Loss prevention standards

# Preventing Pollution from Fire Fighting Run-off

The run-off from water used in fire fighting activities **can cause major pollution if it's allowed to reach a river or watercourse. So it's** important to have a plan in place to control any water used in the event of a fire.

AVIVA

# Preventing Pollution from Fire Fighting Run-off

## Introduction

Many industries store and use substances that have the potential to cause severe pollution if allowed to contaminate any nearby watercourses, either through spillage or run-off from the water used to fight fires on-site. Sites which are subject to the Control of Major Accident Hazards Regulations 2015 (COMAH) are required to make arrangements for this water.

## Sources of Pollution

Water is the most commonly used medium for fire fighting. However, several major pollution incidents have occurred when water used for fighting fires has been allowed to reach nearby rivers or watercourses.

Fire fighting run-off may cause pollution due to contamination by materials on site, their combustion products, the use of fire fighting foam, or a combination of these things. It's therefore important to develop an Emergency Plan for your site, detailing any actions to be taken to control fire fighting run-off in the event of a fire.

## Legal Implications

Polluting a watercourse is an offence under the Water Resources Act 1991.

Polluting a sewer by discharging material without the prior consent of the appropriate water undertaker (i.e., the local water services company) is an offence under the Water Industry Act.

Operators of COMAH and certain permitted sites under the Environmental Permitting (England and Wales) Regulations 2016 are required to make plans to prevent such pollution and may find themselves in breach of regulations if these plans aren't adequate.

In addition to prosecution, the Environment Agency can serve a works notice requiring environmental clean-up or repayment of any clean-up costs which the agency incurs. The Environmental Damage (Prevention and Remediation) Regulations 2009 adopt a 'polluter pays' principle and extend this legal duty further, including 'strict' as opposed to 'fault based' liability in certain circumstances.

Under these regulations the financial penalties can extend beyond traditional clean-up (or primary) costs to include complementary and compensatory remediation. The costs of such incidents can run into many millions of pounds and aren't covered under normal insurance policies.

## Mitigating the Effect of Fire Water Run-off

When creating an Emergency Site Plan to address the handling of fire fighting water, the first step is to assess the likely route the water would take following an incident on site. The Environment Agency can advise on any likely routes to surface and groundwaters, while the local water services company will be able to advise on sewerage routes.

It's also important to calculate the possible volumes of water likely to be produced in the event of a fire. The Fire and Rescue Service should be involved in this estimation and will advise on quantities and the volume of containment required, based on fire fighting best practice.

## Containment Systems

There are a number of different systems available for the containment of fire fighting water, which may be required to protect both surface and foul-water drainage systems.

### Containment lagoons and sacrificial areas

Lagoons should be constructed which are large enough to retain the area concerned. Areas such as car parks, ornamental gardens or sports fields may be appropriate, provided they:

- Can be made secure
- Are isolated from the drainage system
- Are designed to avoid groundwater contamination

### Tanks

Permanent or portable tanks are another option for fire water retention. They should be vented and constructed of a material which is resistant to the substances being retained.

### Penstocks and shut-off valves

Shut-off valves or penstocks can be used to isolate parts of the site in an emergency, preventing contaminated water from reaching a drain or surface water.

### Bunds

Materials with the potential to cause environmental damage should always be stored in adequately bunded areas.

Bunds should be large enough to hold the total of the tank volume plus 10% – this being the volume of the initial fire fighting or fire-protection water or foam. However, it's important to note that a far greater volume would be required to fight a fire. As a result of this, bunds can't usually be relied on as fire water protection, but they may be able to provide temporary containment to gain time in the event of an incident.

### Choosing a containment method

Once the containment method has been chosen, the authorities should be informed in case of any fundamental problems arising from the decision. It's important to keep suitable plans of your emergency arrangements and ensure site personnel are aware of them.

## Fire Fighting Strategies and Run-off Management

Your Emergency Plan should consider fire fighting strategies and outline possible ways to reduce the amount of fire water run-off generated from their use.

### Advising the authorities

As in all emergencies, the first step is to carry out appropriate evacuation procedures and contact the Fire and Rescue Service, followed by the Environment Agency. The Environment Agency is committed to the prevention of catastrophic pollution as a result of fire and will usually attend an incident in order to ensure that, as far as is practicable, the aquatic environment is protected from its results. They also keep stocks of appropriate equipment and materials to minimise the effects of an incident.

### Key action steps

- Examine, and where necessary develop, your Emergency Plan to take account of the potential polluting effects of any water used in fighting a fire at your premises
- Involve the Emergency Services and the Environment Agency in the development of your plans
- Complete tests of your Emergency Plans at regular intervals
- Ensure the plans are regularly reviewed, and revised as necessary
- Ensure that the Environment Agency emergency telephone number is readily available and that they're contacted in the event of an incident

## Checklist

A generic Preventing Pollution from Fire Fighting Run-off Checklist is presented in Appendix 1 which can be tailored to your own organisation.

## Specialist Partner Solutions

Aviva Risk Management Solutions can offer access to a wide range of risk management products and services at preferential rates via our network of Specialist Partners.

For more information please visit:

Aviva Risk Management Solutions – Specialist Partners

## Sources and Useful Links

- Guide to the Control of Major Accident Hazards Regulations (COMAH) 2015 – Health and Safety Executive
- Pollution Prevention for Businesses – GOV.UK
- Pollution Prevention and Control – Scottish Environment Protection Agency
- The NIEA and Water Pollution – Department of Agriculture, Environment and Rural Affairs: Northern Ireland
- Preventing Water Pollution – Business Wales

## Additional Information

Relevant Loss Prevention Standards include:

- Assessment of Pollution Risks

To find out more, please visit Aviva Risk Management Solutions or speak to one of our advisors.

Email us at riskadvice@aviva.com or call 0345 366 6666.*

*Calls may be recorded and/or monitored for our joint protection.

# Appendix 1 – Preventing Pollution from Fire Fighting Run-off Checklist

| | |
|---|---|
| Location | |
| Date | |
| Completed by (name and signature) | |

| | Preventing Pollution from Fire Fighting Run-off | Y/N | Comments |
|---|---|---|---|
| 1. | Have you created a site Emergency Plan?<br>• Does it contain actions to be taken in the event of a fire?<br>• Does it contain procedures for controlling fire fighting run-off? | | |
| 2. | Is your site subject to COMAH regulations? | | |
| 3. | If yes to Q2 above, have you made arrangements for the provision of water supplies to be used to fight fires on your site? | | |
| 4. | Does your site Emergency Plan include an assessment of the likely route of any run-off from the site? | | |
| 5. | Does your site Emergency Plan detail the likely volumes of run-off which might result from an incident? | | |
| 6. | Have you considered fire fighting water containment? | | |
| 7. | Does your site Emergency Plan include fire fighting strategies and possible ways to reduce the amount of fire fighting run-off generated? | | |
| 8. | Does your site Emergency Plan include contact details for the Environment Agency? | | |
| 9. | Have you practised your site Emergency Plan? | | |
| 10. | Do you regularly review and revise your site Emergency Plan? | | |
| 11. | Additional comments: | | |

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# LOSS PREVENTION STANDARDS