OIL SPILL MANAGEMENT AND CONTINGENCY PLAN

### Redclyffe Substation

# TRANSPOWER CONTRACTOR MANAGED DOCUMENT

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## PURPOSE OF THE OIL SPILL MANAGEMENT AND CONTINGENCY PLAN

##  To provide particular information to assist Transpower contractors, subcontractors and other Transpower approved employees in the operation of oil spill equipment and the management of oil spill emergency responses at this site.

1. **DOCUMENT STATUS**

 The Oil Spill Management and Contingency Plan complements but does not take precedence over any Transpower standards, manufacturer's information or similar documents or any specific instruction from Transpower. The manual also complements contractor's work procedures and training information.

As a Transpower Contractor managed Document, the Oil Spill Management and Contingency Plan has to meet contract requirements for its preparation and management which include quality, content, current applicability and suitability to be passed on to a succeeding contractor.

 A copy of the Oil Spill Management and Contingency Plan must be retained and readily available on site to assist in meeting Transpower's and the contractors’ statutory obligations and to protect Transpower's assets.

1. **REFERENCES**

**TP.GS 54.01** Oil spill management

**TP.SS 05.10** Environmental management of existing assets

OIL SPILL EMERGENCY NOTICE

Ensure all Personnel are safe

MAJOR SPILL

If insufficient resources on site contact others who could assist. CONTACT LIST IN OIL SPILL MANAGEMENT AND CONTINGENCY PLAN

Use Contractor Oil Spill Kits. If insufficient use Transpower Oil Spill Kits.

Stop or limit the oil flow from source

Stop or limit the flow into any storm water drain or waterway

Contact: NGOC

Ph: (04) 563 8161

or 5555 (via TPSN)

Mop up and spread absorbent material over affected area to absorb oil

WASTE DISPOSAL PROCEDURE.

Please refer to Oil Spill Management & Contingency Plan

Oil Spill Accident report in the Oil Spill Management & Contingency Plan MUST be filled out.

If contractor Oil Spill Kits are insufficient two Transpower Oil Spill Kits are located in a yellow “wheelie bin” beside Transformers T1-T2 & T3-T4. Access to this kit can be obtained by acquiring an entry approval to the substation.

The Oil Spill Management and Contingency Plan (OSMCP) for TRANSPOWER equipment at this site is located at the Control Room desk.

Please remember that Oil spill Accident Reports must be filled out and sent to the Transpower Service Delivery Manager

OIL FIRE EMERGENCY

**SCHEDULE OF HIGH RISK OIL AREAS**

**OIL FIRE**

Ensure all Personnel are safe

Call Emergency Services

( 111 )

Call National Grid Operating Centre

Ph: 04 563 5087

Is the fire on in service or isolated equipment?

In Service

**If it is safe to do so**:

Isolate the equipment from the network

Are skills & resources available to contain & fight the fire?

Out of Service

No

Wait for Fire Service & direct them to the fire

Yes

Stop oil flow at the source

Limit oil flow to storm water &/or waterways & contact Regional Council

Ph: 0800 108 838

Use NON-WATER extinguishers

Clean up oil and all affected areas

Oil Spill Accident Report

Dispose of oil & any waste

Areas of High Risk are identified in ‘TP.SS 05.10 Environmental management of existing assets’ under ‘Appendix B - Site Oil Management Requirements’ as:

1. Underground aquifers
2. Stormwater drains
3. Neighbours properties
4. Waterways

**Type of High Risk:** Stormwater drain discharge into open drain.

**Location:** The discharge point of the Sepa units is via the drainage system to a manhole at the south western corner of the 220kV Switchyard, then to an open drain to the south west, leading to the Tutaekuri river.

**Procedure:** Check to ensure that oil is not being discharged from the Sepa unit discharge point. If so, use ‘Matasorb’ absorbent pads and pillows to stop or limit the flow of oil from the discharge point. Contact the approved waste disposal agency as soon as possible to pump out the full containment tanks.

