igniter. The LP Gas flame is used to ignite the Bunker 150 Fuel Oil (FO), which is injected into the boiler furnace, using the FO Burners. When FO has ignited and the flame is stable, LP Gas is turned off. The vertical spindle mills crush coal (from the Mill Bunkers) into powder, namely the Pulverized Fuel (PF). FO is then used to ignite PF that is introduced into the boiler furnace by means of the PF Low (Nitrogen Oxide) NOx Burners. The PF Low NOx Burners are also used to control the NOx emissions. Once the PF has ignited and the boiler furnace flame is stable, FO Burners are turned off. Four (4) mills per Unit are required to achieve the Unit Generated Load of 800MW nominal.

The LP Gas, FO, and/or PF burnt in the furnace are converted into a combination of combustion gases, fly ash and coarse ash. A combination of combustion gases and fly ash is known as flue gas. Coarse ash is collected at the bottom of the boiler furnace and quenched inside the Submerged Scrapper Conveyor (SCC) water. The SSC conveys the coarse ash into the coarse ash conveyors, which sends the coarse ash into the ash dump for disposal. Fly ash (which is responsible for particulate emissions) exits the boiler through the flue gas path. The flue gas path components consist of the Gas Air Heater (GAH), flue gas ducting, Pulse Jet Fabric Filter Plant (PJFFP), fly ash hoppers, Induced Draught (ID) Fan, and the Smoke Stack.

PJFFP is used to control the particulate emissions, by filtering the fly ash from the flue gas and cause the fly ash to fall inside the fly ash hoppers. The balance of the cleaner flue gas is then sucked out of the PJFFP using the ID fans to exit through the Smoke Stack. The fly ash is extracted from the fly ash hoppers and transported to one of the six (6) fly ash silos by means of compressed air. The fly ash then exits the bottom of the fly ash silos and is sprayed with water in the fly ash conditioner to form a paste. The hydrated fly ash is then allowed to mix with coarse ash on the coarse ash conveyor. The mixed ash is then transported to the ash dump.

Demineralized water, produced from the Water Treatment Plant (WTP), is pumped into the Feed Water Tank (FWT) by means of Condensate Extraction Pumps (CEPs). This water is then pumped into the boiler using the Electric Feed Pumps (EFPs). The furnace flame then heats up the demineralized water; through transfer of heat into the boiler tubes, Economizers and Super-heaters to produced superheated steam. Super-heated steam exits the boiler by means of the High Pressure (HP) piping and is introduced into the turbine to turn the turbine shaft. The turbine shaft that is coupled to the Generator shaft is used to turn the Generator rotor. This induces electricity on the Generator stator, and thereby generating electricity. The turbine steam that leaves the turbine exhausts then flows into the Air Cooled Condensers (ACC) that converts the steam into condensate. The condensate is collected from the Air Cooled Condensate Collecting Tank (ACCCT) and pumped by the CEP back into the FWT.

5.2 Listed activity or activities

List of all Listed Activities, as published in terms of Section 21 of the AQA, authorised to be conducted at the premises by the License Holder:

Category of Listed Activity	Sub-category of the Listed Activity	Description of the Listed Activity
1 – Combustion Installations	1.1 – Solid Fuel Combustion Installations	Solid fuels combustion installations used primarily for steam raising or electricity generation
2 – Petroleum Industry	2.4 – Storage and Handling of Petroleum Products	Petroleum product storage tanks and product transfer facilities, except those under liquefied petroleum gas
5 – Mineral Processing, Storage and Handling	5.1 – Storage and Handling of Ore and Coal	Storage and handling of ore and coal not situated on the premises of a mine or works as defined in the Mines Health and Safety Act 29/1996

5.3 Unit process or processes

List of all unit processes associated with the listed activities to be undertaken at the premises.

Unit Process	Unit Process Function	Batch or Continuous Process
Boiler - Unit 1	Electricity Generation – 800 MW	Continuous
Boiler - Unit 2	Electricity Generation – 800 MW	Continuous
Boiler - Unit 3	Electricity Generation – 800 MW	Continuous
Boiler - Unit 4	Electricity Generation – 800 MW	Continuous
Boiler - Unit 5	Electricity Generation – 800 MW	Continuous
Boiler - Unit 6	Electricity Generation – 800 MW	Continuous
Coal stockyard	Coal Storage	Continuous
Excess coal stockyard	Coal Storage	Continuous
Fuel Oil Storage Tanks	Fuel Oil Storage	Continuous
Ashing facility	Ash Dump	Continuous

5.4 Hours of operations

Hours of operation of all unit processes associated with the listed activities at the premises.

Unit Process	Operating Hours	Days of Operation per Year
Boiler - Unit 1	00:00 – 24:00	366
Boiler - Unit 2	00:00 – 24:00	366
Boiler - Unit 3	00:00 – 24:00	366
Boiler - Unit 4	00:00 – 24:00	366
Boiler - Unit 5	00:00 – 24:00	366
Boiler - Unit 6	00:00 – 24:00	366
Coal stockyard	00:00 – 24:00	366
Excess coal stockyard	00:00 – 24:00	366
Fuel Oil Storage Tanks	00:00 – 24:00	366
Ashing facility	00:00 – 24:00	366

