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GIT Environmental Management	**Environmental Manager**	**General Manager**
Date	Date	Date 2025-04-17

Contents

1. Scope

1.1 Purpose

The purpose of this procedure is to prevent or reduce the discharge of waste to the environment by providing designated waste collection areas and containers and arranging for regular disposal throughout Kriel Power Station's jurisdiction It is also intended to ensure that employees of Kriel Power Station are aware of the waste generated on site and understand which containers to use for the various waste streams to reduce or eliminate the mixing of waste

1.2 Applicability

This procedure applies to waste generated at Kriel Power Station, including waste produced by contractors and waste produced at remote areas

2. References

References to the following documents will enhance the understanding of the reader on the subject covered in this document The requirements of these documents are, however, not an extension of this document

- Eskom Waste Management Standard 32-245
- National Environmental Management Act (Act No 107 of 1998)
- National Environmental Management Waste Act (Act No 59 of 2008)
- Waste classification and management regulations (GN R634 OF 2013)
- National Norms and standards for disposal of waste to landfill (GN R636 of 2013)
- SANS 290 2016 Mineral insulating oils – Management and Handling of Polychlorinated Biphenyls (PCB)
- SANS 10248-3 2011 Management of Healthcare Waste
- SANS 10228 The identification and classification of dangerous goods for transport by road and rail modes

3. Definitions and abbreviations

3.1 Definitions

3.1.1 Building waste: includes all waste produced during the construction, alteration, repair

or demolition of any structure, and includes building rubble, earth, vegetation and rock displaced during such construction, alteration, repair or demolition

3.1.2 Container: a disposable or re-usable vessel in which waste is placed for the purposes of storing, accumulating, handling, transporting, treating or disposal of that waste and includes bins, bin-liner and Skips

3.1.3 Disposal: the burial, deposit, discharge, abandoning, dumping, placing or release of any waste into, or onto, any land

3.1.4. Garden Waste: means organic waste which emanates from gardening or landscaping activities at residential, business or industrial premises including but not limited to grass cuttings, leaves, branches, and includes any biodegradable material and excludes waste products of animal origin and bulky waste

3.1.5. Health Care Waste means waste capable of producing any disease and includes, but is not limited to the following

(a) laboratory waste

(b) pathological waste

(c) infectious liquids and infectious waste

(d) chemical waste, and

(e) pharmaceutical waste

3.1.6 Recycle: a process where waste is reclaimed for further use, which process involves the separation of waste from a waste stream for further use and the processing of that separated material as a product or raw material

3.1.7 Waste: any substance, material or object, that is unwanted, rejected, abandoned, discarded or disposed of, or that is intended or required to be discarded or disposed of, by the holder of that substance, material or object, whether or not such substance, material or object, whether or not such substance, material, or object can be re-used, recycled or recovered and includes all wastes defined in schedule 3 of the Waste Act

3.1.8 Waste Disposal Facility any site or premise used for the accumulation of waste with the purpose of disposing of that waste at that site or on that premises

3.1.9 Waste Treatment Facilities any site that is used to accumulate waste for the purpose

of storage, recovery, treatment, reprocessing, recycling or sorting of those waste

3.1.10 Waste Classification establishing

(a) Whether a waste is hazardous based on the nature of its physical, health and environmental hazardous properties and

(b) The degree or severity of hazard posed

3.1.11 Waste Generator any person who actions, production processes or activities, including waste management activities, results in the generation of waste

3.1.12 Waste Manifest System a system of control documentation, which accompanies a load of hazardous waste transported from the point of generation to the waste management facility

3.1.13 Waste Transporter any person who conveys or transfer's waste

(a) between the waste generator and the waste management Facility or,

(b) between waste management facilities

3.1.14 Waste Management Facility a place, infrastructure, structure or containment of any kind, wherein, upon or at, a waste management activity takes place and includes a waste transfer station, container yard, landfill site, incinerator, a lagoon, recycling or a composting facility

