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Introduction

1. Scope

This procedure is applicable to all employees at Grootvlei Power Station as defined below.

This procedure is applicable to all activities/projects that could have significant environmental impacts at Grootvlei Power Station.

1.1 Purpose

To identify waste management issues on site.

To ensure control through the correct handling, storage and disposal of hazardous and non-hazardous (domestic) waste at Grootvlei Power Station.

To stipulate the required waste management information to be recorded and reported on.

2. References

1. Environmental Conservation Act (Act 73 of 1989)
2. National Environmental Management Act (Act 107 of 1998)
3. National Environmental Management Waste Act (Act 59 of 2008)
4. Health Act (Act 63 of 1977)
5. Atmospheric Pollution Act (Act 45 of 1965)
6. Occupational Health and Safety Act No. 85 of 1993
7. Hazardous Substances Act (Act 15 of 1973)
8. Constitution of the Republic of South African (Act 108 of 1993)
9. Water Act (Act 54 of 1956)
10. National Water Act (Act 36 of 1998)
11. 32-245 Waste Reporting Directive
12. ESKADAAO3 Corporate directive for the management of polychlorinated Biphenyls (PCB's)
13. ESKPBAAC4 Waste Management Policy
14. ESKPBAAA4 Ozone Depleting Compounds Management and Phase Out
15. ESKASAAC2 Management of PCB's
16. ESKPVAAG5 Requirements for the safe processing, storing, removing and handling of asbestos or asbestos containing materials
17. ESKADAAI8 Safe processing, storing, removing and handling of asbestos and materials containing asbestos

3. Definitions and Abbreviations

3.1 Definitions

- 3.1.1 Employee – personnel in the full-time or part-time/occasional employ of Grootvlei Power Station, including contracted workers as per the OHSAct.
- 3.1.2 Domestic (general) waste – a generic term applied to waste that, because of its composition and characteristics, does not pose a significant threat to public health or the environment.
- 3.1.3 Hazardous waste - waste which has the potential, even in low concentrations, to have significant effect on public health and/or the environment. This would be on account of its inherent chemical and physical characteristics, such as toxic, ignitable, corrosive, and carcinogenic or other properties.

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3.1.4 Activity - Any action whether actual, planned or unplanned, that is performed by, or related to the functioning of Grootvlei Power Station.

3.1.5 Environment - The surrounding in which humans exist that is made up of:

- The earth's land, water and atmosphere,
- Micro-organisms, plant and animal life,
- Any part of combination of (a) and (b) and the interrelationship among and between them; and
- The physical, chemical, aesthetic and cultural properties and conditions of these surroundings that influence human health and well being.

3.1.6 Environmental Aspect - An element of an organisations' activity, product, or service: that can or may have a beneficial or adverse impact on the environment.

3.1.7 Environmental Impact - The degree of change in an environment resulting from the effect of an activity on the environment, whether desirable or undesirable.

3.2 Abbreviations

PCB	-	Polychlorinated Biphenyls
SANS	-	South African National Standard
KPI	-	Key Performance Indicator
AWR	-	Ash Water Return
WIS	-	Waste Information System
GEM	-	Generation Environmental Management
B,P&A	-	Business Processes and Assurance
e.g.	-	for example

4. Responsibilities

4.1 Power Station Manager:

The Power Station Manager is accountable for:

- Appointing in writing competent persons to manage all identified waste management activities
- Providing all the resources necessary to sustain the waste management process
- Supporting initiatives that will ensure continual improvement

4.2 B, P & A Manager:

The B, P & A Manager is responsible for:

- Providing all the resources necessary to sustain the waste management process
- Supporting initiatives that will ensure continual improvement

4.2 Environmental Section:

The Environmental Section is responsible for:

- Ensuring reputable contractors for the collection and disposal/recycling of waste are used
- Communicating waste management related issues to the rest of the personnel
- Managing the resources necessary to sustain the waste management process
- Keeping certificates of manifests and safe disposal of all waste
- Keeping records of all hazardous and non hazardous waste disposed of
- Routine waste reporting to GEM as required for the WIS and as defined in procedure

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- Annually updating the list of all waste handled/handlers
 - Ensuring waste management conforms to legal and other requirements
 - Participate in local environmental waste forums.

4.3 Occupational Hygiene Officer:

The Occupational Hygiene Officer is responsible for ensuring that:

- Asbestos stripping, handling and disposal on site complies with legal and other requirements.
- Asbestos shall be stripped and reported upon in accordance with an approved plan as accepted by the Department of Labour.
- Any material suspected of asbestos fibre contamination is disposed off as asbestos material on site.
- The on site asbestos waste disposal site conforms to the required legal/licence requirements.

5. IBI Tools

- This procedure must be strictly adhered to in order to achieve the following main objective:
 - ✓ To ensure that the right action are performed in the right sequence
 - ✓ To avoid repeating the mistakes of other
 - ✓ To minimise the potential for making mistakes
- Read the whole procedure and ensure that all the resources required for the activity to be carried out are available
- Use correct PPE for personal safety for each and every specific job
- For each job, each and every shift must have a pre-job brief and if the job is held over to another shift the pre-job shall be repeated before work starts again
- Risk Assessment shall be agreed upon by the involved parties or departments before the activity is carried out on the plant in order to outline the possible consequences of the task
- Before taking action use a STAR principle to ensure you do the right thing to the right thing that is:
 - STOP everything you are doing: take two minutes and observe two meters around you to eliminate any current or potential distractions
 - THINK through what you are going to do and what you want to
 - ACT – Take the action safely by doing the following:
 - ✓ Read each individual step before taking any action
 - ✓ Use appropriate place-keeping during and after performance of each step
 - ✓ (circle/slash/tick)
- REVIEW – After your action, review what happened and verify if the desired indication / response / outcome is achieved
- Three way communication must be adhered to in the following sequence:
 - The sender provides clear and concise direction / information
 - The receiver repeats back the message to the sender
 - The sender confirms that the receiver understand the message (usually by saying “that is correct”)

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- Post-job discussions shall take place after every job. If there are lessons to be learnt, they must be documented and shared to all involved persons or departments.