5.5 Graphical Process Information

APPLICABLE TO DIRECT DRY COOLED PLANT

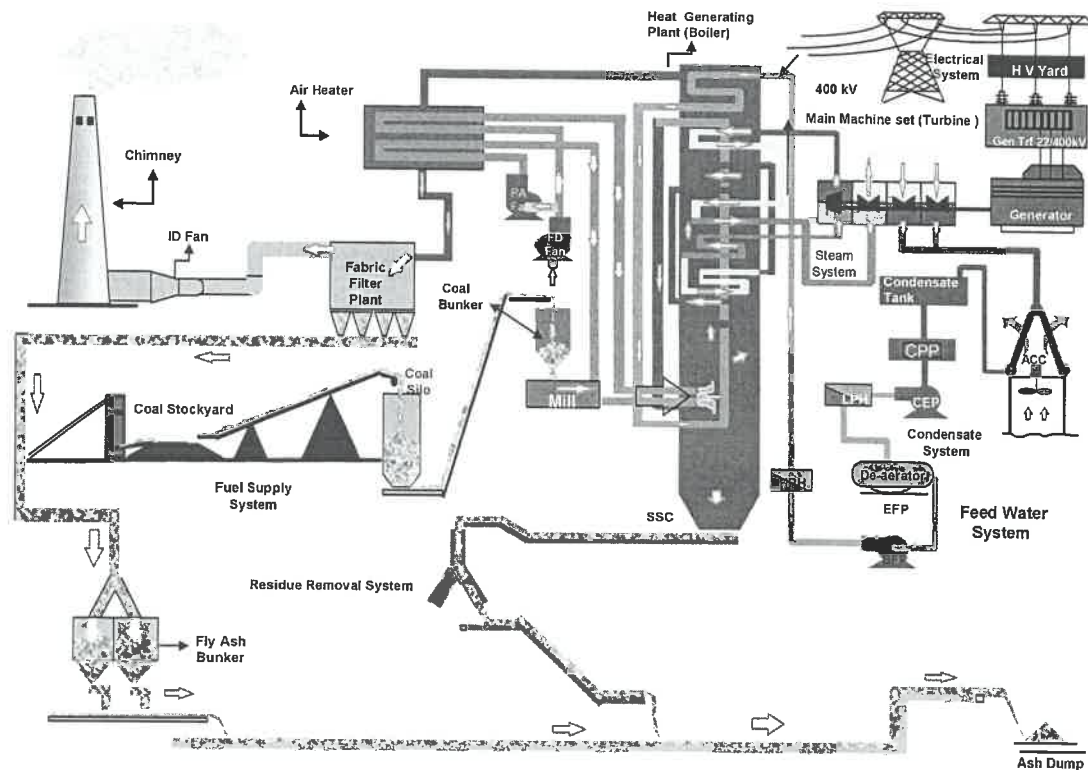


Figure 2: Process Flow Diagram Applicable to Direct Dry Cooled Plant

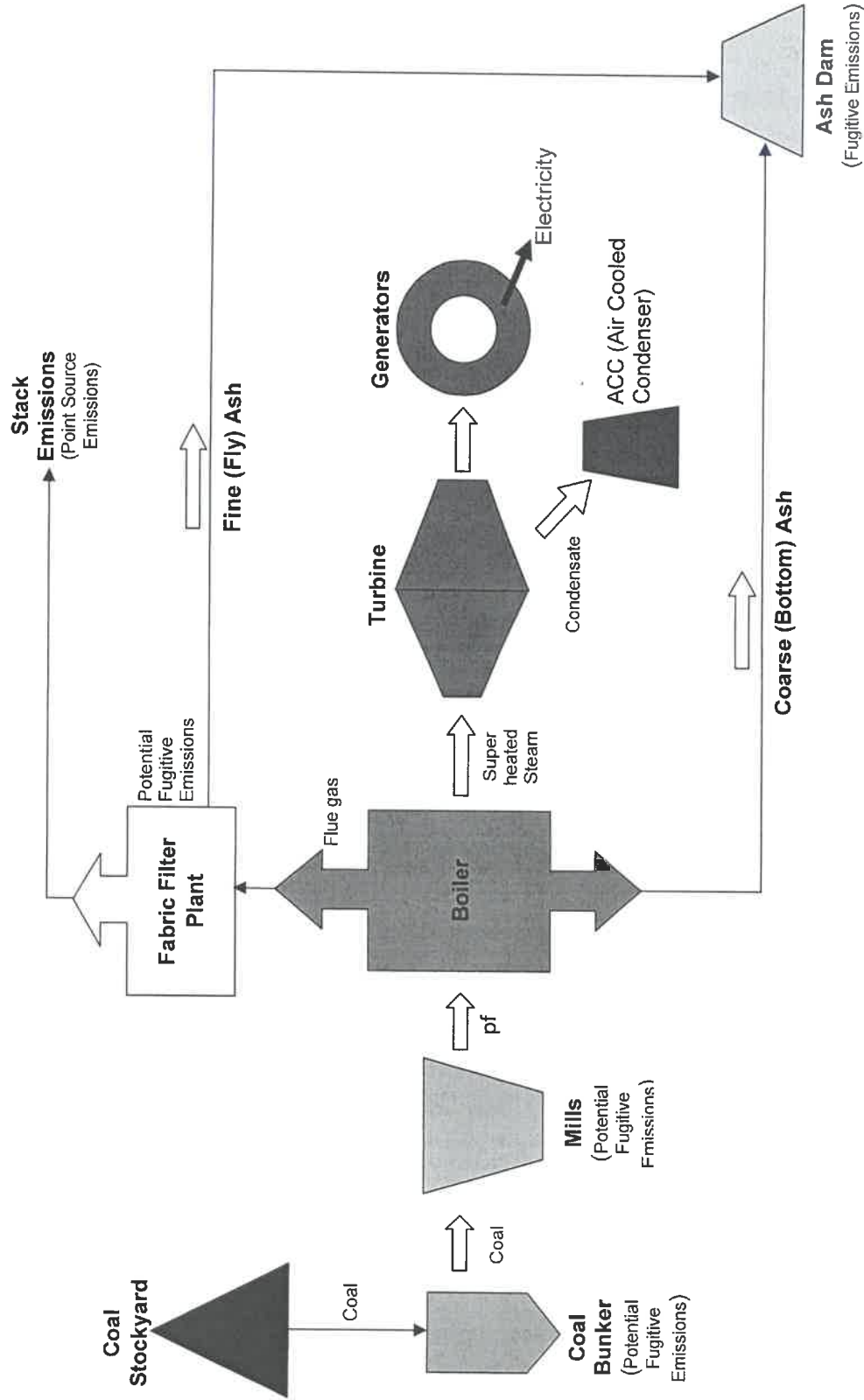


Figure 3: Process flow chart indicating inputs, outputs and emissions at the site of works, including points of potential fugitive emissions

6. RAW MATERIALS AND PRODUCTS

6.1 Raw materials used

Regulated Raw Materials		
Raw Material Type	Maximum Permitted Consumption Rate (Quantity)	Units (quantity/period)
Coal	1 875 000	tons/month
Fuel oil	20 000	tons/month
Non-regulated Raw Materials		
Raw Material Type	Maximum Permitted Consumption Rate (Quantity)	Units (quantity/period)
Water	1 208 333	litres/month

* **Regulated raw materials** refers to those materials when increased or decreased may result in the change of air emissions output.

* **Non-regulated raw materials** refer to those materials when increased or decreased may not result in any change of air emissions output.

Limitations and Standards

6.1.1 The Coal consumption rate shall not exceed 1 875 000 tons per month.

6.1.2 The Fuel Oil consumption rate shall not exceed 20 000 tons per month

6.2 Production rates

Product Name	Maximum Permitted Production Capacity (Quantity)	Units (quantity/period)
Electricity	4 800	MW

6.3 Materials used in energy sources

Materials for Energy Source	Actual Consumption Rate (Quantity)	Units (quantity/period)	Materials Characteristics (Monthly Average)
Coal	1 875 000	Tons/month	Sulphur Content: 1.3 – 2.2% Ash Content: 35 – 39%
Fuel oil	20 000	Tons/month	Sulphur Content: 0.5 - 3.5% Ash Content: 0.02 - 0.1%

6.3.1 No fuel must be used with material characteristics with an exceedance of the largest value by over 10% without the approval by the Licensing Authority.

