



TITLE	STANDARD FOR OIL SPILLAGE CLEANING AND REHABILITATION	REFERENCE	CP_TSSTAN_153	REV	0
		DATE:	AUGUST 2022		
		PAGE:	1	OF	17

COMPILED BY	FUNCTIONAL RESP.	APROVED BY	AUTHORIZED BY
-------------	------------------	------------	---------------

**STANDARD FOR OIL SPILLAGE CLEANING
AND REHABILITATION**

REFERENCE
CP_TSSTAN_153
PAGE 2

REV
0
OF 17

TABLE OF CONTENTS	Page
FOREWORD	3
1. INTRODUCTION	4
2. Background and PURPOSE	4
3. SCOPE	4
4. NORMATIVE REFERENCES	5
5. ABBREVIATIONS	5
6. DEFINITIONS	5
7. SPILLAGE MANAGEMENT:	5
8. OIL DRUMS MANAGEMENT PROCESS	6
9. TRANSFORMER AND OIL CONTAINING SWITCHGEAR MANAGEMENT PROCESS 7	
10. SPECIFICATION OF PROPER STORAGE YARD	7
11. RULES TO ABIDE BY AT ALL TIMES:	9
12. RESPONSIBILITIES	9
13. OIL SPILLAGE RESPONSE PROCESS	10
14. ENVIRONMENTAL REQUIREMENTS	12
15. REQUIREMENTS	12
16. PRICING SCHEDULE	14
17. QUALITY MANAGEMENT	15
18. HEALTH AND SAFETY MANAGEMENT	15
19. QUALITY MANAGEMENT	15
ANNEXURE A - BIBLIOGRAPHY	16
ANNEXURE B - REVISION INFORMATION	17

**STANDARD FOR OIL SPILLAGE CLEANING
AND REHABILITATION**

REFERENCE

CP_TSSTAN_153

REV

0

PAGE

3

OF

17

FOREWORD

This standard was prepared by the following Work Group members:

P Radebe

Safety Health Environmental Risk and Quality

The Emergency study committee was appointed by the Research and Asset Development, which, at the time of approval, comprised of the following members:

Nolubabalo Makana

Metering

Arsenio Cossa

Metering

Masape Mkgadi Kahumba

Secondary Plant (Metering)

Gavin Jardine

Infrastructure Planning

David Makoni

Operations

Hilda Nonkonyana

Infrastructure Planning

Anza Mudau

Infrastructure Planning

Thabiso Letsaoana

Logistics & Warehouse

Mpho Molope

Logistics & Warehouse

Recommendations for corrections, additions or deletions should be addressed to the:

Chief Engineer

Research and Development Department

City Power Johannesburg (SOC) Ltd

P O Kiosk 38766

Booyens

2016

1. INTRODUCTION

Due to legislation and fines that can be incurred it is important to standardize on the services requirements for oil spillage cleaning. This standardization will ensure compliance and less environmental and health impact. The oil spillage can occur at the mini substation, Pole mounted transformers, Generators and at the transformers in Substations and anywhere at City Power premise/s where an equipment is placed or displaced.

2. Background and PURPOSE

City Power has numerous substations and depots where some of the transformers and switchgear rotatables are stored after decommissioning from the field and including apparatus in operation. This often results in uncontrolled release of oil from the equipment which seeps through the ground and the perforated concrete, resulting in safety (fire, accidents/unsafe surfaces) and environmental (soil contamination, ground water pollution, surface water pollution) when an incident occur.

The business needs to be proactive to can deal with the environmental challenges by responding timeously in dealing with spillages so as to avoid penalties from the regulatory bodies by putting in place effective and efficient control mechanisms.

- To minimize or prevent pollution from oil spillages, oil usage and leaking transformers;
- To prevent or reduce negative impacts on the environment from oil spillages/ leaking transformers;
- To show compliance with environmental legislation and regulations applicable to the City Power (CP);
- To ensure proper management, handling, transportation and storage of all oil containing materials (oil drums, transformers);
- To ensure effective implementation of ISO 14001: 2015 Environmental Management Systems which the organization subscribe to; and
- To ensure prompt reactions times in case of an oil spillage/ emergencies.

3. SCOPE

This standard deals with the oil spillage cleaning and rehabilitation in the City Power network.

4. NORMATIVE REFERENCES

The following documents contain provisions that, through reference in the text, constitute requirements of this specification. At the time of publication, the editions indicated were valid. All standards and specifications are subject to revision, and parties to agreements based on this specification are encouraged to investigate the possibility of applying the most recent editions of the documents listed below.