3.2 Abbreviations

3 2 1 KPS Kriel Power Station

3 2 2 EMS Environmental Management System

3 2 3 HOD Head of Department

3 2 4 HCW Health Care Waste

3 2 5 PCB Polychlorinated biphenyls

3 2 6 DEFF Department of Environment, Forestry and Fisheries

3 2 7 DWS Department of Water and Sanitation

3 2 8 EMP Environmental Management Plan

3 2 9 PPE Personal Protective Equipment

3 2 10 GN Government Notice

3 2 11 EMD Electrical Maintenance Department

3 2 12 KMT Kriel Management Team

4. Procedure

4.1 Waste Management

- All waste generated at KPS including that generated by contractors and at remote areas shall be disposed in accordance with the waste management procedure The procedure will ensure that all waste is disposed responsibly with due consideration for the environment, according to the applicable legislation and in a cost-effective manner
- KPS will adhere to the principle of the waste management hierarchy elimination, reduction, recovery and recycling, while conserving energy, water and other natural resources wherever feasible

4.1.1 Types of Waste produced at KPS

The management of the following types of waste will be covered in this procedure

- General waste
- Fluorescent tubes and mercury containing devices
- Oil contaminated Waste (e g oil contaminated rags and filters)
- Used oil
- Asbestos waste
- Medical waste (Health care waste)
- Scrap Metals
- E-waste (e g Scrap computers, Cartridges)
- Solvents
- Polychlorinated biphenyls (PCBs)
- Garden refuse
- Sanitary waste
- Sewage sludge and screen waste
- Building rubble
- Expired chemicals
- Food Waste(swirl)
- Paper
- Sulphur
- Ash

- Conveyor belts
- Radioactive
- Cans and Tins
- Batteries

4.2 RESPONSIBILITIES FOR WASTE MANAGEMENT

4.2.1 Waste Separation/segregation

- Waste separation is the responsibility of the waste generator and should be done at the source This will enable the recycling of the different types of waste To facilitate waste separation and recycling, the KPS waste bins/skips colour coding has been developed, see Annexure 1 and 2
- OPS Support Department is responsible for ensuring that bins, skips, drums and other waste receptacles are made available at KPS
- Line management shall be responsible for waste separation in their areas of responsibility
- Line management and/or the Waste Coordinator is responsible for communicating with the Waste Contract Manager when the skips and bins are full and require removal
- The Waste Contract Manager shall be responsible for communicating with the Service Provider for waste removal and Environmental Department shall be responsible for communicating with recycling companies The following types of waste will be recycled

  Scrap metal

  Paper

  Used oil

  E-waste

  Ash

  Swirl/ waste food

  Conveyer Belt

4.2.2 Labelling of waste Skips and waste bins

- The Waste Contract Manager must ensure that all skips and waste bins are labelled,
- Records must be kept, reflecting the following

  -The date on which waste was first placed in the skip or bin

  -The date on which waste was placed in the skip/bin for the last time when the skips /bin was filled, closed, sealed or covered

  -The date and quantities of waste added, and waste removed from skips/bins

  -The type of waste of waste in the skip or bin
- The Waste Contract Manager, Waste Co-ordinator, Environmental Department as well as the waste generator must ensure that the waste is re-used, recycled, recovered, treated and/or disposed with 18 months of generation

4.2.3 Ordering of waste skips and waste bins

- The appointed Servicers Provider for recycling used oil at Kriel should ensure that drums are replaced during collection
- The Waste Coordinator should ensure that all the skips meet the required specifications and should contact the waste contract manager for any defects on the skips
- Skips required for outages shall be requested from the Waste Contract Manager by line management a month prior to the outage The quantities and skip types must be specified when the request is made

4.2.4 Waste Handling Contractors

- Waste recycling and waste handling/transporting companies shall be contracted in writing and invoices retained as records
- All waste handling and recycling companies should be registered and adhere to legal requirements before contracting them
- The Waste Contract Manager shall be responsible for filing waste contractors' permits for record purposes
- A call for service to the waste contractor shall be done by the Waste Contract Manager whenever the skips require to be emptied

- The Waste Contract Manager shall prepare a waste removal schedule showing all the waste to be collected The final disposal area and methods of treatment for each type of waste are shown in Annexure 3
- All waste that is not part of the waste contract shall be the responsibility of the generating Department to dispose of and pay the disposal cost