6.4 Sources of atmospheric emission

6.4.1 Point source parameters

Point Source Code	Source Name	Latitude (decimal degrees)	Longitude (decimal degrees)	Height of Release Above Ground (m)	Height Above Nearby Building (m)	Effective Diameter at Stack Tip/Vent Exit (m)*	Actual Gas Exit Temperature (°C)	Actual Gas Volumetric Flow (m ³ /hr)	Actual Gas Exit Velocity (m/s)	Emission Hours	Type of Emission (Continuous / Batch)
		South	East								
SV0013	SV U1	-23.70695	27.56224	220	100	21.9	140	4 000 000	18 -24	24 hours	Continuous
SV0014	SV U2	-23.70695	27.56224	220	100	21.9	140	4 000 000	18 -24	24 hours	Continuous
SV0015	SV U3	-23.70695	27.56224	220	100	21.9	140	4 000 000	18 -24	24 hours	Continuous
SV0002	SV U4	-23.7048	27.5618	220	100	21.9	140	4 000 000	18 -24	24 hours	Continuous
SV0011	SV U5	-23.7048	27.5618	220	100	21.9	140	4 000 000	18 -24	24 hours	Continuous
SV0012	SV U6	-23.7048	27.5618	220	100	21.9	140	4 000 000	18 -24	24 hours	Continuous

6.4.2 Area and or line source parameters

Area and/ or Line Source Code	Source Name	Source Description	Latitude (decimal degrees) of SW corner	Longitude (decimal degrees) of SW corner	Height of Release Above Ground (m)	Length of Area (m)	Width of Area (m)	Emission Hours	Type of Emission (Continuous / Intermittent)
A1	Coal stockyard	Storage and handling of coal	23.710818° S	27.550252° E	16	897	616.6	24	Continuous
A2	Excess coal stockyard	Storage and handling of coal	23.70941° S	27.52924° E	25	2000	2000	24	Continuous
A3	Ash disposal facility	Storage of ash	23.748821° S	27.515143° E	60	4200	4000	24	Continuous
A4	Fuel oil tank 2	Fuel oil storage	2623173.400 SW	57523.252 SW	16.5	16.5	12m	24	Continuous
A5	Fuel oil tank 1	Fuel oil storage	2623235.4449 SW	57559.027 SW	16.5	16.5	12m	24	Continuous

