

SECTION 8: INCIDENTS AND EMERGENCIES



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Section 8: Incidents and emergencies

Summary of Section 8

- ◆ Defines incidents and emergencies and gives some examples of common types.
- ◆ Sets out the requirement to prepare a Drinking Water Incident Response Plan and provides guidance on how to prepare the Plan and the key contents of the Plan.
- ◆ Describes how Water Services Authorities (WSAs) should notify the Health Service Executive (the HSE) and the Environment Protection Agency (the EPA) of incidents and emergencies and provides guidance on what information should be included in the notification.
- ◆ Sets out what WSAs should include in their reports to the EPA on incidents and emergencies.
- ◆ Describes when an Outbreak Control Team (OCT) may be set up when there is illness, or suspected to be illness, in the community associated with an incident involving water supplies.

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1. Introduction

1.1 | From time to time events occur that affect or threaten to affect the quality of drinking water supplies in a way that puts at risk human health or causes considerable concern to consumers. These events may be caused by some failure of the Water Services Authorities (WSA's) operations or may be caused by something outside of the WSA's direct control. Some events will be sufficiently serious to be classed as incidents or emergencies requiring full investigation; others will be minor and will not require investigation to the same extent.

1.2 | All events that are judged by the WSA to be incidents or emergencies should be notified to the Health Services Executive (the HSE) and the Environment Protection Agency (the EPA). A failure to meet a standards or indicator parameter value in tables A, B and C of part 1 of the schedule to the Regulations is not necessarily an incident or emergency, particularly if it does not put at risk human health or cause concern to consumers and it can be dealt with fully under the notification and other requirements of regulation 10. Some failures will put at risk human health (microbiological) and will cause concern to consumers (iron and manganese causing discoloured water) and may require a fuller investigation than under regulation 10. Other incidents may be identified without there being a sample failing to meet a standard or indicator parameter, for example a pollution incident in the water source, or heavy rain and flooding impacting on raw water quality, or a failure of disinfection at a treatment works.

2. Definition of incidents and emergencies

2.1 Definitions

2.1.1 | An incident or emergency is defined as any event detected by routine compliance monitoring or routine operational monitoring, or any other event that was not necessarily detected by the routine compliance or operational monitoring and has occurred because of something that has happened in the catchment, at the treatment works or in the distribution network, that:

- ◆ appears to have caused illness in the community as a result of the quality of the water supplied (reports of illness in the community that could possibly be caused by the water supply); or

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- ◆ because of its effect, or likely effect, on the sufficiency or quality of the water supplied, gives rise to, or is likely to give rise to, a significant risk to health of the persons to whom the water is supplied; or
- ◆ has caused, or is likely to cause, significant concern to persons to whom the water is supplied; or
- ◆ has attracted, or is likely to attract, significant local or national publicity.

2.1.2 | Note that a failure to meet a standard in tables A and B or an indicator parameter value in Table C in part 1 of the schedule to the Regulations that is detected by routine compliance monitoring or routine operational monitoring is not necessarily an incident or emergency. Many such failures do not cause a potential danger to human health or cause concern to consumers and can be dealt with fully under the notification, investigation and remedial action requirements of regulation 10. A failure is only classified as an incident or emergency if it meets one of the criteria set out in paragraph 2.1.1.

2.2 Examples of incidents and emergencies

2.2.1 | Some common examples of incidents and emergencies are:

- ◆ a serious pollution of a surface water upstream of an abstraction point that has caused or threatens to cause difficulty with the treatment process and therefore a significant effect on drinking water quality;
- ◆ a serious pollution of an aquifer from which water is abstracted for supply (the treatment before supply may only consist of disinfection);
- ◆ a failure of an important water treatment process, such as loss of coagulation or filtration or breakdown of disinfection;
- ◆ a significant number of complaints of discoloured water or water with an abnormal or offensive taste/odour within a few hours from a particular area of the water supply; and
- ◆ a serious loss of water supply for a significant period.

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2.2.2 | The guidance that follows in this section applies to the management of the types of incidents described above. It does not apply to the management of major emergencies, such as terrorist threats, national strikes, major power failures and major flooding of water treatment plants that involve a large number of Government Departments and other stakeholders. Guidance on management of major emergencies is contained in “A New Framework for Major Emergency Management” published by an Inter-departmental Committee (Departments of Health and Children, Justice, Equality, Law Reform and Defence) which covers:

- ◆ hazard analysis/risk assessment;
- ◆ mitigation/risk management;
- ◆ planning and preparedness;
- ◆ co-ordinated response; and
- ◆ recovery.