**Type of High Risk:** Seepage into the aquifer

**Location:** Full 220kV and 110kV Switchyards.

**Procedure:** At first sign of oil leakage outside of the bunded areas, investigate immediate steps to minimize the leak and to soak up the spilled oil using materials from the onsite oil spill kit located near T1, T2, T3 & T4. Amount of oil is likely to be 400 litres or less so onsite kits should manage containment.

**Type of High Risk:** Neighbouring Land

**Location:** Adjacent to Switchyard on 3 sides

**Procedure:** Check to ensure that oil is not leaking into adjacent farmland. If so use onsite oil spill kits to stop or limit the flow

**Type of High Risk:** Major spill in bunded area

**Location:** Bund surrounding T1, T2, T3 and T4 Transformer Banks

**Procedure:** Arrest the flow of oil into the containment tanks by placing rubber mats (Located in Transpower onsite oil spill kits) over the drain holes, or closing the bund shut-off valves. Check that drain holes are covered. After oil leak is stemmed arrange to pump out oil into containment tanks and wash bunded area. Arrange for containment to be pumped out and cleared of all contaminants.

Please Remember: Oil Spill Risk Typically Increases When People Are

 Working on Equipment at the Site.

**PROTECTION AGAINST OIL DISCHARGE**

The greatest risk of contamination of the watercourses surrounding Redclyffe Substation comes from the many items of equipment in service at the substation which contain oil for electrical insulating purposes, detailed below in the ‘Inventory of Equipment Containing Oil’.

As all stormwater collected in the switchyard passes through oil interception facilities, any spilt oil should be either removed in the oil plate separator unit or contained in oil containment tanks, thereby preventing the risk of contamination of the local stream and local environment.

**1.0 PRIMARY SPILL CONTAINMENT**

In the event of a major oil spill the following basic steps are advised, although the location and nature of the spill may require a different sequence to that detailed:

1. Attempt to halt or reduce the leakage at the source if possible. The Transpower Oil Spill Kit contains ‘Plug N Dike’ compound which can be used as a temporary means of plugging leaking tanks or containers.
2. Prevent the spilt oil from entering the station stormwater system, by closing off the isolation valves within the bunded area if applicable (see Subsection 2.0 below), or by blocking the entrance to nearby drains.
3. If the oil spill occurs outside a bunded area, attempt to contain the spill by using the ‘Matasorb’ sock from the Transpower Oil Spill Kit or similar means to enclose the oil and prevent it escaping.
4. Once the spilt oil has been contained it can be soaked up using ‘Matasorb’ absorbent material and Castrol ‘Mop’ oil absorbent granules. If a large volume of oil has been spilt contact the local waste oil disposal company detailed in the Contact List (Waste Disposal agency) to arrange for the oil to be pumped directly into a road tanker for approved disposal.
5. When all the oil has been soaked up, the materials used to achieve this should be placed in plastic bags for safe disposal. If a large amount of oil has contaminated the soil, the effected material may need to be removed for disposal at an approved landfill.

2.0 major items of plant

The items of plant which contain the largest volumes of oil at Redclyffe are power transformers. All power transformers and local service transformers are surrounded by bund walls, which in the event of a major spillage will contain the spilt oil and feed it directly into the station’s oil containment system for ultimate collection in the appropriate downstream oil containment tanks and the oil plate separators.

The bunded areas surrounding the power transformers have oil shut-off valves which shall be immediately closed in the event of a major oil spillage, to isolate the area from the stormwater drainage system. This allows the leaked oil to be more easily pumped out into suitable vessels.

The shut-off valves shall be closed when maintenance is carried out on the power transformers, thereby reducing the risk of any spilt oil entering the stormwater system.

In addition to bunding, all of the power transformers have low oil level alarms which are initiated if the oil level in any of the units drops below a pre-determined point.

If a low level alarm is detected in the NGOC, maintenance staff shall be notified and sent to investigate the cause.

