

National guidance document on the provision of water for fire fighting



2nd Edition

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and Water UK
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Foreword

It is true to say that to be successful in firefighting, fire fighters must have immediate access to adequate supplies of water. The access to, and proximity of, those water supplies directly affects the resources that Fire Authorities need to provide in protecting and mitigating their communities from the effects of fire.

This second edition of the National document has been produced jointly by representatives of the Water Industry, the Fire Service with the encouragement of the Department for Environment, Food and Rural Affairs, The Welsh Assembly Government and the Department for Transport, Local Government and the Regions. It demonstrates commitment by all Water Companies and the Fire Service to improve working relationships and secure co-operation in meeting the challenges facing both parties.

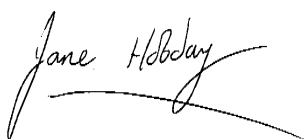
The objectives of this document remain to promote liaison and encourage understanding of the issues facing each party at a local, regional and national level so that all can provide a safer and improved service to their customers. It is essential reading for Water Companies and Fire Services who are encouraged to review existing liaison arrangements where they exist, and align them with the recommendations in the guidance document, or take steps to establish them where they do not.

Since its first issue the guidance has been successful and has helped improve the, spirit of co-operation and partnership between the Fire Service and the Water Industry that is based on meeting the needs of public safety and expectation

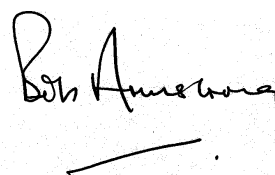
From the earliest days of its formation the Group has recognised the importance of adopting a joint "risk assessment methodology" approach to situations. This principle also formed the basis of the Guidance on Inspection, Testing and Abandonment of Fire Hydrants published in the winter of 2000 and which now has been incorporated into this document.

The future work of the National Liaison Group will continue to be monitoring the advice in this document to ensure that it is practicable and is working well, and to ascertain whether there is any need to review existing legislation.

Finally we would like to thank those responsible for continuing to develop the thoughts of both Water UK and the LGA into this guidance and those practitioners out in the field for embracing and implementing its objectives



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1

introduction

- 1.1 The purpose of this document is to facilitate and promote liaison between Local Authority Fire Brigades and Water Companies through guidance, which identifies the issues, that Water Companies and Fire Brigades should consider when preparing their own local arrangements. It highlights the issues that are of concern to Water Companies and Fire Brigades so that each may be aware of the other's obligations, objectives and constraints in the preparation of local arrangements for providing and securing water for fire fighting.
- 1.2 Water Companies operate within a regulated environment and are striving to provide the highest levels of service to their customers at levels of costs that reflect good value for money. They also have obligations that are laid down in statute. The Fire Service is a public emergency service and is provided under statute by local Fire Authorities which have the responsibility of providing a service to meet local needs under normal circumstances. Taking account of these operating parameters, the document is aimed at developing a set of principles to support good local liaison.
- 1.3 It is only through a thorough understanding by both parties of each other's statutory duties and procedures that the day to day working relationships will effectively deliver the service expected by the public from both organisations. In order to promote a good understanding it will be necessary for good communication links to be developed at all levels. It is considered that the foundation for these lies in structured training and education supported from a firm commitment by those involved.
- 1.4 Both the Fire Brigades and Water Companies are developing and adjusting their operational procedures, where possible, to take account of the environmental impact of their operations. This commitment itself may impact on the relationship between the two services and will need to be taken into account when making local arrangements. The Water Companies will also need to take account of water quality and customer service issues that may arise as a result of their networks being used by the Fire Service.
- 1.5 However, it is emphasized that the purpose of this document is to provide guidance to Fire Brigades and Water Undertakers, and that it is not the intention that this document should impose any additional legal obligations on them.

2

fire service duties - background legislation

- 2.1 The Fire Services Act 1947 is the principal legislation, which governs both the Secretary of State and Local Authorities in the provision of fire services. It sets out both the duties and powers under which water for fire fighting should be provided. It requires that the Fire Authority takes all reasonable measures to ensure the provision of an adequate supply of water and securing its availability for use in case of fire. The Act also gives fire officers wide-ranging powers in carrying out their duties to enable a speedy response to the outbreak of fire.

- 2.2 In providing a fire service, Fire Authorities are guided by national standards to ensure that the appropriate response to fires is provided. In providing that response, preplanning for fire fighting water supplies is essential. The Fire Services Act 1947 also places obligations on Water Companies to ensure that their operations do not hinder the ability of the Fire Service in the extinguishing of fire.