4.2.5 Waste Monitoring and Reporting

- For all the waste classified as hazardous, a waste manifest document must be in possession The waste manifest document must contain
  - Unique consignment identification number
  - Generators contact details (Contact person, physical postal address, phone, fax, and emails)
  - Physical address of the site where the waste was generated
  - Contact number in case of an incident or after hours
  - Origin /source of the waste (process or activity)
  - Classification of the waste and Safety Data Sheet
  - Quantity of waste in Volume (m^3) or weight (tons)
  - Intended receiver (waste manager)
  - Declaration
  - Name of the transporter
  - Address and telephone number of the transporter
  - Declaration acknowledging receipt of the waste
  - Waste Manager Name, address and contact details
  - Receiving waste management facility name, address and contact details
  - Waste management facility license number
  - Date of receipt
  - Quantity of waste received by weight (tons) and volume (m^3) if applicable
- A monthly report must be accurately maintained and kept up to date on the waste generated and it must reflect the following
- The classification of the waste
- The quantity of each waste generated

- The quantities of each waste that has either been re-used, recycled, recovered, treated or disposed of
- All departments producing waste should report the amount of waste generated or recycled and the income received if any was
- Bi-Annual and annual Waste reports shall be sent to Generation Division Waste Management by the environmental Department
- Waste Monitoring and reporting will be done as per **32-245 Waste Management Standard**

4.3 Non – hazardous waste

4.3.1 General Waste

- All general waste shall be disposed of in the white bins (and grey-concrete bins)
- The Station Cleaning Supervisor and Waste Coordinator shall identify all areas where the domestic waste bins are required and make them available
- Line Management shall request additional white bins from the Waste Contract Manager if there is need for more bins in their areas
- The Waste Disposal Contractor shall dispose of all the collected waste at the permitted landfill site

4.3.2 Garden refuse

- All garden waste shall be placed in white reusable bags and transported to Thubelihle Landfill Site, where the bags are emptied and reused
- The Horticulturist Contractor aims to reduce the quantity of waste sent to landfill by creating a compost heap using isolated piles of leaves, allowing for on-site recycling and composting
- Wood collected during garden activities shall be donated to the local Kriel community for use as firewood
- The quantities of garden waste disposed shall be communicated to the Environmental Department by the Horticulturist

4.3.3 Metal Waste

- All scrap metals excluding copper shall be deposited into the scrap metals skips painted blue and the skips will be collected by a scrap metal recycling contractor
- Copper pieces shall be placed in the purple skip kept at Stores
- The final use/disposal of such waste, quantities and income received if any should be communicated to the Environmental Department

4.3.4 Building rubble

- All building rubble shall be placed in the brown skip and collected by the waste disposal contractor to a permitted landfill site

4.3.5 Ash

- Ash from the station will be disposed of to the Ash dams while some of the fly ash will be recycled
- Ash waste is measured in Kilo tonnes (kt) and is calculated from the coal burnt using the formula below

$$\text{Ash produced} = \frac{\text{Ash in Coal (\%) x Coal Burn (tonnes)}}{100} = \frac{\text{Total}}{1000} = \text{kt}$$

- Ash waste figures will be reported to Generation Division Waste management bi-annual and Annually

4.3.6 Waste food

- All waste food shall be collected from the canteen twice a week by a contractor This should be done in compliance to the procedure named **Disposal of waste food and cooking oil from Kriel Power Station Canteen (FSM0098)**
- The final use/disposal of such waste and monthly quantities should be communicated to the Department
- Personnel at Canteen should ensure that the bins are not filled full and are not leaking

4. 4 Hazardous Waste

- Hazardous waste shall be disposed in the correct containers, and always separated according to the Waste Colour Coding system used at Kriel Power station
- During emergency situations where a specific waste type is not catered for in the Waste Colour Coding system, available skips shall be used for that specific waste and labeled accordingly
- Storage sites shall be equipped with an impermeable floor and bunding to prevent environmental contamination
- Containers used shall be suitable for the contents, and damaged containers shall be safely disposed of in accordance with waste handling procedure
- The Transport operator shall use HAZCHEM placard, and vehicles will be monitored by the responsible person from the department where the waste is collected
- Safety Data Sheets (SDS) for hazardous chemicals shall be made available at the hazardous waste storage area
- NOTE Not all hazardous waste will be accepted at the landfill site A list of prohibited or restricted wastes for disposal is available in Norms and Standards for Disposal of Waste to Landfill (Government Notice R636 if 2013)