7. APPLIANCES AND MEASURES TO PREVENT AIR POLLUTION

7.1 Appliances and control measures

Associated Source Code	Appliances			Abatement Equipment Control Technology			
	Appliance /Process Equipment Number	Appliance Type / Description	Abatement Equipment Technology Name and Model	Commission Date	Technology Type	Minimum Control Efficiency (%)	Minimum Utilisation (%)
SV0013	CD00013	CD Filter plant U1	Balcke Durr Double Row Filter Process Line	-	Fabric filter plant	99.0%	100%
	CD00012	CD Burners U1	Hitachi DS Burners and EN12952 Overfire Air	-	Low NOx burners	70%	100%
SV0014	CD00011	CD Filter plant U2	Balcke Durr Double Row Filter Process Line	10/07/2018	Fabric filter plant	99.0%	100%
	CD00010	CD Burners U2	Hitachi DS Burners and EN12952 Overfire Air	10/07/2018	Low NOx burners	70%	100%
SV0015	CD00009	CD Filter plant U3	Balcke Durr Double Row Filter Process Line	10/01/2018	Fabric filter plant	99.0%	100%
	CD00008	CD Burners U3	Hitachi DS Burners and EN12952 Overfire Air	10/01/2018	Low NOx burners	70%	100%
SV0002	CD00007	CD Filter plant U4	Balcke Durr Double Row Filter Process Line	26/052017	Fabric filter plant	99.0%	100%
	CD00006	CD Burners U4	Hitachi DS Burners and EN12952 Overfire Air	26/052017	Low NOx burners	70%	100%
SV0011	CD00005	CD Filter plant U5	Balcke Durr Double Row Filter Process Line	19/06/2016	Fabric filter plant	99.0%	100%
	CD00004	CD Burners U5	Hitachi DS Burners and EN12952 Overfire Air	19/06/2016	Low NOx burners	70%	100%
SV0012	CD00003	CD Filter plant U6	Balcke Durr Double Row Filter Process Line	24/11/2014	Fabric filter plant	99.0%	100%
	CD00002	CD Burners U6	Hitachi DS Burners and EN12952 Overfire Air	23/12/2014	Low NOx burners	70%	100%

Appliances and control measures requirements:

- 7.1.1 The process units shall be operated in such a way so as to prevent the discharge of smoke, fumes or other prescribed pollutants above their appropriate emission limit.
- 7.1.2 Off-gases from point sources shall be vented via emission abatement/control system at all times the emission units are in operation.

- 7.1.3 Effective control of emissions requires the maintenance and proper use of equipment in accordance with the manufacturer's instructions, and the proper supervision of process operations.
- 7.1.4 The License Holder must maintain and use equipment in accordance with the manufacturer's instructions and in conformance with their designs to ensure effective control of emissions. Effective preventive maintenance shall be employed through the entire plant and equipment concerned with the control of emissions to the atmosphere.
- 7.1.5 The License Holder shall, continuously operate, and maintain a flue gas desulfurization (FGD) plant for control of SO₂ on all six units. The Flue Gas Desulfurisation plant shall be retrofitted in each unit within Six (06) years after the first commissioning of each unit and during the General Overhaul outages.

7.2. Point source – maximum emission rates (under normal conditions)

Point Source Code	Pollutant Name	Maximum Release Rate			Duration of Emissions
		(mg/Nm ³)	Date to be Achieved By	Average Period	
SV0013, SV0014, SV0015, SV0002, SV0011, SV0012	SO ₂	3500 mg/Nm ³	01 April 2020	Monthly	Continuous
	NOX	500 mg/Nm ³	01 April 2025	Daily	Continuous
	PM	750 mg/Nm ³	01 April 2020	Daily	Continuous
		50 mg/Nm ³	01 April 2020	Daily	Continuous

Point source – maximum emission rates and requirements

- 7.2.1 Emissions to the atmosphere from each unit shall be limited as set out in the Table 7.2 when the processes are in operation. The License Holder must be in compliance with the emissions limitations in Table 7.2 at all times.
- 7.2.2 The averaging period for the purposes of compliance monitoring shall be expressed as monthly averages for SO₂ and daily averages for PM₁₀ and NO_x. The concentrations of the gaseous pollutants shall be corrected to 273 K, 101.3 kPa, 10% O₂ and dry basis reference conditions.
- 7.2.3 The License Holder must prevent deviations from normal operating conditions that would result in emissions exceeding specified limit values, and shall scale back or halt its operations under excessive emissions if it is likely that the permitted levels of emissions would otherwise be exceeded.
- 7.2.4 The License Holder must develop a written start-up, maintenance, and shutdown plan that describes, in detail, procedures for operating and maintaining each unit during periods of start-up, maintenance, and shutdown; and a program of corrective action for malfunctioning process, air pollution control, and monitoring equipment used to comply with the emission limitations in Table 7.2.
- 7.2.5 During periods of start-up, maintenance, and shutdown, the License Holder must operate each unit in accordance with the start-up, maintenance, and shutdown plan.
- 7.2.6 Any malfunction or breakdown leading to abnormal emissions shall be dealt with promptly and process operations adjusted until normal operations can be restored and all such malfunctions shall be recorded.

