6th November 2013

Goodman
Level 17, 60 Castlereagh St
Sydney NSW 2000

Attention: Will Dwyer

Preliminary Hazard Analysis for Mainfreight, Prestons
Increase in Dangerous Goods Quantity Stored

It is proposed to increase the maximum quantity of dangerous goods from 380,000 kg to 400,000 kg stored in the Mainfreight, Prestons warehouse. For the purposes of establishing any changes to the conclusions from the Preliminary Hazards Analysis (PHA) a worst case scenario has been taken where the extra 20,000 kg are assumed to be flammable liquids/aerosols.

Spill Containment

Using the EPA method for determining minimum spill containment capacity the revised minimum spill containment is;

Dangerous Goods Store	200,648 L
Remainder of Warehouse	126,000 L
Total	326,648 L

For a total warehouse floor area of 13,250 m^2 this would require a uniform bund height of 24.6 mm. This is 0.5 mm increase over the previous minimum bund height and remains well below the proposed bund height of 50 mm.

Fire in Aerosol Storage Area

The heat radiation that could be experienced has been recalculated for the amount of propane propellant combusted. The aggregate quantity of propane combusted in 3.6 seconds was determined to be 40 kg and the calculations gave heat radiation levels as described in Table 1. These distances are approximately a 3.5% increase over those given in the PHA. The distances remain large but will be contained within the walls of the warehouse and are not expected to impact on neighbouring properties in the initial stages of a fire.

Table 1 Distances to Heat Radiation Levels for Aerosol Fireballs from Pallet Storage Area

Heat Radiation Level (kW/m^2)	Distance to Heat Radiation Level (m)
4.7	52.7
12.6	32.2
23	23.8

The time of duration of a fireball is calculated at 3.6 seconds compared with 3.54 seconds from the PHA study. The thermal dose calculated in the PHA is based upon an exposure time of 30 seconds. This is an order of magnitude greater than the time of duration of the fireball and remains a valid, conservative assumption. Consequently there is no change for the thermal dose criteria and there remains less than 1% chance of a lethal thermal dose.

Conclusion

The increase in the maximum quantity of dangerous goods from 380,000 kg to 400,000 kg stored in the Mainfreight, Prestons warehouse has had negligible effect on the spill containment required or on the effects from a fire in the flammable aerosol storage area (worst case scenario). The existing design continues to provide appropriate risk control strategies to accommodate this increase in DG storage quantity. As such, the conclusions from the PHA remain valid and may be used with confidence, in conjunction with this letter, when making determinations against the requirements of SEPP 33.

Yours Faithfully,

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