4.4.1 Fluorescent tubes and mercury containing devices

- All fluorescent tubes shall be handled and installed by the Electrical Maintenance Department (EMD)
- Used fluorescent tubes shall be taken to the Fluorescent Tube Handling Area next to the EMD workshop
- A service request to the Hazardous Waste Contractor shall be done by the Waste Contract Manager whenever the fluorescent tube bins are full, or considering the duration that the used fluorescent tubes have been stored
- The Hazardous Waste Contractor shall send the Florescent tube to a recycling facility and not dispose them at a waste management facility as per GN R636 standard for disposal of waste to landfill

4.4.2 Polychlorinated Biphenyls

- Equipment or containers that contain or come into contact with Mineral insulating oils containing PCBs must be clearly labeled with visible, indelible markings in accordance with SANS 0290 Mineral Insulating Oils – Management and Handling of Polychlorinated Biphenyls (PCBs)
- A record of PCB – contaminated equipment testing, and inventory shall be kept
- Disposal shall be undertaken by disposal or decontamination facilities approved and licensed by DEFF/ DWS
- PCB – contaminated materials containing >500 parts per million (ppm) are not permitted to be sold, unless they have been treated to reduce the PCB level below the 50ppm

4.4.3 Used oil

- The department generating used oil shall store it in labelled drums, and thereafter arrange for it to be transported to the oil recycling area for storage (as per work instruction **Management of Oil Waste at Oil Recycling Area (MMM 0494)** prior to being collected by the contractor
- The drums shall be stored in a bunded area with impermeable flooring and/or in carrier provided by the contractor, that will be placed in impermeable flooring
- Operators shall put on safety shoes, work suit and oil impermeable gloves when handling oil waste
- The oil recycling company shall collect the oil from the oil recycling area for recycling
- All oil waste storage drums shall be tightly closed with fitting lids and stored in an upright position to prevent spillage of oil onto the floor
- Drums shall be inspected for leaks prior to being filled with used oil to avoid potential leakages

4.4.4 Oil contaminated Waste

- Oil contaminated waste includes rags with oil, PPE contaminated with oil, used oil filters and oil contaminated spill absorbents

- The oil contaminated waste materials shall be disposed in red skips by the department producing the waste and collected by the contractor for disposal at a licensed facility

4.4.5 E-waste

- Motswako contractor shall visit the station to replace and collect used printer cartridges or toners The final reuse/disposal of such waste shall be communicated to the Environmental Department
- All waste computers, scanners and copiers shall be sent to Stores for auctioning and a record of all computers sent to shall be kept at the IT Department

4.4.6 Asbestos Waste

- Asbestos phase out plan is ongoing, the Occupational Hygienist will inform the contractor of the asbestos stripping schedule/Inventory
- Asbestos and asbestos containing materials including PPE that was used during asbestos stripping shall be placed in the yellow skips with lids
- All used air filters from vacuum cleaners, air conditioners and ventilation equipment containing asbestos must be placed in impermeable bags and placed in the yellow skips
- Waste removal contractor shall remove the asbestos waste on request and dispose it at a registered waste disposal site specifically designated for the purpose
- Permit requirements for each disposal site shall be adhered to
- The Waste Contract Manager is responsible for ensuring that the contractor concerned with collection, transport and disposal of asbestos waste is complying with the provisions of the Occupational Health and Safety Act, the National Road Transport Act, SANS 10228 and SANS 10229
- The Occupational Hygienist or the asbestos stripping company shall inform the Environmental Department of the quantity of asbestos that was stripped from the plant and disposed of into the skips by providing the manifest and safe disposal certificate
- An Asbestos inventory shall be kept by the Occupational Hygienist and must be updated when an asbestos strip was done
- The final disposal and maintaining of the records are the responsibility of the Waste

Contract manager

4.4.7 Medical Waste

- General medical waste shall be separated from sharps/needles
- HCW handlers shall be provided with the suitable protective clothing and equipment to perform their tasks
- Sharp and liquid HCW (including swabs, bloodied bandages, etc) must be stored in suitable bins that comply with SANS requirements
- Infectious waste storage areas/bins must clearly display the international infectious hazard label and must be marked "Infectious Waste" Chemical or pharmaceutical waste storage areas/bins must display the appropriate international hazard labels and be marked "Chemical Waste"
- HCW waste must be managed according to SANS 10248
- Disposal of HCW shall be contracted to registered HCW transporters, transfer facilities and treatment facilities The HCW disposal contract may only be effective once the Environmental Department is satisfied that the waste management contractor has fully disclosed all its licensing and permit obligations and is adequately equipped for the activities proposed

