

## **Risk Assessments for Petrol Filling Stations**

### **1 Introduction**

Since the introduction of the Dangerous Substances and Explosive Atmospheres Regulations 2002, the conditions attached to petroleum licences issued under the Petroleum (Consolidation) Act 1928 have been significantly reduced.

The onus is now on the employers/responsible person to identify and assess the risks arising from the delivery, keeping and dispensing of petroleum spirit and other motor fuels (such as liquefied petroleum gas – LPG).

### **2 Related Legislation**

- The Petroleum (Consolidation) Act 1928
- The Health and Safety at Work etc. Act 1974
- The Management of Health and Safety at Work Regulations 1999
- The Dangerous Substances and Explosive Atmospheres Regulations 2002
- The Regulatory Reform (Fire Safety) Order 2005

### **3 What the Legislation Requires**

The employer/responsible person must:

- Find out what dangerous substances are present in their workplace/premises and what the fire and explosion risks are. (Petroleum spirit and LPG are both “dangerous substances” for this purpose, but there may be others at the premises. If so these should be considered as well.).
- Put control measures in place to either remove these risks or, where this is not possible, to control them.
- Put controls in place to reduce the effects of any incidents involving dangerous substances.
- Prepare plans and procedures to deal with accidents, incidents and emergencies involving dangerous substances.

- Make sure that employees are properly informed about and trained to control or deal with the risks from dangerous substances. (This includes providing them with details of the substances and with a copy of the significant findings of the risk assessment).
- Identify and classify areas of the workplace/premises where explosive atmospheres may occur and avoid ignition sources (for example from unprotected equipment) in those areas. Recording these areas is best done by way of a plan – see Appendix 3 for details.
- Carry out a risk assessment and record the significant findings of that assessment, including the measures that have been or will be taken by the employer/responsible person to control the risk.
- Keep a record of the risk assessment and significant findings available for inspection.
- Review the risk assessment periodically and following any significant changes.

The requirement to assess the risks from the dangerous substances should not be considered in isolation. It should be carried out as part of the overall risk assessment required by Regulation 3 of the Management of Health and Safety Regulations 1999 rather than as a separate exercise.

Appendix 1, attached, is a suggested format that you may wish to consider as a method of recording the required information.

Appendix 2 lists some of the control measures that may be necessary for each activity.

Appendix 3 details the hazardous zones associated with a petrol filling station forecourt.

Following this guidance is not necessarily the only way to comply with the legislation, however, the advice represents best practice.

Further advice is available from the Health and Safety Team on 01437 775632.

Petrol Filling Station Risk Assessment for .....

ACTIVITY	RISK/HAZARD ASSOCIATED WITH ACTIVITY	EXISTING CONTROL MEASURES		SIGNIFICANT FINDINGS (i.e. is the risk adequately controlled?)		ANY ACTIONS REQUIRED (BY WHOM) (BY WHEN)
		ENGINEERED	MANAGED	YES	NO	
<b>Tanker unloading</b>	<ul style="list-style-type: none"> <li>• Overfill/crossover</li> <li>• Impact</li> <li>• Actions by unauthorised personnel</li> <li>• Spillage</li> <li>• Uncontrolled vapour release</li> <li>• Fire/explosion caused by ignition of vapour following uncontrolled release of product</li> <li>• Leak</li> <li>• Ignition sources</li> </ul>	3A:	4A:			
<b>Storage of fuel on site</b>	<ul style="list-style-type: none"> <li>• Leak</li> <li>• Uncontrolled vapour release</li> <li>• Fire/explosion caused by ignition of vapour following uncontrolled release of product</li> </ul>	3B:	4B:			
<b>Dispensing of fuel by members of the public</b>	<ul style="list-style-type: none"> <li>• Leak</li> <li>• Spillage</li> <li>• Fire/explosion caused by ignition of vapour following uncontrolled release of product</li> <li>• Vehicular impact</li> <li>• Equipment failure</li> <li>• Ignition sources</li> <li>• Members of the public</li> </ul>	3C:	4C:			

ACTIVITY	RISK/HAZARD ASSOCIATED WITH ACTIVITY	EXISTING CONTROL MEASURES		SIGNIFICANT FINDINGS (i.e. is the risk adequately controlled?)		ANY ACTIONS REQUIRED (BY WHOM) (BY WHEN)
		ENGINEERED	MANAGED	YES	NO	
<b>Carrying out repair, maintenance or modification</b>	<ul style="list-style-type: none"> <li>• Ignition</li> <li>• Leak</li> <li>• Spillage</li> <li>• Unauthorised personnel</li> <li>• Vapour release</li> <li>• Fire/explosion caused by ignition of vapour following uncontrolled release of product</li> <li>• Impacts</li> </ul>	3D:	4D:			
<b>Regulatory Reform (Fire Safety) Order 2005:</b> Consideration of staff and public within associated premises (or may be affected by a fire at the premises)	<ul style="list-style-type: none"> <li>• Fire/explosion caused by ignition of vapour following uncontrolled release of product</li> <li>• Fire caused by ignition of combustible materials</li> </ul>	3E:	4E:			

Carried out by: .....

Date: .....

Due review by: .....