3.0 minor items of plant

The minor items of plant (instrument transformers) located in the switchyards at Redclyffe Substation contain electrical insulating oil, are detailed below in the ‘Inventory of Equipment Containing Oil’, along with the major plant items.

Because of the relatively small volumes of oil contained in these items, they are not surrounded by bund walls or provided with dedicated connections to the station’s stormwater system.

If oil spillage from any minor item of plant should occur every attempt shall be made to collect and mop up the spilt oil following the procedures detailed above in Section 1.

The coarse rock ground cover found in the switchyards should assist in containing the oil in the immediate area of any spill, and if any oil does run away, it may find its way to one of the general drainage sumps on site and into the station’s stormwater system.

4.0 DESCRIPTION OF oil CONTAINMENT system

Redclyffe has two oil containment systems, referred to as the west area and the east area. The oil containment systems at Redclyffe work by allowing any oil spill from the equipment to drain to the Discharge Containment Tanks (pumping well) beside the Sepa Plate Separators. The Sepa units operate when the oil level is above the second float switch. This pumps the liquid from the tank through the plate separator and any oil is contained in the waste oil tank and the water is discharged.

The oil containment tanks at Redclyffe is routinely inspected on a 12 monthly basis by maintenance staff, for oil build up and general operational condition.

The location and catchment areas of the oil containment tanks is as follows:

West area (220kV)

1. Oil Containment Tanks – (2 x 22,700 litre and 1 x 6,200 litre pumping well) is located to the west of T4 in the 220kV switchyard.

East area (110kV)

1. Oil Containment Tanks – (3 x 22,700 litre and 1 x 4,100 litre pumping well) is located between the emergency accommodation and the Service Providers office.

If oil is detected in the tank, arrangements should be made for the contents to be pumped out into a road tanker and transported away for recycling or approved disposal. See details of the approved Waste Disposal agency below in ‘Contact List - When an Oil Spill Has Occurred’.

Drawings of Sepa unit and oil containment tank located at Redclyffe Substation are contained in Transpower Drawing Management System (RedEye) sections RDF/1F2 & RDF/1F3.

Drawings of stormwater drainage located at Redclyffe Substation are contained in Transpower Drawing Management System (RedEye) section RDF/IB5.

INVENTORY OF EQUIPMENT CONTAINING OIL

Station: Redclyffe Last Updated: 2021-01-27

| Device Position/ Location | Number of units and Description | Volume of Oil¹ | Bunded Area | Comments |
| --- | --- | --- | --- | --- |
| T1 | Pauwels 110/33kV 120MVA | 44,166 | Yes | 39,750 kg |
| T2 | ABB 110/33kV 120MVA | 50,400 | Yes |  |
| T3 | Hawker Siddeley 220/110kV | 40,279 | Yes | 100MVA |
| T4 | Hawker Siddeley 220/110kV | 40,279 | Yes | 100MVA |
| CT132 | ABB IMB 125 A5 | 216 |  | 3 x 65 kg |
| CT112 | ABB IMB 125 A5 | 216 |  | 3 x 65 kg |
| CT642 | ABB IMB 245 | 432 |  | 3 x 130 kg |
| CT662 | ABB IMB 245 | 300 |  | 3 x 90 kg |
| CT682 | Arteche CA-245 | 468 |  | 3 x 140 kg |
| CVT682 | ABB CPB 245 | 384 |  | 3 x 115 kg |
| CT702 | ABB IMBE 245 A5 | 999 |  | 3 x 300 kg |
| CVT702 | ABB CPB 245 | 384 |  | 3 x 115 kg |
| CT628 | ABB IMB 245 | 432 |  | 3 x 130 kg |
| CT652 | ABB IMB 245 | 432 |  | 3 x 130 kg |
| CVT652 | Koncar VCU-245 | 219 |  | 3 x 66 kg |
| CT672 | ABB IMB 245 | 432 |  | 3 x 130 kg |
| CVT672 | Koncar VCU-245 | 219 |  | 3 x 66 kg |
|  |  |  |  |  |
| CB62 | Mitsubishi 100-GTR-25 | 6,200 |  |  |
| VT47 | Arteche UTD-123 | 207 |  | 3 x 62 kg |
| CB42 | Mitsubishi 100-GTR-25 | 6,200 |  |  |
| CB52 | Mitsubishi 100-GTR-25 | 6,200 |  |  |
| VT97 | Arteche UTD-123 | 207 |  | 3 x 62 kg |
| CB92 | Mitsubishi 100-GTR-25 | 6,200 |  |  |
| LS1/ET1 | ABB 33kV/400V 200kVA | 1542 |  | 1341 kg |
| LS2/ET2 | ABB 33kV/400V 200kVA | 1542 |  | 1341 kg |
|  |  |  |  |  |