3. Drinking Water Incident Response Plan (DWIRP)

3.1 Introduction

3.1.1 | In accordance with the Department of Environment, Heritage and Local Government (DoEHLG) Circular L4/09, each WSA must have a written Drinking Water Incident Response Plan (DWIRP) that sets out in general terms how incidents or emergencies are to be managed, investigated and brought to a satisfactory conclusion. The Water Services Training Group (WSTG) has developed a two day training course to assist WSAs to prepare a DWIRP. The DoEHLG and the EPA recommend that all appropriate personnel from WSAs attend this course. As well as the course notes and supporting documentation, participants in this course receive

- ◆ a guidance document on preparing and implementing a DWIRP; and
- ◆ a template for a DWIRP.

3.1.2 | WSAs should be aware of the HSE document “Guidelines proposed by the Health Service Executive as a template document between the Health Service Executive and Water Services Authorities for Dealing with Exceedances and Incidents in Water

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Supplies” which is intended to facilitate a standardised framework nationally for dealing with microbiological, chemical and indicator failures and incidents and can be used as a guide for HSE Appendix A5 Protocols in the DWIRP.

3.2 Guidance on preparing a DWIRP

3.2.1 | The guidance in this section sets out the key requirements of a DWIRP. Readers requiring more detail are referred to the guidance document and the template above.

3.2.2 | Each WSA must appoint a senior person within the WSA to be the **manager of the DWIRP** and another person to be the **deputy manager**. These persons should be thoroughly familiar with the organisation, structure and water supply function of the WSA. These persons should have the following main roles:

- ◆ preparation of the DWIRP in consultation with other senior personnel in the WSA and other organisations such as the HSE;
- ◆ distributing the DWIRP as a controlled document to all relevant personnel in the WSA;
- ◆ maintaining the DWIRP up-to-date;
- ◆ co-ordination of the resources needed to implement the DWIRP;
- ◆ training all relevant WSA personnel to implement the DWIRP;
- ◆ rehearsing and testing the DWIRP; and
- ◆ reviewing incidents to determine any lessons and, if necessary, modifying the DWIRP.

3.2.3 | The DWIRP should include the following key requirements:

- ◆ clear criteria for identifying incidents and emergencies that affect, or threaten to affect, the sufficiency or quality of drinking water supplies or give concern to consumers;
- ◆ contact arrangements within the WSA when incidents and emergencies occur outside normal working hours;

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- ◆ a planned response to incidents and emergencies with a senior person in the WSA designated as the **incident manager** responsible for managing and co-ordinating all aspects of the response and for deciding when it is necessary to set up an **incident room**;
- ◆ the criteria for convening an **Incident Response Team (IRT)** to assist in managing defined aspects of the incident. The incident manager would convene the IRT. Where necessary the IRT, chaired by the WSA, could include external organisations such as the HSE. Sometimes it may be necessary for the HSE and the WSA to discuss and agree a course of action which could include the convening of an IRT. Information about IRTs and their role is given in Chapter 4 of "Drinking Water and Health – a Review and Guide for Population Health, Health Service Executive 2008" (www.hse.ie/eng/services/Publications/services/Environmentalhealth/HSE_Drinking_Water_and_Health_Review_and_Guide_2008.pdf);
- ◆ clear lines of communication between sampling, laboratory, scientific, engineering, operational, customer services and management staff during the incident;
- ◆ contact details (name, telephone, fax, e-mail address) of the appropriate person within the HSE who should be notified of the incident and arrangements for liaison with that person throughout the incident;
- ◆ contact details (name, telephone, fax, e-mail address) of the appropriate person within the EPA who should be notified of the incident and arrangements for liaison with that person throughout the incident;
- ◆ preparing a report on the incident in consultation with IRT and the HSE contact person if the HSE is not part of the IRT;
- ◆ the planned response should contain details of how WSA should deal with typical common types of incident including:
 - how the investigations are to be initiated;
 - what the investigations might consist of;
 - how any information and advice is to be given to consumers and who does it including help lines and automated information messages;