South African Bureau of Standards Code 0228, The Identification and Classification of Dangerous Substances and Goods, South African Bureau of Standards, Pretoria, 1990.

National Environmental Management Act, 1998 (Act 107 of 1998)

National Environmental Management: Waste Act, 2008 (Act 59 of 2008)

Environment Conservation Act (Act 73 of 1989) Section 20

Health Act (Act 63 of 1977)

Air Quality Act (Act 39 of 2004)

Hazardous Substances Act (Act 15 of 1973)

Occupational Health and Safety Act (Act 85 of 1993)

SANS 10234:2019 (Ed. 2.00) - Globally Harmonized System of classification and labelling of chemicals (GHS)

5. ABBREVIATIONS

The definitions and abbreviations in the normative references shall apply in this document.

6. DEFINITIONS

- Non-conformance: Deviations from plans, standards, procedures and policies;
- Non-compliance: Deviations from environmental legislation, regulations and other requirements and principles.

7. SPILLAGE MANAGEMENT:

Containment, Clean up and Rehabilitation of Oil/Diesel or Hazardous Chemicals Pollution.

Scope

The scope of work will cover the following streams:

- Cleaning and rehabilitation of oil contaminated substation/s/depots and Site/s.
- Business case study re: "Cleaning and Bioremediation of Hydrocarbon (Oil) Contaminated sites, including substations".
- Remediation of oil contaminated soil.

STANDARD FOR OIL SPILLAGE CLEANING AND REHABILITATION

REFERENCE
CP_TSSTAN_153
PAGE **6**

REV
0
OF **17**

-
- Samples of contaminated soil must be sent to the lab for analysis to determine the hydrocarbon content. Results shall be discussed with City Power.
 - Treatment of contaminated ballast stones/tar/concrete.
 - Polluted sites must be cleaned or bio-remediated and contaminated materials be safely disposed at the licensed and or approved landfills or disposal site where a disposal certificate be issued to City Power.
 - Environmentally friendly products must be used.
 - Reports shall be submitted and discussed with City Power, preferably the SHERQ department.

8. OIL DRUMS MANAGEMENT PROCESS

8.1 Oil Drums Management in City Power Depots/ Reuven complex

- Oil is deposited in the oil storage facilities at Reuven complex;
- It is stored in Reuven stores until ordered by depots for usage in their substations;
- Small quantities of oil may be sometimes collected and stored in City Power depots where it is stored in proper storage area until utilized.

THE FOLLOWING IS ADHERE TO, TO ENSURE PROPER HANDLING OF OIL:

8.2 Storage of new oil drums

- Inspection of all oil drums to verify that they are not damaged/ leaking;
- Oil storage area is properly marked as such (storage for new oil);
- Oil drums are stored in the stores storage area until collected by City Power depots
- Build a bund wall around bulk used oil storage tanks so that in the event of a spill or leak, the used oil will be contained.

8.3 Storage of old/ used oil drums

- Inspection of all oil drums to verify that they are not damaged/ leaking;
- If oil drums are leaking, drip trays must be used;
- Oil storage area must be properly marked as such (storage for used oil);
- Storage areas must be kept clean and free of oil and oil rags;
- All oil drums in the storage area must be neatly arranged and containers must be kept closed and sealed until collected;
- Empty drums are properly controlled and used oil safely recycled

8.4 Collection and transport of oil drums

During collection and transport of oil drums, the following shall be adhered to:

- No leaking drums shall be transported.
- Drums must be properly sealed.
- They must be correctly packed on appropriate trucks to alleviate oil spillages.
- The truck must not be overloaded by oil drums.
- The oil drums must be safely secured on the truck.

STANDARD FOR OIL SPILLAGE CLEANING AND REHABILITATION

REFERENCE

REV

CP_TSSTAN_153

0

PAGE

7

OF

17

- Should an incident/accident occur during transportation, City Power oil spillage management plan shall be adhere to.

8.5 Oil Drums Management in City Power Depots

On arrival of oil drums in depots, the following shall be adhere to:

- All new oil drums are stored on Reuven capex store.
- New oil drums are stored in depot until utilised.
- Utilised oil shall be stored in oil storage cabinets/proper storage yard and not any other area.
- Depots without oil storage cabinets/proper storage yard shall not keep any oil on site but in Reuven depot.

9. TRANSFORMER AND OIL CONTAINING SWITCHGEAR MANAGEMENT PROCESS

9.1 Storage of new transformer/s

- All new transformers are stored in Reuven transformer storage yard.
- No depots shall store new transformer.