See Appendix 1 for details of the relevant legislation.

3

water companies' duties – background legislation

- 3.1 The obligations on the water industry are contained in the Water Industry Act 1991. In certain circumstances, the act is supplemented by further directions and regulations e.g. the Water Supply (Water Quality) Regulations 1989 (to be replaced by the Water Supply (Water Quality) Regulations 2000) and Water and Sewerage Services (Customer Service Standards) Regulations 1989 otherwise known as the Guaranteed Standards Scheme and DG reference Levels of Service, some of which may also be relevant to Fire Service activities.
- 3.2 This legislation requires the Water Companies to:
- a) Provide water constantly in mains and other pipes that have fire hydrants fixed on them at a pressure that will reach the top most storey of every building in the Undertakings area except in certain circumstances or when work is being undertaken.
 - b) Provide a water service to customers sufficient for domestic purposes at an agreed minimum flow and pressure and report to the Director General where this is not achieved. In addition companies must provide supplies without interruption, which if they occur on an unplanned, unwarned basis must be reported to the Director General. Both measures are used by Ofwat as one of the principal indicators of customer service performance in the Water Industry.
 - c) Supply water that is wholesome and within defined quality parameters. Failure to achieve the quality parameters may lead to prosecution.
 - d) Allow any person to take water for fire fighting purposes from any pipe to which a fire hydrant is fixed. Fire hydrants are fixed on request at convenient points except on trunk mains. The Fire Authority, or the person requesting the apparatus, is liable for the costs of this work.
 - e) However the Water Companies do not have powers to require developers to size mains for fire fighting purposes. If a developer requisitions additional mains capacity above that needed for domestic purposes, it can be provided and the costs met by him.

The legislation also states that:

- a) Water taken for fighting fires or for testing and training is not chargeable.
- b) Recklessly interfering with any resource, water main or other pipe is an offence.

See Appendix 2 for details of the legislation.

4

liaison

Good liaison and information exchange is essential to support the operational needs of both the Fire Services and Water Companies, and is necessary at all levels to take account of national, regional, area and local issues.