7.3. Point source – emission monitoring and reporting requirements

Point Source Code	Emission Sampling / Monitoring Method	Sampling Frequency	Parameters to be Measured	Parameters to be Reported	Reporting Frequency	Conditions Under Which Monitoring Could Be Stopped
SV0013, SV0014, SV0015, SV0002, SV0011, SV0012	Continuous emission monitoring (in-stack)	Continuous	Continuous (90% of hours in a year)	PM, SO ₂ , NO _x , CO ₂	As per Condition 7.7 of the License	Upon written approval by the Licensing Authority

Point source – monitoring and reporting requirements

- 7.3.1 The License Holder shall install, calibrate, and operate a Continuous Emissions Monitoring System (CEMS) each for unit that measures Particulate Matter (PM₁₀), Sulphur Dioxide (SO₂), Oxides of Nitrogen (NO_x) and Carbon Dioxide (CO₂). The concentrations of the gaseous pollutants shall be corrected to 10% O₂ on a dry basis. The averaging period for the purposes of compliance monitoring shall be expressed on a daily average basis.
- 7.3.2 The CEMS shall be operated, calibrated and maintained continuously, dependent of the units' operation. The License Holder must measure and record valid continuous emission data for the parameters listed in Condition 7.3 during all periods of the units' operation including periods of unit start-up, shutdown, malfunction or emergency conditions, except for periods of CEMS quality assurance/quality control ("QA/QC"), routine maintenance, or uncontrolled malfunction. Nevertheless, the CEMS must be maintained to yield a minimum of 90% valid hourly average values during the reporting period. CEMS must be audited by a SANAS accredited laboratory at least once every two (02) years.
- 7.3.3 The License Holder shall conduct spot measurement or correlation stack tests to verify the accuracy of the continuous emission measurement. The Licensing Authority, or the Licensing Authority's duly authorized representative, may witness or conduct such test(s). Should the Licensing Authority opt to conduct such test(s), the operator shall provide all necessary sampling connections and sampling ports to be located in such manner as the Licensing Authority may require, power for test equipment and the required safety equipment, such as scaffolding, railings and ladders, to comply with generally accepted good safety practices. Such tests shall be conducted in accordance with the methods and procedures set out in this License or as otherwise approved or specified by the Licensing Authority.
- 7.3.4 All spot measurement or correlation stack tests to verify the accuracy of the continuous emission measurement and such other tests as specified in this License shall be conducted in accordance with an approved test method as contained in Annexure A of Government Gazette No 42013, Notice No. 1207 published 31 October 2018. Methods other than those contained in Annexure A may be used with the written consent of the National Air Quality Officer. Such methods shall be submitted to the Licensing Authority in writing at least thirty (14) days prior to any testing and shall contain the information set out by the Licensing Authority or as per Condition 7.8 (A). All tests will be conducted by SANAS accredited laboratories or laboratories accredited by similar foreign authorities.
- 7.3.5 The License Holder shall notify the Licensing Authority prior to any periodic sampling in accordance with Condition 7.9, so the Licensing Authority may have the opportunity to observe such tests. This notification shall include the actual date and time during which the test will be conducted and, if appropriate, verification that the tests will fully conform to a referenced method previously approved by the Licensing Authority.
- 7.3.6 All measurement results must be recorded, processed, presented in an appropriate manner and reports must be submitted to the Licensing Authority as per Condition 7.7.1(III) in order to enable verification of compliance with permitted operating conditions and atmospheric emission standards.

- 7.3.7 The License Holder shall install, maintain and operate ambient air quality [Sulphur Dioxide (SO₂); Nitrogen Dioxide (NO₂), Carbon Monoxide(CO); Particulate Matter (PM10 and PM 2.5); Ozone(O₃); and Mercury (Hg)] monitoring and associated meteorological stations at relevant areas upwind and downwind of the facility. An ambient air quality monitoring plan must be developed and submitted to the Licensing Authority for approval.
- 7.3.8 The License Holder shall also conduct public education and awareness campaigns focusing on air quality improvements and shall implement a program of support for initiatives aimed at improving air quality in the surrounding communities and performance reports must be submitted to the Licensing Authority as per Condition 7.7.1(V). A five-year public education and awareness plan must be developed and submitted to the Licensing Authority for review and approval by the Licensing Authority.

7.4. Area and or line source – management and mitigation measures

Area and/or Line Source Code	Source Name	Source Description	Description of specific measures	Required control efficiency (%)	Method of monitoring measures' effectiveness
A1	Coal stockyard	Storage and handling of coal	- Compaction of strategic stockpile - Spraying of water for dust suppression	Fallout dust not to exceed dust fallout standards set out in Regulation 3 of the National Dust Control Regulation, 2013	Dust fallout and PM10 monitoring
A2	Excess coal stockyard	Storage and handling of coal	- Compaction of strategic stockpile - Spraying of water for dust suppression	Fallout dust not to exceed dust fallout standards set out in Regulation 3 of the National Dust Control Regulation, 2013	Dust fallout and PM10 monitoring
A3	Ash dump	Storage of ash	- Spraying of water for dust suppression - Rehabilitation of ash dump by planting vegetation	Fallout dust not to exceed dust fallout standards set out in Regulation 3 of the National Dust Control Regulation, 2013	Dust fallout and PM10 monitoring
A4	Fuel oil tank 1	Fuel oil storage	- Monthly visual inspection of the exterior walls of the tank - Perform inventory reconciliation and annual leak detection tests	Fallout dust not to exceed dust fallout standards set out in Regulation 3 of the National Dust Control Regulation, 2013	Dust fallout and PM10 monitoring
A5	Fuel oil tank 2	Fuel oil storage	- Monthly visual inspection of the exterior walls of the tank - Perform inventory reconciliation and annual leak detection tests	Fallout dust not to exceed dust fallout standards set out in Regulation 3 of the National Dust Control Regulation, 2013	Dust fallout and PM10 monitoring

Area and or line source management and mitigation measures

- 7.4.1 The License Holder shall perform all necessary operations to minimize emissions arising from the coal stockpile, ash dump, coal and ash handling equipment, and any other associated infrastructure or activity. Measures including good housekeeping, compaction of stockpile, rehabilitation of ash dump by planting vegetation and spraying of water for dust suppression shall be implemented at all times as shall be necessary to minimize the generation of dust from the works and to prevent detrimental impacts on adjacent receptors.