9.2 Storage and Handling of Rotable Transformers

9.2.1 Process for handling dismantled transformers.

- After a transformer has been dismantled, it must be brought to transformer bay yard for inspection.
- Proper storage area for the rotable transformer will be provided.
- Transformer bay will test the transformer to verify if it is rotable scrap or rotable refurbished.
- If it is rotable, it is refurbished by transformer bay and used again.
- If it is rotable scrap, it is deposited to salvage yard for storage until sold to contractors.
- Proper storage yard in Salvage Yard will be provided.

9.2.2 Storage of transformers

- All old/ damage/leaking transformer shall be stored in Reuven transformer storage yard or Reuven salvage yard.
- No depot shall store old/leaking transformer on site.
- Should ground pollution occur because of non-compliance reasons, the depot will incur the cleanup/ rehabilitation cost.

10. SPECIFICATION OF PROPER STORAGE YARD

10.1 Transformer storage yard should consist of the following:

- The oil storage facility shall be sealed to avoid seepage (concrete floor)
- Bund walls around the storage facility to contain oil spillage.
- Drip trays to contain oil.
- Sump/catchment area to separate oil and water

**STANDARD FOR OIL SPILLAGE CLEANING
AND REHABILITATION**

REFERENCE

REV

CP_TSSTAN_153

0

PAGE

8

OF

17

-
- Speed hump as per National Roads Department specification.
 - Rope skimmer to remove oil
 - Rope should feed to containment bin to ensure proper disposal of the oil (no oil should enter drainage systems).

10.2 Oil drums storage yard

- The oil storage facility shall be sealed to avoid seepage (concrete floor)
- Bund walls around the storage facility to contain oil spillage.
- Drip trays to contain oil
- Sump/catchment area to separate oil and water
- Speed hump as per National Roads Department specification

10.3 Oil drums storage cabinets

- Forklifts are required to elevate oil drums into the cabinet.

11. RULES TO ABIDE BY AT ALL TIMES:

- Oil drums shall be packed, stored, handle and transported in such a way as to minimize/prevent oil spillage.
- No oil drums shall kept in depots, if otherwise; a proper facility must be present on site.
- No old/leaking transformers shall be deposited in depots but Reuven depots ONLY.
- Leaking transformers and switchgear shall be decanted into undamaged oil drum onsite before transportation.
- All transformers and switchgear transported to Reuven complex shall be checked for any oil leakage at the main gate by security before entry (oil leaking equipment shall not be allowed).
- Oil leaking drums shall be decanted to undamaged oil drum.
- Training and awareness on oil management shall be attended by all oil handlers
- Training and awareness on oil management shall be include plans adhere to on emergency situation/oil spillage.
- All oil drum shall be stored in areas designated for them.
- A contractor to drain oil must be called to site to drain oil from oil drums storage cabinets whenever they are about to fill up.
- CP employees shall report all non-conformances to relevant personnel (Team leader, area managers, SHERQ rep).
- Should any spillage occur the polluter shall pay (polluter's depot's cost Centre).

12. RESPONSIBILITIES

General/Area Managers/Team Leaders responsibilities. Ensure through inspection that:

- No transformers (especially leaking) are stored on site.
- Leaking transformers are replaced/ properly monitored to avoid oil pollution on site.
- Proper spill kits (absorbent material, drip trays) is used when a transformer is leaking and cannot be immediately change.
- Absorbent material is changed as soon as it totally saturated with oil.
- Oil in drip trays is emptied in an undamaged container/oil drum before it is full
- No spillages are experienced during decanting from drip tray to oil drums.
- The container/oil drum used to decant oil from drip tray is properly closed and stored in oil storage area for collection by Castrol.
- Ensure clean up payments are processed without delays whenever there is a spillage occur.
- SHERQ Representations.
- Use non-conformance report to indicate non-conformances.
- Report deviation to Team Leaders.
- Report deviation to SHERQ committee.

13. OIL SPILLAGE RESPONSE PROCESS

The following procedure shall be adhered to should oil spillages occur.

