WORKSAFE NEW ZEALAND | MAHI HAUMARU AOTEAROA

HEALTH & SAFETY AT WORK ACT · HSWA ·

REFURBISHMENT AND RELOCATION OF HAZARDOUS LIQUID ABOVE GROUND TANKS WITH HAZARDOUS LIQUIDS OF HAZARD CLASSES 3.1A, 3.1B, 3.1C AND 3.1D

This scope covers stationary tanks:

i. which store hazardous liquids[1] of hazard classes 3.1A, 3.1B, 3.1C and 3.1D, and

ii. which are above ground tanks.

It is limited to:

i. workshop fabricated tanks where the original design and fabrication is identified, and

ii. workshop fabricated tanks which are certified in accordance with the provisions of *HSNOCOP 13 Management of Existing Stationary Container Systems up to 60,000 litres Capacity*.

This scope does not include:

i. tripod tanks (ie tanks supported by a three legged structure), or

ii. tanks which require other than minor repairs or alteration.[2]

BACKGROUND

Stationary tanks which contain hazardous liquids are subject to the requirements of the Hazardous Substances (Stationary Container and Scheduled Toxic Substances) Transfer Notice 2004. Tanks which exceed the threshold[3] require stationary container test certificates.

A test certificate issued for a stationary container system (including the stationary tank) becomes invalid if:[4]

i. repairs or alterations (other than minor repairs or alterations) are carried out on the tank below the maximum liquid fill level of the tank

[1] That is, stationary tanks which Schedule 8 of the Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice is applicable to and which store flammable liquids.

[2] For example, tanks which require weld repairs, which are deformed, which have rust pitting, which require alterations to cradles or support structures are excluded. Tanks which require preparation and cleaning, repainting and valve replacement are included. The extent of refurbishment must not invalidate the original design/fabrication test certificate (ie it must be limited to normal routine maintenance).

[3] Threshold capacities are:
2500 L for tanks containing 3.1A or 3.1B substances
5000 L for tanks containing hazardous liquids which are not 3.1A or 3.1B
60 L for a tank containing a 3.1 substance supplying a burner
50 L for a tank containing class 3.1A, 3.1B or 3.1C substances supplying an internal combustion engine
500 L for a tank containing a 3.1D substance supplying an internal combustion engine.

[4] Clause 84 of Schedule 8 of the Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice 2004.

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ii. the tank is altered so that the shell height or length is changed

iii. the tank is reconstructed

iv. other than in the case of a tank that is constructed to be movable and has an integral support structure that rests on the ground, the tank is relocated, or

v. there is a change in service in respect of the tank.

For stationary tanks that are workshop fabricated, the certification of the design and fabrication of the tank is generally undertaken in accordance clause 94 of the Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice 2004. This can be confirmed by ensuring the tank is recorded on the Stationary Container Tank Design and Fabricators Register held by WorkSafe New Zealand. It will be recognised by a register number such as a TNK number (or for earlier tanks a LAB number or OSH number). This register is on the WorkSafe New Zealand website at: worksafe.govt.nz

Circumstances (i), (ii), (iii) and (v) above are changes to the design and fabrication of the tank. Hence, irrespective of how the design or fabrication is certified, the design and fabrication test certificates are invalidated for these situations. These circumstances are not included in this guideline.

There is a separate test certificate issued under clause 92 of the Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice which certifies the stationary container system as installed. This certificate is invalidated for all five of the situations above. For tanks which are above the threshold capacity (note 3), the tanks must have new stationary container certificates if it is intended to place the tanks back into service.

Parties undertaking the refurbishment should be approved tank fabricators, that is, they have been certified by a test certifier who is approved to issue test certificates for the fabrication of tanks.

When tanks are relocated and possibly refurbished the following actions must be undertaken:

1. **Refurbishment and relocation (change of location and possibly minor repairs) – original design and fabrication certificate identified.**

In this circumstance the tanks could be removed from site, refurbished and placed back into service at the same or different sites. When put back into service, tanks above the threshold must have a new stationary container system test certificate issued for their installation. The refurbishment must be in accordance with the original designs and design standards. The details of the original markings must be retained. The refurbishment must be limited to normal maintenance.

2. **Refurbishment and relocation (change of location and possibly minor repairs /alterations) – original design and fabrication certificate unknown (ie there is no plate on the tank).**

In this circumstance the tanks could be removed from site, refurbished and placed into service at the same or different sites.

Tanks which do not have markings are able to be verified in accordance with the provisions of *HSNOCOP 13 Management of Existing Stationary Container Systems up to 60,000 litres Capacity*. Hence this option 2 is limited to stationary tanks with a capacity up to 60,000 L. It is expected that all tanks placed into service since April 1 2004 have a plate with comprehensive markings and option 1 above is therefore applicable to them. Hence this option 2 is only intended for stationary tanks placed into service prior to 31 March 2004.

When put back into service, tanks above the threshold (note 3) must have new stationary container system test certificates issued for their installation.

The refurbishment must be in accordance with the original design and design standard.

Clause 3.1 of *HSNOCOP 13 Management of Existing Stationary Container Systems up to 60,000 litres Capacity* specifies the requirements for design and construction. The tank structure must be verified by a person[5] who is skilled and experienced in tank design and fabrication. This verification must include:

a. The design (ie steel thicknesses, weld types and tank dimensions) must be in accordance with the provisions of *AS 1692-2006 Steel tanks for flammable and combustible liquids* or Regulation 60 of the *Dangerous Goods (Class 3 – Flammable Liquids) Regulations 1985*
b. The tank and any supporting structure must be compliant with the seismic and wind loadings specified in Schedule 8 clause 8(4) of Schedule 8 of the Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice 2004
c. The vents, including emergency vents, must be in accordance with the provisions of *AS 1692-2006 Steel Tanks for Flammable and Combustible Liquids*, and
d. The welds should be assessed visually as being suitable. For tanks in excess of 25,000 L capacity, 10% of the welds must be x-rayed.

Hence any refurbishment must be in accordance with the current version of *AS 1692-2006 Steel Tanks for Flammable and Combustible Liquids* or Regulation 60 of the *Dangerous Goods (Class 3 – Flammable Liquids) Regulations 1985*.

As the comprehensive details of the tank are not confirmed, any tank refurbished in accordance with this process must be returned to service for diesel only; that is they should not be used for substances with hazard classes 3.1A, 3.1B or 3.1C.

MARKING

After refurbishment all tanks must have a plate attached in compliance with the requirements of Schedule 8 clause 77 of the Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice 2004.

Clause 2.6 of *HSNOCOP 13 Management of Existing Stationary Container Systems up to 60,000 litres Capacity* specifies the application of this for tanks with incomplete information. The full information which must be permanently and legibly marked on the plate for a tank which is refurbished and relocated under option 2 is thus:

> refurbished to AS 1692-2006 Steel Tanks for Flammable and Combustible Liquids or Regulation 60 of the Dangerous Goods (Class 3 – Flammable Liquids) Regulations
> date of refurbishment
> the materials used in the construction of the tank
> the name of the refurbisher
> the maximum and minimum design pressure of the tank
> the maximum and minimum design temperature of the tank
> the maximum permitted density of any liquid that may be contained in the tank
> the maximum safe fill level of the tank
> an identifier that links the tank to the records that relate to the tank.

[5] A person such as a tradesman or professional engineer who is skilled and competent in this field.