- 7.4.2 The License Holder shall perform all necessary operations to minimize emissions arising from the fuel oil storage area, fuel oil handling equipment, and any other associated infrastructure or activity. The area shall be banded to cater for double the volume of each tank at the minimum (i.e. 2400m³ per tank) with an additional freeboard of 300mm so that each tank has its own banded area with a double volume bund and spare change. The bund shall be constructed of concrete with all joints sealed, excess water shall be discharged through a drain-off facility within the banded area and oil traps shall be used to separate oil from water prior to release into the wastewater system. A sand-bitumen mix placed at the bottom of the tank shall be used to prevent leaking. Fuel oil tanks shall be fitted with a breather pipe with flame arrestor, full fire-water system and fire blanket system installed along the top of the bunker walls.
- 7.4.3 Periodic evaluation of the coal, ash dump and fuel oil storage sites' implemented control measures must be undertaken to identify the success of those measures, in-line with the requirements of the Fugitive Emissions Management Plan contemplated in Condition 7.9.
- 7.4.4 The License Holder shall conduct dust fallout monitoring/measurements in accordance with an approved test method at sites around the stockyard area, ash dump area as well as along the site boundary (at least upwind and downwind) to determine contributions from background sources.
- 7.4.5 Monitoring systems and control measures must be implemented to ensure prevention or mitigation of spontaneous combustion of coal stockpiles
- 7.4.6 Reviews of the monitoring results and effectiveness of implemented mitigation measures shall be carried out. Results of such reviews (including calibration data, monitoring protocol, measured dust concentrations, and data analysis) must be submitted to the Department in accordance with Condition 7.7.1. Records of specific dust events, dust complaints and site conditions including prevailing meteorology must be included in the report.
- 7.4.7 The License Holder shall keep readily accessible records showing the dimension of each storage vessel, an analysis showing the capacity of each storage tank and the maximum true vapor pressure of the stored liquid. Records shall be retained for the life of the facility. The License Holder shall also keep records sufficient to determine the throughput of fuel oil for each storage tank for use in the report as per Condition 7.7.1.
- 7.4.8 Emissions of Total Volatile Organic Compounds (TVOC) from fuel oil storage tanks' venting and working loss shall be estimated using methods approved by the Licensing Authority. Visual inspection of the exterior walls of the tanks results, fuel oil inventory reconciliation data, fuel oil throughput data and TVOC emission estimation results shall be submitted to the Licensing Authority as per Condition 7.7.1.
- 7.4.9 The License Holder must install and maintain appropriately designed stormwater management and treatment infrastructure to control and prevent pollution of water resources. Any runoff from the coal stockyard, ash dump and fuel oil storage area must be directed to the treatment system.
- 7.4.10 The License Holder submit a fugitive emission management plan as per Condition 7.9. The plan must identify all significant sources of fugitive emission and measures that will be implemented to address these fugitive sources. The plan must include detailed control methodologies/ techniques, contingency plans, timeframes for implementation, assessment of efficiency, and regular monitoring and reporting systems/criteria.

7.5. Energy Conservation Measures

The License Holder shall evaluate its activities to improve energy utilization and efficiency. This information should be provided to the Licensing Authority upon request.

7.6. Cleaner Production Targets

The License Holder must investigate cleaner production processes and practices that are relevant to its operations with a view towards reducing energy consumption and atmospheric emissions related to the processes. This information should be provided to the Licensing Authority upon request.

7.7. Routine Reporting and Record-keeping

7.7.1 Monthly Reporting

The License Holder must complete and submit to the Licensing Authority a Monthly Report no later than thirty (30) days after the end of each reporting period. The report must include information for the period under review. The Monthly Report must include, but not limited to, the following:

I. Complaints Register

The License Holder must maintain a Complaints Register at its premises, and such register must be made available for inspections. The Complaints Register must include the following information on the complainant, namely, the name, physical address, telephone number, date and the time when the complaint was registered. The register should also provide space for noise, dust and offensive odours complaints. Furthermore, the License Holder is to investigate and, monthly, report to the Licensing Authority in a summarised format on the total number of complaints lodged. The complaints must be reported in the following format with each component indicated as may be necessary:

- a) Air pollution complaints received;
- b) Date the complaint was received and the date the facility responded,
- c) Investigations to determine the cause of the complaint;
- d) Results of the investigation, and
- e) Any actions taken to resolve the complaint.

The Licensing Authority must also be provided with a copy of the Complaints Register upon request.