- **Assess the risk**
 - Determine risks that may affect human health, the environment and property and create unsafe conditions.
 - ALWAYS put SAFETY first.
 - Service Provider/ Contractor shall respond on an emergency call and must come on site prepared in response to address or to intervene and contain oil spillage.
 - Service Provider shall be expected to comply with all legislation, regulations and bylaws in terms of handling and transportation of hazardous waste.
 - Appointed service provider shall be equipped with all tools, vehicles and apparatus to ensure that they comply with safe handling of hazardous waste.
- **Confine the spill**
 - Limit the area by blocking, diverting or confining the spill.
 - Use absorbents such as socks and booms as found in spill kits.
 - SPEED COUNTS, stop the flow of the oil before it enters storm water drains and contaminate water resources.
 - Oil major spillages shall be measured and quantified to ensure that we can manage costing related to the cleanup and rehabilitation of site.
- **Stop the source**
 - After the spill is confined, stop the source of the spill e.g. Turn a container upright, plug a leak, transfer oil from damaged container to a new one or place the leaking equipment in a drip tray.
 - Prevent unauthorised access to the spill site.
- **Oil Spill Kit**
 - Absorbent materials shall be used where there is a spillage for containment of pollution and contamination.
 - Drip tray shall be used where there is a continuous spillage.

SOCK, AND PADS MUST BE AVAILABLE AT ALL CITY POWER DEPOTS/SITES AND USED TO CONTAIN OIL SPILLAGES.

- **Assessment of the Spillage**
 - Assess the spill using the Model Oil Spill Assessment.
 - Reports must be submitted and discussed with City Power
- **Evaluate the incident and implement clean up**
 - Reassess the incident and develop a plan of action e.g. place pillows and mat pads (found in spill kits) throughout the spill area to absorb the spill.
- **Report the spill incident immediately**
 - To the Depot /Area Manager/ Team Leader immediately after a spill occur.
 - The SHERQ Department/Environmental officer/Coordinator/Manager.

**STANDARD FOR OIL SPILLAGE CLEANING
AND REHABILITATION**

REFERENCE

REV

CP_TSSTAN_153

0

PAGE

11

OF

17

Oil clean up contractors: shall be contacted to respond to the emergency or as per planned response (where applicable for historic spillage clean up).

Toll free: 086 1000 366 (Spill Tech)

Toll Free: 800 424 8802 (HAZMAT)

Tell: (011) 375 5911 (CoJ EMS)

NOTE: Oil spill kits and oil absorbent materials shall be obtained from City Power Warehouse and the appointed Contractor or Service Provider/s.

- Pollution clean up
- The appointed oil clean up contractor/service provider shall clean the spillage to acceptable levels:

Dispersant Bio-degradable chemical must be available at the City Power Warehouse to ensure the management of minor spillages and the same acceptable bio-degradable chemical shall be used by Service Provider / appointed contractor/s.

Minor spillage/s shall be cleaned by City Power employee/s using issued tools i.e. spill kit/s, industrial broom and bio-degradable chemical/s as per the prescriptive training for the containment of minor spillages.

The bio-degradable chemicals used MSDS shall be submitted to City Power to validate the safe use and compliancy of the chemical/s used meets the legal and regulatory requirements.

Samples of contaminated soil shall be sent to the lab for analysis to determine the hydrocarbon content. Results must be discussed with City Power

- Disposal of material
 - All material accumulated during the spill shall be treated as hazardous and must be disposed properly in permitted waste disposal sites by the appointed oil clean up contractor.
 - The disposal of all hazardous waste or oil-contaminated waste shall be compliant with Environmental Management Act and shall meet all the Legislative and regulatory requirements including the ISO 14001: 2015 Standards.
- Complete required documents
 - Complete oil spill Register and send to Environmental Coordinator.
 - Reports must be submitted and discussed with City Power
 - Samples of contaminated soil shall be sent to the lab for analysis to determine the hydrocarbon content. Results shall be discussed with City Power

14. ENVIRONMENTAL REQUIREMENTS

- Every site shall have an oil spill kit to contain oil.
- Areas where there are oil leakages, drip trays and oil absorbent material shall be used to prevent the spreading of possible oil pollution.

15. REQUIREMENTS

15.1 OIL SPILLAGE KIT AND CERTIFICATION

15.1.1 The Anti-static spill kits is to be used

15.1.2 The absorbent socks shall be made from polypropylene material

15.1.3 The absorbent cushions shall be made from hydrocarbon material

15.1.4 The absorbent pads shall be made from polypropylene material

15.1.5 Portable Disposable bags shall be made from melt blown polypropylene material and shall have heavy duty knitted outer sheath

15.1.6 Ties shall be used to seal the bags during transportation and storage after the cleanup made

15.1.7 The oil spill kit required are for the following approximate liters of oil for different equipment.

15.1.7.1 Mini Substation:

- 315KVA - 450 liters
- 500KVA - 550 liters
- 630KVA - 600 liters
- 1MVA - 700 liters

15.1.7.2 Pole mounted transformers:

- 100KVA - 200 liters
- 200KVA - 300 liters
- 315KVA - 400 liters
- 500KVA - 500 liters