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- criteria for deciding when it may be necessary to supply water by other means such as in bottles or tankers and the arrangements for such supplies;
- who is responsible for dealing with the media (providing information and enlisting their help to broadcast information); and
- the criteria for deciding the incident is over;
- ◆ the investigations may include, when relevant;
 - reviewing the recent events in the catchment including any monitoring of the raw water and checking the operation of the treatment works and distribution network;
 - reviewing recent compliance monitoring data and operational monitoring data from relevant points in the treatment and distribution networks;
 - visiting and inspecting relevant parts of the catchment, treatment works and distribution network;
 - taking and analysing samples for relevant parameters from appropriate points in the catchment (raw water source), treatment and distribution networks; and
 - carefully assessing the results of the investigations and deciding whether remedial action is needed;
- ◆ for giving advice to consumers on any action they may need to take to protect their health whilst the WSA is investigating the incident or taking remedial action (this advice must be given in consultation and the agreement with the HSE or the IRT if the HSE is part of the IRT):
 - criteria for deciding when advice by leaflet is sufficient and when advice needs to be given by other means such as loud-hailer, media announcements etc;
 - model leaflet for:
 - ❖ advising consumers to boil water for drinking and cooking when there is a microbiological problem; and

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- ❖ advising consumers not to use water for drinking and cooking and to use an alternative supply (in bottles or from a tanker) for these purposes when there is a chemical problem;
- how the leaflets are to be distributed;
- these leaflets should be capable of adaptation quickly to any water quality or water supply emergency;
- these leaflets should be very clear and use simple language;
- these leaflets may need to be provided in languages other than English in some cases (e.g. Irish and other languages);
- **when such advice is to be given the WSA should agree with the HSE or the IRT (if the HSE is part of the IRT), if possible before the advice is given, the criteria that would enable the advice to be withdrawn;** and
- model leaflets for withdrawing the advice when the incident/emergency is over;
- what information needs to be provided to the media, who prepares it and who speaks to the media (TV, radio and newspapers) – **it is vitally important that consistent information is given to the media;** and
- reviewing the adequacy of the procedures from time to time as a result of experience in dealing with incidents and emergencies.

3.2.4 | WSAs should have specific emergency procedures for key operational sites such as major water treatment works and major service reservoirs. Hazard assessment studies as part of a Drinking Water Safety Plan should be carried out at all key operational sites to determine which parts of the process would cause major problems if there were a failure. The specific emergency procedures for the site should include contingency plans to deal with failures of those key parts of the process. These plans may include the use of stand-by equipment or processes or the shutting down of the works or reservoir and supplying water by alternative means.

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3.3 Rehearsal of DWIRP

3.3.1 | Each WSA should have a policy for rehearsal of the procedures in its DWIRP so that all personnel involved understand and become familiar with exactly what they have to do when an incident or emergency occurs. The policy should specify who is to organise rehearsals and the type of rehearsal. Ideally the rehearsal should be as realistic as possible and should include the HSE, the EPA and other stakeholders. The outcome of rehearsals should be assessed and recorded and any lessons learned from the rehearsals should result in appropriate revisions to the procedures in the DWIRP.

4. Notification of incidents to the HSE and the EPA

4.1 | The WSA should notify the designated HSE and the EPA contacts by telephone, followed by fax or e-mail with the details of any incident or emergency that falls within the definitions in sub-section 2 of this section as soon as possible after it becomes aware of the event affecting one of its public water supplies. The notification to the HSE is to enable the HSE to consider whether there is a potential danger to human health (the HSE has developed a template for notifications) and if there is to advise the WSA on what action needs to be taken to protect consumers' health. The HSE may require further information through on-going communication with the WSA before it can advise the WSA whether there is a potential danger to human health and the actions required to mitigate the danger. The notification to the EPA is to enable the EPA to consider whether any urgent regulatory action is necessary such as a direction to require remedial action to be taken.

4.2 | This notification should include the following information (if some of the information is not available it should be included as soon as practical):

- ◆ the date of the incident, the date and time of the notification and the person making the notification;
- ◆ the geographical location, such as the water supply zones affected, and, if relevant, the catchment, the water treatment works and service reservoirs involved;
- ◆ a description of the nature of incident;

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- ◆ whether a standard for a parameter has been, or is likely to be, breached or whether an indicator parameter value has been, or is likely to be, exceeded. If so the WSA must complete the notification of failure form at Appendix 1 of Section 6 of this handbook;
- ◆ whether any other element, organism or substance (not a parameter) is of concern and the effect or likely effect on the quality of water supplied;
- ◆ the number of people affected;
- ◆ the likely cause(s) of the event;
- ◆ the action that has been, or is being taken, to rectify the situation; and
- ◆ whether there has been any local or national publicity and details of it.

4.3 | The WSA should consider the HSE draft guidelines for dealing with incidents and consult and agree with the HSE on:

- ◆ whether there is a potential danger to human health;
- ◆ the nature and extent of any sampling and analysis that might be needed to establish whether there is a potential danger to human health and to establish the cause and extent of the incident;
- ◆ any action that might need to be taken to inform and protect consumers and the content of any notice issued to consumers;
- ◆ if a notice of advice is to be issued to consumers, the criteria for deciding when to withdraw that advice; and
- ◆ any information that should be given to the media relating to any potential danger to human health and advice to consumers about protecting their health.