II. Operation and Production Records

The License Holder must track and record the operation and production such that source-wide emissions can be estimated on a daily basis. Records must include, but not be limited to:

- a) Daily hours of operation
- b) Daily production rate
- c) Daily fuel consumption rate
- d) Ash and sulphur content (%) of any coal
- e) Sulphur content (%) of fuel oil combusted;
- f) Coal, Ash and Fuel oil throughput data
- g) Visual inspection of the exterior walls of the fuel oil tanks results and fuel oil inventory reconciliation data
- h) Documentation of any time periods when the unit process is operational and the Fabric filter plant and/or low NO_x burners are not fully operational

III. Emissions monitoring and measurements and performance against limits

The License Holder must record and report, in a summarised format, any performance and/or compliance testing of machinery and equipment that has a direct or indirect impact on the atmospheric emissions to the Licensing Authority. Any non-compliance must be described thoroughly in the report. The performance tests and compliance testing report should include (but not be limited to) the following information:

- a) Point sources monitoring and measurements results indicating performance against the specified emission limits in Table 7.2;
- b) Pollutant emissions trend including Greenhouse gas emissions;
- c) Fugitive emissions estimation/measurement information
- d) Start-up, maintenance, shutdowns or malfunction occurrence and duration;
- e) Major upgrades projects (i.e. abatement equipment or process equipment);
- f) Excess emissions, source code or name, emission standard exceeded, root cause analysis;
- g) Calculation of impacts/emissions associated with the non-compliance incidents and dispersion modelling of pollutants where applicable;
- h) Measures implemented or to be implemented to prevent recurrence; and
- i) Date by which measures were or will be implemented.

IV. Spot/correlation stack tests

Records of all required compliance testing shall include the following:

- a) The date, place, and time of sampling or measurements;
- b) The date analyses were performed;
- c) The company or entity that performed the analyses;
- d) The analytical techniques or methods used;
- e) The results of all such analyses; and
- f) The operating conditions existing at the time of sampling or measurement

V. Air Quality Improvement and Social Responsibility

- a) Ambient air quality monitoring results;
- b) Air quality improvement initiatives;
- c) Public education and awareness campaigns;

7.7.2 Bi-annual Reporting

The License Holder must complete and submit to the Licensing Authority a Bi-annual Report no later than thirty (30) days after the end of each reporting period. The report must include information for the period under review. The Bi-annual Report must include, amongst others, the following items:

- a) Compliance with regard to each AEL condition
- b) Interpretation of all available data, tests and monitoring results regarding operation of the plant and all impacts on the environment

- c) Recommendations regarding non-compliance or potential non-compliance
- d) Target dates for the implementation of recommendations by the License Holder to achieve compliance
- e) Impact of implemented corrective action taken for identified non-compliance

7.7.3 Annual Reporting

The License Holder must complete and submit to the Licensing Authority, an Annual Report as contemplated in paragraph 17 of Section 21 Notice (Government Notice No. 893) no later than thirty (30) days after the end of each reporting period. The report must include information for the year under review. The Annual Report must include, amongst others, the following items:

- a) Information specified in paragraph 18 of Section 21 Notice (Government Notice No. 893)
- b) Emissions performance (emissions trend including Greenhouse gas emissions), compliance statistics and Spot/verification tests annual data summaries
- c) Start-up, maintenance, shutdowns or malfunction occurrence and duration annual summary statistics
- d) Operation and production annual data summaries
- e) Annual summaries of deviations from License conditions or operations and maintenance plan and actions taken to resolve the problem
- f) A compliance audit report that includes, amongst others, the following items:
 - i. Compliance with regard to each AEL condition.
 - ii. Interpretation of all available data, tests and monitoring results regarding operation of the plant and all impacts on the environment.
 - iii. Recommendations regarding non-compliance or potential non-compliance.
 - iv. Target dates for the implementation of recommendations by the License Holder to achieve compliance.

7.7.4 NAEIS Reporting

7.7.3.1 The License Holder must in accordance with the National Atmospheric Emissions Reporting Regulation, Gazette Number 38633 of 2015, submit their annual emissions report on the NAEIS system. All necessary supporting documentation must accompany the submission.

7.7.3.2 Reporting of greenhouse gas emissions shall be done in accordance with the National Greenhouse Gas Emissions Reporting Regulations, Regulations, published under Government Notice No. 275 in Gazette No. 40762 of 03 April 2017

7.7.5 Waterberg-Bojanala Priority Area Air Implementation Task Team (ITT)

The License Holder must ensure representation and participation in the Waterberg Priority Area ITT and further provide information as would be required by the chairperson of the ITT.

7.7.6 Waterberg-Bojanala Priority Area Multi-Stakeholder Reference Group (MSRG)

The License Holder must ensure representation and participation in the Waterberg-Bojanala Priority Area MSRG and further provide information as would be required by the chairperson of the MSRG.

7.8. License Notification Requirements

- A. The License Holder shall notify the Licensing Authority by letter or by electronic mail of the:
 - i. Actual date of initial start-up of each unit, not less than fourteen (14) days prior to such date;
 - ii. Actual date of commencement of commercial operation of each unit, not less than fourteen (14) days prior to such date;
 - iii. Date upon which isokinetic stack sampling, spot measurement or correlation stack tests will commence, in accordance with Condition 7.3.5, within fourteen (14) days prior to such date. Notification may be provided with the submittal of the performance test protocol required in terms Condition 7.3.3 and 7.3.4. The notice must state the source to be tested, the proposed time of the test, the testing date(s) and the proposed testing methods and procedures.
- B. Should the malfunction referred to in 7.2.6 exceed 48 hours, Section 30 of the National Environmental Management Act (Act No. 107 of 1998), as amended, shall apply.
- C. In addition, the License Holder shall provide an additional notification to the Licensing Authority in writing or electronic mail within fourteen (14) days of any such failure described under Condition 7.8 (B). This notification shall include a description of the malfunctioning equipment or abnormal operation, the date of the initial malfunction, the period of time over which emissions were increased due to the failure, the cause of the failure, the estimated resultant emissions in excess of those allowed in Section 7.2, and the methods utilized to mitigate emissions and restore normal operations.
- D. The License Holder is to notify the Licensing Authority within twenty-four (24) hours of any other significant incidences (i.e. spillages, fires, leakages or other similar situations). Should such incidences pose a significant health risk or nuisance, notification of the incident is to be immediate. Where excessive emissions occur, which could cause adverse health or environmental impacts or nuisance, urgent corrective measures must be taken, by the License Holder, to contain or minimise the emissions through operational interventions. Remediation, if required shall be carried out to the satisfaction of the Licensing Authority and/or any other governmental agencies. Any incident that has the potential to create significant health, safety or environmental risk or nuisance needs to be reported immediately to the relevant authority, Section 30 of the National Environmental Management Act (Act No. 107 of 1998), as amended, shall apply.
- E. Compliance with the notification provision shall in no way serve to excuse, otherwise justify, or in any manner affect any potential liability or enforcement action resulting from the occurrence.

