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HEALTH & SAFETY LABORATORY

RETAINED ESTATE CONDITION SURVEY

Nitrogen Tank Pad Liquid Cascade

Design and Access Statement



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BDP.

NITROGEN TANK PAD LIQUID CASCADE

In 2005 a serious incident at Buncefield Oil Storage Depo in the UK, involving an explosion and subsequent large fire
This incident was unprecedented, causing damage beyond the predictions of any current codes and standards.

Since that event HSL/HSE have been involved in a key programme of work to investigate the issues that led to this incident.

A key feature of this incident is the cascade of certain fuels during spill events from the top of tall storage tanks, which it is now understood can lead to the unexpected formation of a dangerous vapour cloud. HSL have been leading experimental work in this area using the cascade facility at HSL, and this further development of this facility is to look at a further important case of very low boiling point (cryogenic) liquids in such a scenario, and the subsequent formation of a vapour cloud. The installation of a liquid nitrogen is therefore required, to facility the safe investigation of this scenario using a nitrogen as an inert simulant for flammable cryogenic liquids such as liquid hydrogen and Liquified Natural Gas (LNG). This work will then feed into national/international standards to control such a hazard and so almost save lives/damage that may have occurred from such events that are uncontrolled.



23 August 2011



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PRODUCTS