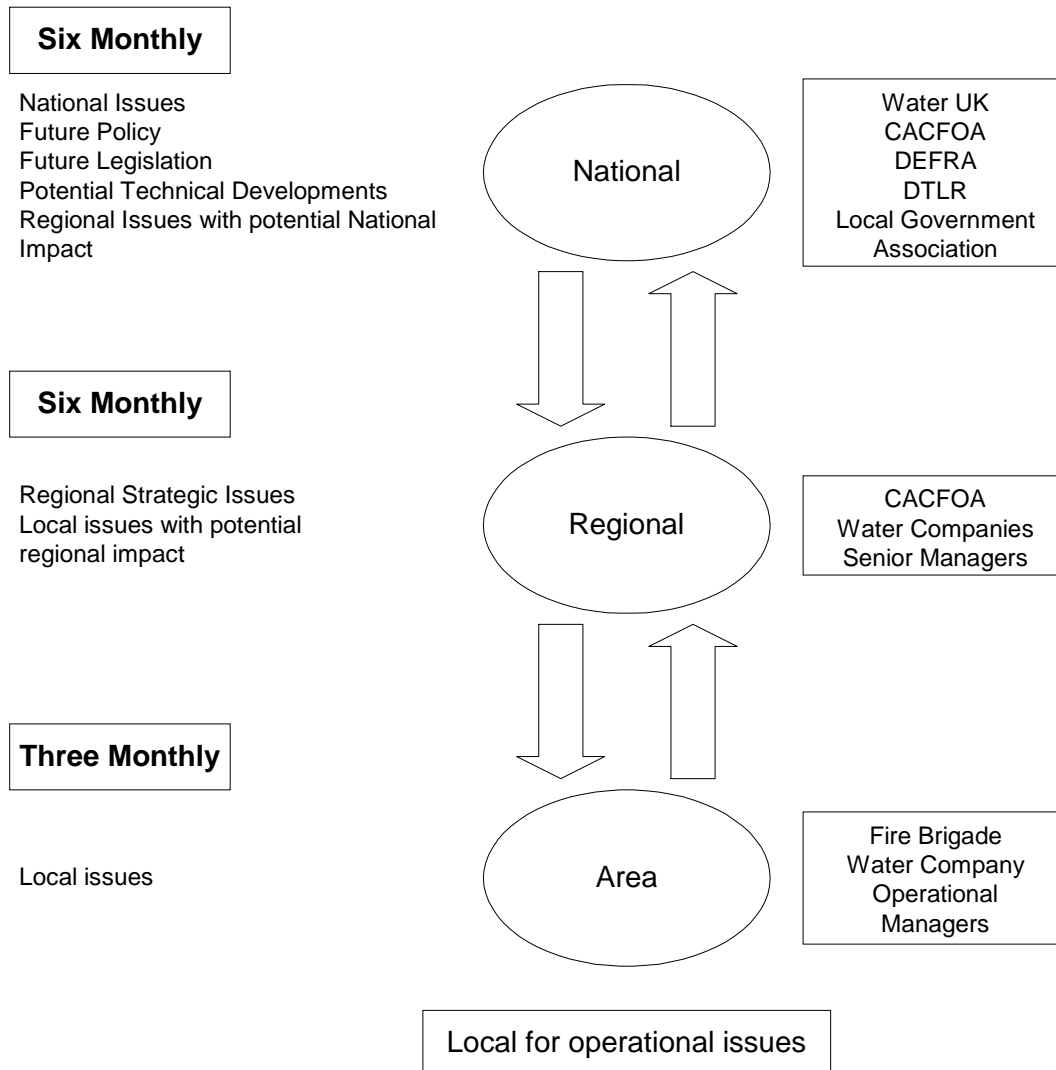


Figure 1 – Provision of water for fire fighting ~ liaison

4.1 **National Liaison Group - terms of reference**

Objectives

To facilitate constructive and productive liaison between the Water Industry and the Fire Services at national level and to support and encourage liaison at local operational level. For this purpose the Water Industry and Fire Service will:

- a) formulate frameworks for best practice that will assist the Water Industry and Fire Service in delivering their statutory duties;
- b) enable the Water Industry and Fire Services to exchange information on operational and statutory matters, either in place or proposed, to enable each to gain a better understanding of the issues which relate to or impact upon their respective activities;
- c) enable the Water Industry and Fire Services to exchange information on technical or operating methods and procedures, either in place or proposed, to gain a better understanding of the issues which relate to or impact upon their respective activities;
- d) provide the mechanism for information relating to the Group to be disseminated through to their members as background for their companies and services operating at local level.

4.2 **National Liaison Group - representation**

- a) The representation of the Group should be such as to facilitate constructive liaison between the Water Industry and the Fire Services.
- b) The general views of the Water Industry in this Group are represented by Water UK.
- c) The views of Fire Services in this Group are represented by the LGA and CACFOA.
- d) Each organisation to nominate a single lead contact for the purpose of the Group.
- e) The Group will operate under the chairmanship of DEFRA, and include Department for Transport, Local Government and the Regions membership.

4.3 **Authority**

Water UK and the Local Government Association undertake to use their best endeavors to ensure compliance with best practice and guidance issued to action this.

4.4 **Regional liaison**

It is recommended that Regional Liaison Groups are set up based on the Chief and Assistant Chief Fire Officers Association (CACFOA) structure, perhaps modifying membership to represent the administration boundaries of the local Water Companies. This would provide a consistency of approach to issues and working practices where the boundaries of Fire Brigades and Water Companies are not similar.

4.5 Area / Local liaison

Area liaison between individual Fire Brigades and Water Companies is of vital importance because it is at this level that operational effectiveness rests. Local arrangements covering a range of topics, as suggested in Appendix 3, may need to be drawn up; and, once in place, regularly monitored for effectiveness at local level.

Local liaison to facilitate day to day operational effectiveness will also be dependent upon a good understanding of the respective roles of those involved. Local training should be undertaken to build an awareness of each other's obligations and operating procedures. It may be appropriate to consider formalised training sessions using employees with specialist knowledge and skills from both organisations. In addition to formal sessions, seminars and site visits should be encouraged to help promote co-operation and understanding between members of both organisations.

Local discussion and agreement needs to recognise three distinct phases of liaison:

a) Continuous Liaison

The continuous liaison which facilitates the ongoing state of availability of water for fire fighting.

b) Emergency Liaison

The emergency liaison that occurs in respect of and during an incident which may have an impact on each other's operations.

c) Post Incident Liaison

The liaison that takes place following an incident to review preplanning and performance.

It is recommended that liaison takes place via a nominated Lead Officer from both the Fire Brigade and the Water Company.

