

4.4.7 EMERGENCY PREPAREDNESS AND RESPONSE

THE IMPORTANCE OF PREVENTION

At the beginning of the ISO 14001 specification document one of the criteria for an environmental policy is the 'prevention' of pollution. Not clean-up or mitigation of pollution, but prevention. The theme of prevention runs throughout the Standard, and surfaces prominently in element 4.4.7, Emergency Preparedness and Response. Most organisations, when they think about emergencies, concentrate on the response aspect, overlooking the more valuable mindset of preparedness, or prevention. The purpose of this element in ISO 14001 is to:

- Minimise the risk of an emergency happening
- Identify the full range of possible emergency situations
- Develop, implement, and test plans to respond promptly and effectively to all kinds of emergencies that could impact the environment
- Minimize the effects of emergencies on the environment
- Continually improve emergency preparedness and response procedures.

IDENTIFYING POTENTIAL EMERGENCY SITUATIONS

The first requirement of this element of the Standard is to identify all conceivable incidents, accidents, and emergencies under normal operating conditions, and during situations such as start-up, shut-down, other circumstances when operations are not at equilibrium, and events outside the

organization's control. Various strategies can be used to arrive at a catalogue of potential emergency situations, including:

- Review incident records for the past five years
- Check statistics on the types of incidents and emergencies that have occurred, their locations, times of the day, shifts, operating and weather conditions, and other critical factors
- Review the environmental aspects list for potential emergencies under abnormal operating conditions
- With a group of individuals from various functional areas in the organization, brainstorm possible incidents and emergencies.

ISO 14001 4.4.7 EMERGENCY PREPAREDNESS AND RESPONSE says:

The organization shall establish and maintain procedures to identify potential for and respond to accidents and emergency situations, and for preventing and mitigating the environmental impacts that may be associated with them.

The organization shall review and revise, where necessary, its emergency preparedness and response procedures, in particular, after the occurrence of accident or emergency situations.

The organization shall also periodically test such procedures where practical.

POTENTIAL EMERGENCY SITUATIONS	POTENTIAL EMERGENCY LOCATIONS
<ul style="list-style-type: none"> • Fire, explosion • Gas leak, spill • Natural disasters – lightning, earthquake, flood, extreme weather • Failure of a tank, dam, equipment, structure • Electrical power or gas cut • Crash, collision • Sabotage, vandalism, terrorist attack, bomb threat, riot, hostage incident 	<ul style="list-style-type: none"> • Hazardous chemical storage • Hazardous waste storage • Bulk oil, fuel, chemical storage tanks • Process start-up and shut-down • High pressure vessels • Rail and road tankers, ships • Unloading, shipping points • Waste treatment facilities and discharge points • Storm water drainage routes

Examples of potential emergencies are listed in the above table.

Potential locations for an emergency (i.e., 'hot spots') should be mapped, and emergency equipment located nearby. Neighbourhood areas vulnerable to gas escape or other consequences of an emergency at the facility should also be identified and marked on a map for rapid notification or other action if there is an emergency. Prevailing wind directions should be mapped to identify the areas with highest probability of being downwind. Sensitive areas in the vicinity may include:

- Residential, industrial, agricultural, recreation, or fishing areas
- Sources of drinking water (e.g., surface or groundwater)
- Environmentally sensitive areas, nature reserves, endangered species
- Cultural or historical sites.

Levels of Emergency

When developing emergency response plans, many organizations define three levels of severity, each of which will trigger a particular size and scope of response:

1. Can be handled by local department personnel
2. Need to activate the emergency response team at the facility; may need to evacuate areas of the facility
3. Full scale emergency requiring outside assistance; possible neighbourhood evacuation or protection from harm.

EMERGENCY RESPONSE PLAN

This course is not intended to be an in-depth guide to all elements of ISO 14001. Developing a comprehensive emergency response plan for a facility often requires expert assistance. This lesson will touch on some of the basic items that should be addressed. Astonishingly, the Standard does not require the emergency response plan to be documented, though in reality it is inconceivable that such a plan could work unless it has been drawn up on paper. Key elements of an emergency response plan are:

First alert procedures – What should be done when an environmental emergency (or potential emergency) is discovered – who to contact, emergency phone numbers, reporting requirements, initial response actions.

Define a chain of command – Describe the organizational structure of the emergency response team - who is in command, what are the reporting relationships and individual responsibilities.

Describe responses to different kinds of emergencies – Outline the action plans for Level 1, 2, and 3 fire, spill, gas leak, and other types of emergencies, including setting up a command post, site security, notification of external assistance, internal and external communications, evacuation plans (e.g., for the site and neighbouring areas), assembly points, mitigation and clean-up methods.

Reporting – Specify who has responsibilities for reporting emergencies internally within the facility and organization, and externally to the community, government, and the news media.

Incident investigation – Describe a procedure for debriefing the emergency response team soon after the emergency is over, investigating the root causes of the incident, and recommending actions to correct and prevent the same type of incident happening again.

Emergency response drills – ISO 14001 requires emergency plans to be tested when practical. A schedule of drills covering the various kinds of foreseeable emergencies and locations should be drawn up and implemented. The effectiveness of each drill should be assessed and procedures amended if necessary, or more training done to bring performance in line with requirements.

Copies of the emergency response plan must be available throughout the organization, and everyone must be

aware of first alert and evacuation procedures. Members of the emergency response team must conduct regular practices, and all personnel at the site should be drilled in initial response and evacuation procedures. Records should be kept of the results of drills, and of modifications to response procedures.

More than any other document, an emergency response plan must be kept up to date, with only current personnel and phone numbers listed, and only current procedures described.

SUMMARY OF KEY POINTS

- Prevention (i.e., risk management) is a key component of emergency preparedness.
- An organization must have a procedure to identify potential sources, types, and environmental impacts of accidents and emergencies.
- An emergency response plan should include descriptions of personnel roles and responsibilities, resources, response actions, mitigation of impacts, internal and external communications, training, drills, incident investigation, and review procedures.
- Regular drills must be conducted to test the effectiveness of the emergency response plan.
- The plan must be kept up to date at all times.