¹Note: Quantities shown are totals (litres). Specific Gravity of 0.9 assumed for calculations from weights

CONTACT LIST – WHEN AN OIL SPILL HAS OCCURRED

|  |  |  |
| --- | --- | --- |
| EMERGENCY SERVICES | Ambulance, Fire, Police | Dial: Prefix for outside line then 111  |
| CONTRACTORS PERSONNEL | Name: Hendrik SmitMaintenance SupervisorName: Hagan BurgessDelivery Manager  | Mobile: (027) 439 0313Mobile: (027) 4262 572 |
| TRANSPOWER PERSONNEL | NGOC Name: Darryn WelhamService Delivery Manager | Phone: (04) 563 5087TPSN: 5555Phone: (06) 590 7691Mobile: (021) 243 0014 |
| OTHER (e.g. another Contractor or Generator in the vicinity that could be called in to help) | Name: Lignesh ArunasalumVentia OperationsManager Central | Teams: (06) 3584965Mobile: (027) 278 4135 |
| WASTE DISPOSAL AGENCY | Beard’s Environmental Ltd | Phone: (06) 879 5800Fax: (06) 879 5811 |

If you are unable to contact the NGOC or Transpower Service Delivery Manager and the oil spill has entered waterways contact the Regional Council immediately.

|  |  |  |
| --- | --- | --- |
| REGIONAL COUNCILHawke's Bay Regional Council | Pollution Hotline 24hrs0800 108 838 | Phone: (06) 835 9200 |

Any contact with the Media will be made by Transpower.

WASTE DISPOSAL PROCEDURE

Pack all contaminated material into bags/drums.

**To dispose of contaminated oil.**

## Contact: Beard’s Environmental Limited

**Ph: 06 879 5800**

## Fax: 06 879 5811

To dispose of oil contaminated waste.

## Contact: Beard’s Environmental Limited

**Ph: 06 879 5800**

## Fax: 06 879 5811

Check kit and replace any material required.

NZ Safety Blackwoods

Ph: 0800 660 660

Record Number …………

OIL SPILL ACCIDENT REPORT

(for spills greater than 5 litres)

Contractor:……………………………….. Site:…………………………………………………..

Date of Spill:……………………………… Time of Spill:………………………………………..

Persons on Site at Time of Spill:……………………………………………………………………….

……………………………………………………………………………………………………………

Describe the Incident – include reason WHY there was an oil spill:

Was there a fire? Yes/No

Did Oil escape into waterways? Yes/No

If yes, what was the name of the waterway? ………………………………………………………….

If Oil escaped into waterways, what were the waterway levels? Low/Typical of that waterway/High

What were the weather conditions? ………………………………………………………………….

…………………………………………………………………………………………………………..

Estimated Amount of Oil Spilled: …………... Estimated Amount of Oil Recovered: ……………

Describe Clean Up and Corrective Action:

Notification Schedule:

|  |  |  |
| --- | --- | --- |
| Organisation | Name of Person Notified | Time Notified |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Completed By:

Print Name: Position:

Signed: Date:

Please forward this form to the Transpower Service Delivery Manager.