List of Possible Control Measures for Inclusion within Cells on Risk Assessment Form

ENGINEERED	MANAGED
<p><b>Cell 3A</b></p> <ol style="list-style-type: none"> <li>1. Overfill prevention/high level alarm</li> <li>2. Correct labelling of fill points/signage</li> <li>3. Stage 1b vapour recovery</li> <li>4. Vent pipe location</li> <li>5. Location/protection of fill pipes (tanker stand)</li> <li>6. Impervious surface to tanker stand</li> <li>7. Drainage of tanker stand/tank fill point area to a retention system (interceptor)</li> <li>8. Driver controlled delivery equipment</li> <li>9. Adequate lighting</li> <li>10. Hazardous area classification/suitability of equipment</li> <li>11. Provision of fire fighting equipment &amp; absorbent material</li> </ol>	<p><b>Cell 4A</b></p> <ol style="list-style-type: none"> <li>1. Inspection/maintenance regime</li> <li>2. Staff training</li> <li>3. Delivery documentation</li> <li>4. Provision of personal protective equipment (PPE)</li> <li>5. Emergency procedures</li> </ol>
<p><b>Cell 3B</b></p> <ol style="list-style-type: none"> <li>1. Secondary containment</li> <li>2. Leak detection system</li> <li>3. Observation/monitoring well(s)</li> <li>4. Stage 1b vapour recovery</li> <li>5. Gauge systems</li> <li>6. Automated reconciliation system</li> <li>7. Cathodic protection</li> <li>8. Provision of fire fighting equipment &amp; absorbent material</li> </ol>	<p><b>Cell 4B</b></p> <ol style="list-style-type: none"> <li>1. Staff training</li> <li>2. Third party statistical inventory reconciliation</li> <li>3. Wetstock reconciliation</li> <li>4. Inspection/maintenance regime and records</li> <li>5. Provision of personal protective equipment (PPE)</li> </ol>

**Cell 3C**

1. Dispensers/pumps to approved standard
2. Labelling/signage
3. Adequate lighting
4. Position of dispenser(s)/pump(s) (vision/impact)
5. Isolation/emergency switches
6. Impact protection of dispensers/pumps
7. Under pump valves
8. Loud speaker system
9. Impervious forecourt surface
10. Drainage of dispensing area to a retention system
11. Electrical equipment suitable for hazardous zone
12. Provision of fire fighting equipment & absorbent material

**Cell 4C**

1. Staff training
2. Inspection/maintenance regime
3. Provision of personal protective equipment for staff
4. Provision of first aid equipment and first aid training
5. Emergency procedures

**Cell 3D**

1. Correct equipment to be used in hazardous areas
2. Provision of suitable lifting equipment available for access chamber covers
3. Provision of fire fighting equipment & absorbent material
4. Provision of cones and barriers
5. Adequate lighting of working area

**Cell 4D**

1. Competent contractors/safety passport
2. Staff training
3. Provision of personal protective equipment
4. Emergency plan
5. Contractors documentation:
  - clearance certificates
  - method statement
  - risk assessment
6. Visitors book

**Cell 3E (Regulatory Reform (Fire Safety) Order 2005)**

1. Suitable and sufficient means of escape
2. Suitable and sufficient provision of fire fighting equipment
3. Fire alarms and detection
4. Fire resisting separation

**Cell 4E (Regulatory Reform (Fire Safety) Order 2005)**

1. Staff training
2. Maintenance of fire fighting equipment/alarms etc.
3. Emergency plan
4. Risk assessment
5. Competent persons

## Hazardous zones

Hazardous zone definitions:

**Zone 0** – That part of a hazardous area in which a flammable atmosphere is continuously present, or present for long periods.

**Zone 1** – That part of a hazardous area in which a flammable atmosphere is likely to occur in normal operation.

**Zone 2** – That part of a hazardous area in which a flammable atmosphere is not likely to occur in normal operation and, if it occurs, will exist only for a short period.

Nominal areas of hazardous zones to be indicated on the hazardous zone drawing:

**Zone 0:** (Mark red on site plan)

- Within any access chamber or pit in which there are tanker delivery hose connection point(s).
- Within an oil separator (petrol interceptor).

**Zone 1:** (Mark blue on site plan)

- 1m radius around the road tanker delivery and vapour return hose connections extending down to ground level.
- 1m radius along the delivery hose route from tanker connection point(s) to the tank connection point(s).
- 1m radius from tank filling point (above ground).
- 1m radius from edge of the chamber if fill point is below ground.
- Within petrol tank access chambers which do not have tank fill points.
- 2m radius around tank venting point(s) which do not have stage 1b vapour recovery system.
- 1m radius around a venting point of an oil separator (petrol interceptor).
- Within the access chamber of an oil separator (petrol interceptor).
- Within a 4.1 radius of a petrol delivery hose connection on a dispenser (without stage 2 vapour recovery).



**Zone 2:** (Mark yellow on site plan)

- 4m radius of a tank delivery hose connection point(s).
- 4m radius of above ground offset fill connection(s).
- 1m radius around vapour return hose connection point.
- 2m radius around tank venting points where the site has stage 1b vapour recovery installed.
- 2m radius from the edge on an oil separator (petrol interceptor).
- Within a 4.1 radius of a petrol delivery hose connection on a dispenser (with stage 2 vapour recovery in operation).

**LPG (Autogas) above ground**

**Zone 0:**

- Inside the storage tank (if nitrogen purging not used).

**Zone 1:**

- 1.5m radius around tank fill point.
- 1.5m radius around tank ullage level indicator.
- Inside dispenser casing.
- 1.5m radius of a road tanker ullage level indicator.

**Zone 2:**

- 0.5m radius around a soft seat tank relief valve.
- 2.5m radius around any other type of tank relief valve.
- 1.2m radius around dispenser hose.
- 1m radius around dispenser apertures.
- 0.15m surrounding the dispenser.
- 4m radius around the road tanker pump.
- 1.5m radius around a delivery hose connection point.
- 0.5m radius around a road tanker soft seat relief valve.
- 2.5m radius around any other road tanker relief valve.