Emergency liaison will be greatly assisted by the less formal training, which should include site visits to control centres. This will strengthen the communication links, which need to be robust to ensure effective co-operation when dealing with incidents.

Both training and local agreements will need to address liaison at the incident site. This should include developing procedures that fit into the Fire Service command structure of incidents.

5 providing and securing water for fire fighting

5.1 General principles

The general principle is that there should be operational cooperation between Fire Services and Water Companies to determine actions that might be required to provide and secure water for fire fighting. The Fire Service are experts at assessing and planning the actions required to

fight fires in any given circumstance. Water Companies expertise is central to the process of assessing and predicting the extent to which the distribution system can provide water for fire fighting. Providing and securing water for fire fighting is therefore a joint process balancing what might be required with what may be made available then agreeing actions to "fill the gap", if one exists. Water Companies and Fire Services have limited resources, therefore some form of priority ranking of risk assessments is required. Particular attention should be paid to those potential incidents that carry the greatest risk and might need significant resources to tackle a real incident. The following sections provide some areas for consideration when making arrangements for determining how individual companies and Fire Services approach this issue.

The provision of water for fire fighting requires careful preplanning that not only establishes need but goes on to identify the sources of water, whether drawn from public water mains or other sources, and then secures availability for use in case of fire.

5.2 New development - flow rates

The flow rates that the Fire Service ideally requires to fight fires are detailed in Appendix 5, for the categories of premises identified and for hydrants requisitioned for new domestic or industrial sites. The Water Company will inform the Fire Service where they estimate that these flows cannot be met under normal demand conditions, with no additional demands from third parties beyond the control of the Water Companies, and a joint agreement reached on making water available using the principles outlined in section 5.4.

5.3 Existing hydrants - flow rates

Where significant permanent changes are made under section 5.6 where practical, consideration should be given to the achievement of part, if not all of the flow requirements given in Appendix 5, the guidance given in Appendix 4 should be used to address any shortfall.

5.4 Risk assessment

Dependent upon the potential for larger fires to occur, it may be necessary for the Fire Service to consider securing greater supplies of water than those immediately available from the nearest hydrant. In these cases it would be appropriate to apply a risk assessment methodology which could be used in identifying the sources of water for fire fighting purposes and can be based on either a site specific basis for large, isolated and high risk premises or generic assessments for other areas such as city centres or industrial estates.

It may be appropriate to consider both probability and consequences of fire in determining satisfactory arrangements during risk assessments. Risk assessment may also be considered by the Water Companies in assessing or predicting the effects of drawing large quantities of water from their network when large scale fire fighting operations are carried out.

Figure 2 demonstrates the general principles.