6. Procedure

6.1 On-site Waste Management (Handling, Storage and Disposal):

6.1.1 Water plant clarifier blow down:

- i. Clarifier blow downs are part of the normal operating of the water plant. Blow downs enter the Station's closed loop effluent drainage system via the effluent plant where, if the effluent water is too acidic, it is neutralised.

6.1.2 Water plant sand filter backwash:

- i. Sand filter backwash is part of the normal operating of the water plant. Backwash is recovered and retained in the closed raw water system, until unable to recover any longer, and then the backwash water will be treated as waste water and removed to the Station's closed loop effluent drainage system via the effluent plant where, if the effluent water is too acidic, it is neutralised.

6.1.3 Domestic waste:

- i. Satellite collection bins/drums and skips shall be placed strategically throughout the station.
- ii. The cleaning services contractor/s are to collect waste from the satellite bins and place this waste into skips.
- iii. The waste disposal contractor transports the skips to the permitted landfill site.
- iv. Records of all waste disposed of as well as of the current licence for the waste handler/s and disposal site/s, will be kept by the Environmental Section for reporting purposes.
- v. Domestic waste is generally mixed waste comprising paper, wood, plastic, glass, garden refuse, perishable food-stuff refuse and other non-hazardous materials.
- vi. However, waste paper shall as far as possible, be recovered for recycling and kept separate from other waste types.
- vii. Confidential documents shall be shredded before disposal. When a truck load of waste paper is available, it will be transported to the waste recycling contractor.
- viii. Garden refuse will also, as far as possible, be removed by the horticulture contractor and disposed of at the designated Municipal disposal site.
- ix. Plastic bottles will, as far as possible, be recovered for recycling and kept separate from other waste, provided the bottles did not originally contain any hazardous substance.

6.1.4 Asbestos:

- i. Asbestos stripping, handling and disposal on site will be the responsibility of the site Occupational Hygiene Officer.
- ii. Asbestos waste must be disposed of in double impermeable sealed and labelled plastic bags or in a leak proof container, capable of sealing properly in order to prevent spillage.
- iii. Asbestos shall be stripped in accordance with an approved plan as accepted by the Department of Labour.
- iv. The company, responsible for removing and disposing of the waste, must comply with Eskom's safety and health regulations on site and must provide safety equipment for the safe handling of the waste. He must also provide and Emergency Response procedure of the action to be taken in the event of spillage during loading and transportation.
- v. Disposal of asbestos at the Station's Asbestos Disposal Site (Registration No.16/2/7/C123/B20/1/1 P492 of 2005/11/26) will be done according to an approved plan.

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6.1.5 Building rubble:

- i. All building rubble is reclaimed for back filling and soil erosion control provided the quality and quantity of the waste has been verified by the Environmental Section as conforming to legal requirements.
- ii. The Environmental Section will indicate where building rubble can be disposed.

6.1.6. Medical/sanitary waste:

- i. Medical waste is generated in the clinic at the Station, which caters for the basic medical requirements of the workers/contractors and which provide assistance in emergencies. The medical waste stream would normally contain used bandages, needles, syringes, dressings, medicine containers, tissues and similar items. Medical waste is classified as a hazardous waste as it can cause infections.
- ii. Medical and sanitary waste will be collected and accumulated in dedicated containers on a monthly and weekly basis, as required.
- iii. Waste will be removed according to contracted agreement and records will be kept by the Medical Centre and Environmental Section.
- iv. Medical and sanitary waste will be removed by an appropriately licensed waste contractor and incinerated by a licensed hazardous waste incinerator service provider.

6.1.7 Ferrous and non-ferrous metals:

- i. All scrap metal will be reclaimed for recycling.
- ii. Normal ferrous metals will be deposited in the scrap metal enclosure at the waste transit area from where it will be removed by the approved contractor.
- iii. Non-ferrous metals such as brass and copper will be kept in a place of safe storage until sold, according to national contract.
- iv. Records of scrap metals sales will be kept by the Stores and Environmental Sections for reporting purposes.

6.1.8 Oils:

- i. Waste oils and greases are considered hazardous, as they can, if not correctly disposed of, cause hydrocarbon pollution of soils and water resources. Hydrocarbons do not degrade easily and are difficult to treat.
- ii. Old oils and greases are placed in 210 litre drums, specifically for this purpose, from where it is collected by a contractor for recycling and submission of safe disposal certificates.

6.1.9 Oily sludge:

- i. Oily sludge is treated as hazardous and cannot be recycled due to contamination with material other than oil.
- ii. Oily sludge will be disposed of as hazardous waste.

6.1.10 Oil filters:

- i. No vehicle oil filters will be catered for on site and must be replaced off-site as per the vehicle/fleet maintenance contract.
- ii. All other oil air filters will be disposed of as hazardous waste.

6.1.11 Chemical and laboratory waste:

- i. Waste chemicals are hazardous waste and must be disposed of in labelled sealed, leak proof containers and disposed of accordingly.
- ii. Spent chemicals from the laboratory will be diluted/neutralised before they form part of the Station's closed loop effluent drainage system.

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