4.4 | The WSA should liaise with the HSE, the EPA and any other relevant organisations throughout the incident. This liaison could include verbal communications, written communications (fax or e-mail), local meetings or full scale IRTs.

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5. Report on the incident/emergency to the EPA

5.1 | The EPA deals with each incident notified to it on a case by case basis. Usually the EPA will ask the WSA (or the IRT if one is convened) for a response to its initial queries within one week. After considering this response and the individual circumstances of the incident, the EPA may require a further report from the WSA or the IRT. Generally a further report on an incident will be necessary when the quality of the drinking water is compromised or threatened to be compromised and there is a potential danger to human health. This report should be available publicly so that all WSAs can learn the lessons arising from the incident and other stakeholders are kept informed. The EPA needs the report to enable the EPA to consider whether any further regulatory action is required.

5.2 | The WSA or the IRT should include the following information in its report:

- ◆ background description of the incident, including details of:
 - the water zones and population affected;
 - water sources and treatment works;
 - service reservoirs and distribution network;
 - any problems or abnormal occurrences in the catchment, the operation of works, service reservoirs and/or distribution network experienced prior to the incident;
 - where relevant, a map of the area and diagrams of the treatment works, distribution networks etc;
- ◆ log of events with times and dates, including details of:
 - ❖ methods of identifying the supply zones affected, or likely to be affected, and of informing and protecting consumers;
 - ❖ the investigations to establish the cause, the extent of the incident, including the samples taken and their locations etc;
 - ❖ actions taken to restore water quality or provide alternative supplies;

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- ❖ notification and subsequent consultation and liaison with the HSE and any other organisations;
- ❖ any advice received from the HSE and any other scientific or technical experts, and any action taken as a result of the advice;
- ◆ numbers of samples taken and the sampling points associated with the incident and the results of the analysis of those samples;
- ◆ discussion where appropriate on:
 - the appropriateness and effectiveness of the investigations and the action taken;
 - the analytical systems and methods used;
 - whether the WSA's procedures in its DWIRP were followed;
 - the adequacy of liaison arrangements with the HSE and other relevant organisations;
 - the adequacy of the communications with the consumers;
 - the adequacy of the communications with the media;
 - on any potential danger to human health and the actions to mitigate any danger; and
 - details of any further action taken or proposed to prevent the incident recurring;
- ◆ copies of any press releases, press reports and any information and advice provided to consumers; and
- ◆ conclusions of the WSA's handling of the incident and any recommendations for improvements to its procedures in its DWIRP.

5.3 | It follows from the last bullet of paragraph 5.2 above that once an incident is concluded the WSA should review its handling of all aspects of the incident to identify any lessons to be learned from the incident. These lessons may require the WSA to modify parts of its DWIRP for dealing with future incidents.

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6. Incidents involving outbreaks of illness

6.1 | When drinking water is associated or suspected to be associated with an outbreak of illness in the community an outbreak investigation may be triggered. This may involve the convening of an **Outbreak Control Team (OCT) by the HSE** to manage the outbreak. If requested, the WSA should nominate a suitable person to serve on the OCT to provide the members of the OCT with all relevant information relating to the incident involved in the outbreak. The OCT and the IRT (see paragraph 3.2.3 above) should have some common membership. Information about OCTs and their role is given in Chapter 7 of Drinking Water and Health – A Review and Guide for Population Health, Health Service Executive, 2008 ([www.hse.ie/eng/services/Publications/services/Environmentalhealth/HSE Drinking Water and Health Review and Guide 2008.pdf](http://www.hse.ie/eng/services/Publications/services/Environmentalhealth/HSE_Drinking_Water_and_Health_Review_and_Guide_2008.pdf)).

6.2 | When an OCT is operating, a number of organisations are involved in the management of the incident and the outbreak. It is extremely important that consistent and clear messages and information is given to the public and the media. Generally both the OCT and the IRT (that is both the WSA and the HSE) will be involved. Each should have a dedicated spokesperson for public/media announcements. The OCT and IRT should decide whether any media notices and appearances should be made jointly. Whilst the WSA has the responsibility to advise all consumers, in some situations additional advice may be provided directly to consumers by the HSE.

6.3 | After an incident involving an outbreak of illness is concluded, the OCT should critically review all aspects of its handling of the incident to identify any lessons to be learned and, if necessary, to make any changes to its practices and procedures for future incidents involving outbreaks of illness.

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