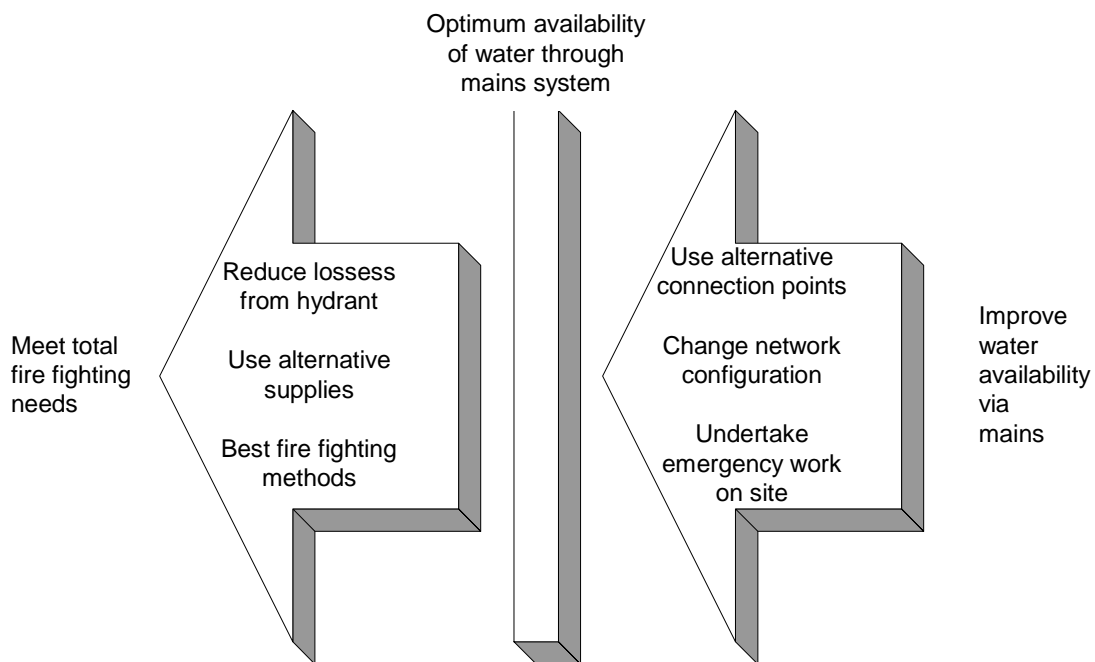


Figure 2 – Provision of water for fire fighting ~ optimum mains supply

Appendix 4 provides a list of points for consideration when such risk assessments are being carried out.

5.5 **Water distribution - network hydraulics**

In considering the requirements of water for fire fighting it should be recognised that distribution systems are subject to a number of external influences beyond the control of Water Companies. Effects due to the variation in demands during the day, and peaking factors caused by consumption variations throughout the year both effect the hydraulics of the system. Over the longer-term water availability is also affected by changes in domestic and industrial use as well as new connections. Short term demands from high industrial use and illegal use of hydrants also effect the capacity of the system.

5.6 **Communication needs during distribution changes**

a) Temporary changes

It is essential that a communication process be agreed which meets the reasonable expectations of the Fire Brigade, providing information on planned and emergency changes, which have a significant impact on the anticipated ability to fight fires. This information will allow the Fire Service, if appropriate, to amend their response to an event to match the conditions in the field. Focus should be on manageable and robust information systems, taking into account risk assessment.

b) Permanent changes

Prior to any significant permanent changes to the mains network, consultation should take place between the Water Company and the Fire Brigade to consider the impact of any changes and the duties of both parties. There should also be a procedure for managing and dealing with the effects of any significant changes not previously notified.

5.7 Sprinkler systems

The local agreements should consider the guidance given in the Water Supplies to Fire Sprinkler Systems document issued by the Loss Prevention Council.

Sprinkler systems have typically been associated with larger commercial and industrial sites, but there is an emerging interest in the provision of sprinkler systems in domestic premises. There is increasing evidence that domestic sprinklers can be an important tool in preventing the loss of life and damage to property. Though not yet in widespread use the Fire Brigades see benefits to the community in the installation of domestic sprinklers in new build and in retrofit to domestic properties of multiple occupancy.

The emphasis on early consultation is important, too many projects have stalled in the face of additional costs related to water supplies.

Whenever it is contemplated to install domestic sprinklers it is important that the principles in section 5.1 above are adopted. The expertise of the firefighter or promoter of the installation and those of the Water Company should be brought together at an early stage of the planning process. Then a joint process of balancing what water might be required with what may be made available and agreeing actions to "fill the gap", if one exists can be identified.

6

inspection, testing and abandonment of hydrants

6.1 Objectives and issues for consideration in formulating policy

The prime concerns of Water Companies appears to be the impact of hydrant inspection, testing and flow testing activities by Fire Brigades on the quality of water in their distribution systems. The prime concern of Fire Brigades appears to be the validity of hydrant testing and inspection and the cost of repairs. Local discussion on the relative benefits of these activities may help Companies and Fire Brigades to review their policies.

The various objectives of Fire Brigades and Water Companies in relation to fire hydrants are:

- ◆ To ensure that there is access to water for firefighting purposes.
- ◆ To maintain hydrants efficiently at minimum costs.
- ◆ To minimise, if not eliminate, the risk of disruption and discoloration of water supplies.

There is a balance of risk, cost and benefit to society in the continuing provision and maintenance of a hydrant on a distribution system. The Fire Brigades trades off the benefit of being able to have access to water in the event of a fire against the ongoing costs of providing and maintaining the hydrant. The Water Company carries the risks of interruption or discoloration of supplies, but weighs them against its legal obligations and the benefit to society of being able to fight fires.

Both industries have an obligation to the public and their customers to ensure that they discharge their obligations effectively and efficiently. In seeking to achieve these objectives, Water Companies and Fire Brigades should review the content of their policies in these areas. They should

test jointly the validity of continuing historic practice against their current obligations and common objectives.