15.1.7.3 Generators:

- 1000 KVA - 95 liters
- 630 KVA - 85 liters
- 500 KVA - 55 liters
- 35 KVA - 18 liters

STANDARD FOR OIL SPILLAGE CLEANING AND REHABILITATION

REFERENCE

REV

CP_TSSTAN_153

0

PAGE

13

OF

17

15.1.7.4 Transformers :

- 10MVA - liters to 70000 liters
- 20MVA - 40000 liters to 50000 liters
- 40/45MVA - 60000 liters to 70000 liters
- 250MVA - liters to 70000 liters
- 315MVA - liters to 70000 liters

15.1.7.5 Ring main unit (RMU):

- 11 KV – liters to 140 liters

15.2 SITE REHABILITATION

It is the responsibility of the contractor to ensure that disposal of oil affected waste is done at the approved sites and any fines that the contractor or City Power incurs due to the contractors negligence and failure to comply will be paid by the contractor.

15.3 SAFETY

15.3.1 Safe working practices shall be followed at all times ensuring personal safety and safety to fellow workers and members of the public. City Power networks and only trained people shall perform the oil spillage.

15.3.2 Full PPE shall be worn whenever the oil spillage cleaning is in progress and limited to the following, is recommended:

15.3.2.1 Safety boots

15.3.2.2 Overalls

15.3.2.3 Protective gloves

15.3.2.4 Eye protection (safety glasses)

15.3.2.5 Respiratory protection

15.3.3 A certificate shall be issued for every site after the completion of the oil spillage cleanup and the workmanship shall be guaranteed for a period of 12

15.3.4 Soil disposing shall be done where necessary at approved sites and any illegal dumping penalties the contractor will be liable for the penalties.

**STANDARD FOR OIL SPILLAGE CLEANING
AND REHABILITATION**REFERENCE
CP_TSSTAN_153REV
0PAGE **14** OF **17****16. PRICING SCHEDULE**

Site Description	Kit pricing	Labour/ liter or per m³	Transport Price per km
Minisub 315KVA - 450 liters			
Minisub 500KVA - 550 liters			
Minisub 630KVA - 600 liters			
Minisub 1MVA - 700 liters			
Pole mounted transformers 100KVA - 200 liter			
Pole mounted transformers 200KVA - 300 liters			
Pole mounted transformers 315KVA - 400 liters			
Pole mounted transformers 500KVA - 500 liters			
Generators 1000 KVA - 95 liters			
Generators 630 KVA - 85 liters			
Generators 500 KVA - 55 liters			
Generators 35 KVA - 18 liters			
TRFR 20MVA - 40000 liters			
TRFR 40/45MVA - 60000 liters			
TRFR 250MVA - 80000 liters			
TRFR 315MVA - 1000000 liters			
Surfaces areas (Depots and head office)			
Ring main unit 100 -140 liters			
Disposal	N/A	N/A	

**STANDARD FOR OIL SPILLAGE CLEANING
AND REHABILITATION**

REFERENCE

REV

CP_TSSTAN_153

0

PAGE

15

OF

17

17. QUALITY MANAGEMENT

A quality management system shall be set up in order to assure the quality during manufacture, installation, removal, transportation and disposal of Oil Spillage Cleaning and Rehabilitation. Guidance on the requirements for a quality management system may be found in the following standards: ISO 9001:2015. The details shall be subject to agreement between the purchaser and supplier.

18. HEALTH AND SAFETY MANAGEMENT

A health and safety plan shall be set up in order to ensure proper management and compliance during manufacture, installation, removal, transportation and disposal of Oil Spillage Cleaning and Rehabilitation. Guidance on the requirements of a health and safety plan shall be found in ISO 45001:2018 standards. The details shall be subject to agreement between City Power and the Supplier.

19. QUALITY MANAGEMENT

An environmental management plan shall be set up in order to ensure the proper environmental management and compliance is adhered to during manufacture, installation, removal, transportation and disposal of Oil Spillage Cleaning and Rehabilitation. Guidance on the requirements for an environmental management system shall be found in ISO 14001:2015 standards. The details shall be subject to agreement between City Power and the Supplier. This is to ensure that the asset created conforms to environmental standards and City Power SHERQ Policy.

ANNEXURE A - BIBLIOGRAPHY

None

**STANDARD FOR OIL SPILLAGE CLEANING
AND REHABILITATION**

REFERENCE

REV

CP_TSSTAN_153

0

PAGE

17

OF

17

ANNEXURE B - REVISION INFORMATION

DATE

REV. NO.

NOTES

August 2022

0

First issue