  The HCW disposal contract must include at least the following

  -Description of the volume and types of HCW to be collected for treatment, and/or disposal

  -The disposal and/or treatment process to be used

  -The method for calculating the numbers of different HCW units collected

  -The verification of the physical condition of the HCW packages that are received

  -A statement about the infection risks and other hazards of each package

  -The responsibility for the sorting, counting and collection of the HCW packages received

4.4.8 Collection and transport

- The HCW disposal contract must stipulate the following regarding collection and transport

-The categories of HCW to be collected
-The volume or mass of each waste category that may require treatment and/or disposal
-The collection schedule as negotiated between the waste management contractor and the KPS Clinic
-Health and safety requirements, e g Personal Protective Equipment and Immunisation
-Emergency procedures to be followed where normal collection and Treatment/disposal procedures fail

- The contractor must provide the following
  -Signatures of the responsible person at the KPS clinic upon collection of HCW
  -The date and time of collection
  -The amount and category of waste collected

4.4.9 Spillages

- The HCW disposal contract must stipulate the actions that should be taken in the event of an HCW spillage
- The Waste Management Contractor must provide proof that it has the capacity and suitable equipment available in all instances to be able to handle an emergency spill of the categories of waste that is being handled

4.4.10 Treatment and disposal

- The contractor must provide the following
  -Proof of final treatment or disposal of the HCW
  -The treatment and/or disposal method for each individual waste category

4.4.11 Solvents

- The department purchasing solvent shall ensure that all solvents purchased are delivered with a 16-point safety data sheet which is then passed on to the user of the solvent
- All users of solvents must be trained in the purchase, storage, usage and disposal

of solvents

- Solvents shall be taken to the oil recycling area for disposal or recycling

4.4.12 Sanitary waste

- All sanitary waste shall be placed in lined bins and the waste shall be collected twice in a month

4.4.13 Sewage Sludge and sewage screen waste

- Sewage sludge and waste from the screens shall be collected by the waste contractor for disposal at a hazardous waste disposal facility
- Sewage sludge and waste from the screens can be disposed at the municipal landfill site if the sewage is tested and found to be non – hazardous
- Amount of sewage sludge and waste from screens disposed shall be forwarded to the Environmental Department by the Chemical Services Department monthly

5 Records

This document can be accessed electronically via

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Controlled copies can be accessed in the Documentation Centre (Library) upon request

6 Authorizations

This document has been seen and accepted by

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6 Revisions

Date	Rev.	Compiler	Remarks
15 April 2025	09	Takalani Kutame	• Added definitions • Rephrased sentences • Updated Section 4 3 2 Garden Refuse • Updated Authorizations • Updated Annexure 3 & 5
25 April 2023	08	Palesa Sebilo	• Change the time frame of submitting the waste report • Rephrasing some of the sentences
16 March 2021	07	Lizo Ntila	• Update on the management of HCW
17 April 2018	06	Palesa Sebilo	• Definitions • Update the waste streams • Manifest requirements • Labelling requirements • Classification requirements
March 2017	05	Mpho Nnzimeni	Procedure due for revision • Changes on responsibility for waste management • Addition of conveyer belts on waste streams to be recycled Requirements for crushing fluorescent tubes removed

Date	Rev.	Compiler	Remarks
			• Annexure 5 PCB contaminated testing & • Inventory removed
July 2015	04	Thandokazi Myingwa	• Amended procedure to close the ISO 14001 Re-certification Audit finding
January 2015	03	Thandokazi Myingwa	General amendments of the procedure, • Include the disposal of PPE • Change responsibility for waste management
September 2013	02	Thandokazi Myingwa	Due for revision, • Annexure 2 & 4 changed
September 2011	01	Livhuwani Tshilate	• It was due for revision