7.9. Investigation and Reviews

The following investigations are required:

Location	License Conditions	Minimum Requirements	Timeframe
Plant Wide	Fugitive Emissions Management	Fugitive Emissions Management Plan developed, approved and under implementation as per the schedule agreed in the plan, to minimize nuisance impacts off-site	Six (06) months from the date of issue of this License.
Plant Wide	Operations and	A written start-up, maintenance, and shutdown plan that describe, in detail, procedures for	Six (06) months from the

Location	License Conditions	Minimum Requirements	Timeframe
	Maintenance Plan	operating and maintaining each unit during periods of start-up, maintenance, and shutdown; and a program of corrective action for malfunctioning process must be developed. The Maintenance Plan must illustrate how the facility will be operated and maintained in order to comply with the emission limits as specified in this License.	date of issue of this License.
Neighborhood	Five Year Public Education and Awareness Plan	Public Education and Awareness Plan must include strategies for reaching out to selected audiences, messages that promote maintenance/achievements of ambient air quality goals and messages tailored to make people from all walks of life aware of specific issues related to the facility's operations taking into account emissions to the atmosphere, their impacts on health and surroundings/environment as well as preventative measures. The plan must also include aspect of monitoring and evaluation (M&E).	Six (06) months from the date of issue of this License.
Neighborhood	Ambient Air Quality Monitoring Plan	An Ambient Air Quality Monitoring Plan must provide specifics of the monitoring network to be established including details of the monitoring sites considerations, location including geographical coordinates of the identified sites, pollutants and meteorological parameters to be monitored, sampling and analysis method(s) for each parameter to be measured, monitoring objectives and spatial scale of representativeness for each monitoring site, data acquisition, management and reporting procedures, as well as necessary protocols, procedures and work instructions for effective management of the monitoring network.	Six (06) months from the date of issue of this License.

7.10. Start up, Maintenance and Shut-down Conditions

Unit Process	Description of Occurrence of Potential Releases	Pollutants and Associated Amount of Emissions	Briefly Outline Back Up Plan
Start-up	Fuel oil-assisted start-up to get the unit up to temperature	Particulate emissions in excess of 50 mg/Nm ³	Start-up is of limited duration
Shut-down	Plant failure /breakdown	Particulate emissions in excess of 50 mg/Nm ³	To be provided as per Condition 7.2.4
Bag leakages	Leaks in fabric filter plant bags will result in higher emissions of ash	Particulate emissions in excess of 50 mg/Nm ³	Leaking bags will be replaced
On-load rebags	Bags will be replaced if leaking or as part of normal maintenance cycle while unit is operating	Particulate emissions in excess of 50 mg/Nm ³	Bags will be replaced to maintain emissions performance

- 7.10.1 The License Holder shall, to the extent practicable, maintain and operate the facility including associated air pollution control equipment in a manner consistent with practice for minimizing emissions.
- 7.10.2 Leaking bags must be replaced as part of normal maintenance cycle in order to maintain emissions performance at all times, including periods of start-up, shutdown and malfunction.
- 7.10.3 During a period of start-up, shutdown, or malfunction, the License Holder shall operate all unit processes (including associated air pollution control equipment) in accordance with the procedure specified in the start-up, shutdown, maintenance and malfunction plan.
- 7.10.4 Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Licensing Authority, which may include, but is not limited to, monitoring results, review of operating maintenance procedures and inspection of the facility.
- 7.10.5 The License Holder shall maintain records of the occurrence and duration of any start-up, maintenance, shutdown, or malfunction in the operation of each unit; any malfunction of the air pollution control equipment; or any periods during which a CEMS is inoperative.
- 7.10.6 Notification of a start-up, shutdown, or a malfunction shall be made by the License Holder in accordance with Condition 7.8

8. DISPOSAL OF WASTE AND EFFLUENT ARISING FROM LISTED ACTIVITIES

The disposal of any waste and effluent arising from carrying out listed activities must comply with the relevant legislation and requirements of the relevant authorities.

9. PENALTIES FOR NON-COMPLIANCE WITH LICENSE AND STATUTORY CONDITIONS OR REQUIREMENTS

Failure to comply with any of the License and relevant statutory conditions and/or requirements is an offence, and the License Holder, if convicted, will be subjected to those penalties as set out in section 52 of the AQA.


10. ATMOSPHERIC EMISSION LICENSE ENDORSEMENT

SIGNATURE:

NAME:

DESIGNATION:

DATE:



Stanley Koenaire
Air Quality Officer

12/01/2020