

Network Rail Briefing Note on the Compliance of Transformers with Oil Storage Regulations

References:

Control of Pollution (Oil Storage) (England) Regulations 2001

Control of Pollution (Oil Storage) (Wales) Regulations 2016

Water Environment (Controlled Activities) (Scotland) Regulations 2011

NR/L1/ELP/27000

Standard Requirement for Transformers

NR/L1/ELP/27000 is the Network Rail Policy requirement for Electrical Power Assets. This standard requires a risk assessment (appendix O) to be conducted to determine whether to install a transformer with secondary containment¹. Based on the outcome of the risk assessment, some environments (low to medium) do not require transformers to have secondary containment. This technical briefing note explains how this approach maintains compliance with the Oil Storage Regulations (OSR) (see References) and what other factors should be considered when planning to install transformers.

Interpretation of OSR

Network Rail complies with OSR through NR/L1/ELP/27000 in that transformer oil² is deemed to be in use, rather than stored. The terminology of OSR only applies to oil that is in storage. Transformers with an expansion tank such as a conservator vessel are connected via a two way feed pipe and are an essential part of the 'in use' operation of a transformer. Because of this, these expansion tanks are not bound by the requirements of OSR. Network Rail transformers with conservator vessels are of this design, and do not include a one way feed pipe.

Exclusions

This definition of 'in use' excludes the use of transformers connected to oil storage tanks if they are greater than 200 litres and connected directly to the transformer by a 'one-way feed pipe.' In this case the secondary containment requirements of OSR would apply despite the outcome of the risk assessment required in NR/L1/ELP/27000.

Further Advice and Recommendations

In complying with NR/L1/ELP/27000 and this briefing note it should be considered what other control measures are required to mitigate the risk of transformers that are on unbunded surfaces especially considering storage of oil in significant quantities. Although the risk assessment dictates, designers should consider the installation of bunds where significant quantities of oil are in use.

¹ Secondary containment or a bund is an outer impermeable layer or skin capable of holding back 110% of the volume of the primary container or 25% of the total aggregate in cases where this volume may be higher.

² Under OSR, oil is defined as petrol, diesel, biofuels, kerosene, vegetable oils, synthetic oils, lubricating oils, oils used as solvents, biodegradable oils, liquid bitumen-based oils, cutting fluids and insulating oils.

Consideration should be made to ensure emergency planning measures are tailored to include the risk, training and competence of personnel are assessed and elevated where required and spillage material is provided of a sufficient type and quantity.

For any further advice on this or similar issues, please contact the Environment and Sustainable Development team. Queries should be directed to sustainabledevelopment@networkrail.co.uk. Alternatively the following links may provide further direction and support.

Further Links

[Safety Central](#)

[Network Rail Environmental and Sustainable Development Guidance Notes](#)

[Pollution Prevention \(land and water\) Guidance Note](#)

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