8 Development team

The following people were involved in the development of this document

Livhuwani Tshilate

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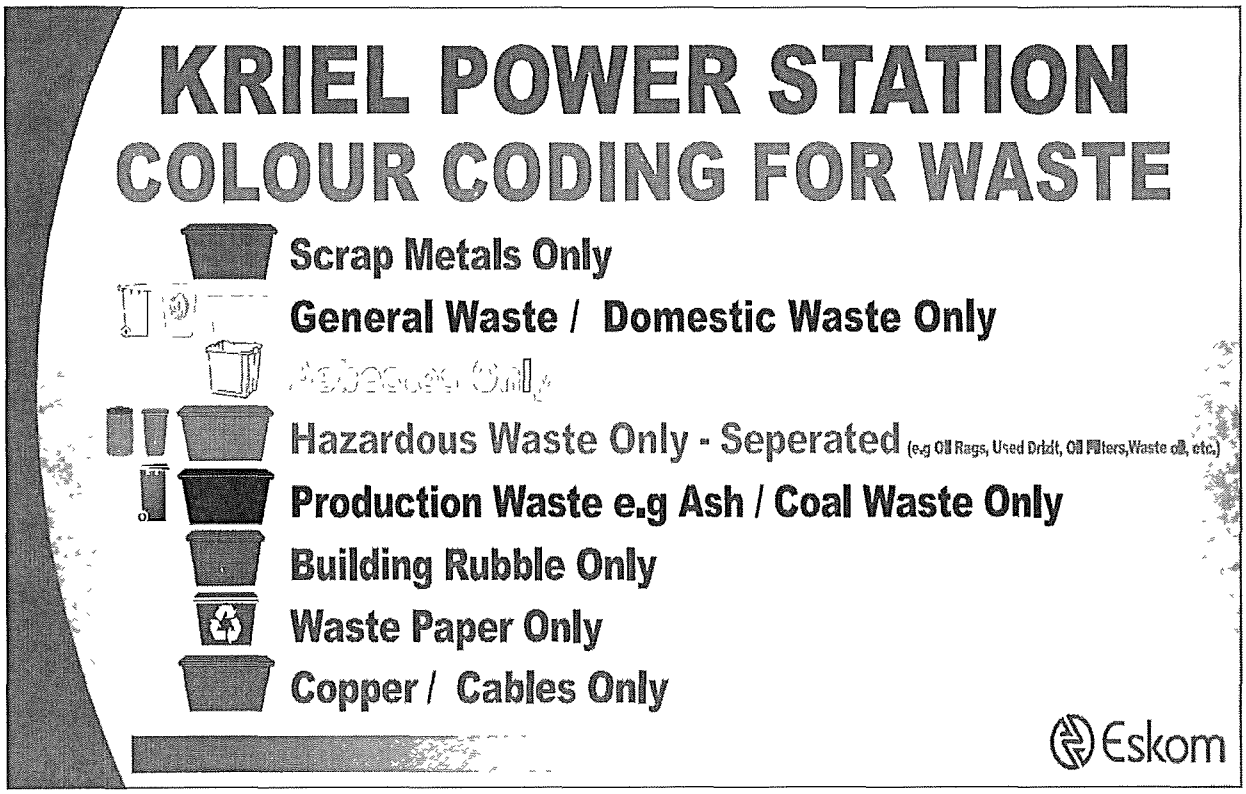
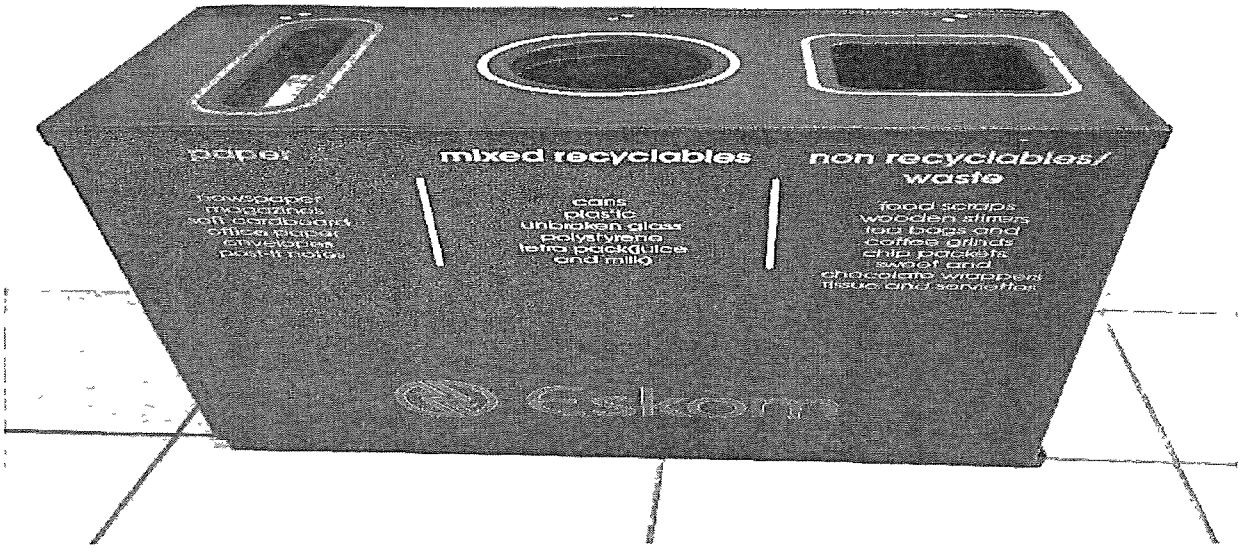
9 Annexures

ANNEXURE 1: Kriel Power Station colour coding for waste containers



ANNEXURE 2: Kriel Power Station office recycling bins



ANNEXURE 3: Final disposal areas for Kriel Power Station's Waste

Type of Waste	Final Method of Disposal	Disposal Site
Domestic waste	Co-disposed	Middelburg Landfill Site
Fluorescent tubes and mercury containing devices	Co-disposed	Holfontein
Oil contaminated Waste e g oil contaminated rags and filters	Co - Dispose	Holfontein
Used oil	Recycled waste	Mpumalanga Oil
Asbestos waste	Trench Cover Immediately	Plat kop/Holfontein
Medical Waste (Health care waste)	De-Infect size by use of electrolyzing waste	Solid Waste Technologies
Metals	Recycled waste	Ermelo Scrapcore
E-waste	Recycled	Mali's Transport cc
Solvents	Ash blend 1 1	Holfontein
Ozone depleting substances	Kriel is in a process of phasing out	None
Polychlorinated biphenyls (PCBs)	Ash Blend 10 1	Holfontein
Sulphur hexafluoride gas (SF_6) and by-products	Treat with Lime	Holfontein
Garden refuse	Co- disposed	Thubelihle Landfill Site
Sanitary Waste	Treat with Lime	A thermal
Sewage Sludge and screen waste	Treat with lime	Holfontein
Building rubble	Co -Dispose	Middelburg Landfill site
Redundant chemicals	Burning	Thermo Powers
Waste food	Recycled	PJ Ntuli

ANNEXURE 4: WASTE REMOVAL SCHEDULE

TYPE OF WASTE	WASTE CONTRACTOR	FREQUECY OF WASTE REMOVAL	CONTRACT MANAGER
Domestic waste	ERI Waste	Once a Week	Ingrid Mngomezulu
Fluorescent tubes and mercury containing devices	ERI Waste	When required	Ingrid Mngomezulu
Oil contaminated Waste e g oil contaminated rags and filters	ERI Waste	When required	Ingrid Mngomezulu
Used oil Recycled	Mpumalanga oil	When required	Nyadi Tjia
Asbestos waste	ERI Waste	When required	Ingrid Mngomezulu
Medical Waste (Health care waste)	ERI Waste	When required	Ingrid Mngomezulu
Metals (Recycling)	Ermelo Scrapcore	When required	Mulatedzi Mugwena
E-waste	Motswako	When required	Nelisiwe Vilakazi
Garden refuse	Mahltech	Daily	Mafadi Sathakge
Sanitary Waste	Country Bulk Trading	Bi-Monthly	Veliswa Mlotshwa
Sewage Sludge and screen waste	ERI Waste	When required	Ingrid Mngomezulu
Building rubble	ERI Waste	When required	Ingrid Mngomezulu
Redundant chemicals	ERI Waste	When required	Ingrid Mngomezulu
Conveyer Belts		When required	F Mametsa

ANNEXURE 5: WASTE REPORTING TEMPLATES

Eskom

Consolidated - Eskom Gx Waste Reporting