6.2 Risk assessment approach

Risk assessment is a term that both the Fire Service and Water Companies are becoming ever more familiar with. The culture of the past which required the monotonous inspection and testing of equipment is now being superseded by the modern day risk assessment approach and this is very much encouraged through the National Guidance Document on the Provision of Water for Firefighting. The advantages of this approach being applied to the inspection and testing of hydrants will ensure that hydrants are monitored and maintained to meet the requirements of Section 57 of the Water Industry Act 1991 and at the same time provide the following benefits to both fire authorities and/or Water Companies.

- ◆ Significant reduction in hydrant repairs and maintenance budgets.
- ◆ Reduced administrative costs.
- ◆ Reduced risk of causing discoloration of drinking water.
- ◆ Resources redirected to more proactive tasks (e.g. community fire safety).
- ◆ Improved liaison arrangements between the organisations

6.3 Hydrant inspection and testing methodology

It is recommended that future inspection and testing of hydrants should consist of one or more of the three examinations:-

- ◆ Above ground
- ◆ Below ground
- ◆ Wet pressure test

In line with the National Guidance Document on the Provision of Water for Firefighting, fire brigades and water companies are encouraged to move away from the flow testing of hydrants and use other methodologies. This is not seen as a test for maintaining a hydrant and, for the reasons highlighted in Section 3, there is little purpose to this test. As a result, the flow test is not included as one of the examinations of hydrants.

Above Ground Examination

This will involve a visual inspection of the hydrant frame, cover, surface surrounding the hydrant and the hydrant indicator plate. The period between inspections should be risk assessed and take into account such likely factors of area location and risk, hydrant position, age, material, previous history, etc.

E.g. For a hydrant situated in the pavement of a residential urban area free from vandalism, the Fire Brigade may determine to inspect on a 1-2 year basis, whereas a hydrant set in a country lane that has regular farm traffic driving over it may need inspecting every 3-6 months to ensure it is clear of mud, etc. There could well be a case of community involvement in keeping hydrant plates and covers clear and visible.

Below Ground Examination

This will involve the visual inspection of the hydrant pit and the hydrant itself. Defects, which would affect the ability to deliver water for

firefighting purposes or create a hazard should be reported immediately. The period between inspections should be risk assessed and take into account area location and risk, hydrant position, age, material, previous history, etc.

E.g. For a hydrant situated in the pavement of a residential urban area free of vandalism, the Fire Brigade may determine that an inspection should be carried out every 2-4 years, whereas a hydrant that regularly silts up may require inspecting every 6 months.

Wet Pressure Test

The hydrant test is conducted by fitting a standpipe to the outlet and then partially opening the valve to allow a small amount of water to flow (equivalent to a domestic tap). A blank cap is to be fitted in the standpipe head, or the valve in the head closed and the hydrant fully opened. Whilst under pressure, all joints are to be visually inspected for signs of leakage and only those leakage's that would impair the hydrant for firefighting purposes, or cause a hazard, should be reported to the Water Company. The hydrant is to be turned off without excessive force and the standpipe removed.

This test should only be carried out where there is reason to doubt the hydrant's integrity or that it is at an interval recommended by the hydrant manufacturer.

6.4 Hydrants following use by fire brigades at operational incidents

Following use at an operational incident, the opportunity should be taken to record the hydrant number/location and to note any defects, which would otherwise have been found during a hydrant examination highlighted above. This will reduce the time fire brigades have to spend inspecting hydrants and will provide a record of when the hydrant was last used. This may be particularly important should a third party have used or damaged the hydrant and the Fire Brigade receive an invoice for the hydrant repair. Water Companies would also welcome being notified where a hydrant has been used at an operational incident, as it will aid their monitoring of usage and leakage's.

6.5 Maintenance costs

Cost is driven by a number of factors, but includes the number of hydrants in a Fire Brigade area, inspection and testing policy, direct maintenance practices and administrative procedures. There will be a wide range of local circumstances that contribute to current practice across the country. The following points may help Water Companies and Fire Brigades to question and therefore improve current practice through liaison and agreement.

Number of Connected Hydrants

- ◆ Review through a risk assessed approach the number of hydrants required for a given area.
- ◆ Review policy for the provision of new hydrants.
- ◆ Consider a phased programme of abandonment spread over a number of years.
- ◆ Consider a policy to abandon hydrants as an alternative to repair.
- ◆ Consider opportunistic abandonment of hydrants during Water Company mains renewal or rehabilitation schemes.

Maintenance Practices

- ◆ Consider standard repair packages.
- ◆ Allocation of repair tasks between Water Companies and Fire Brigades.
- ◆ Economies of scale of operations with other Companies or Brigades.
- ◆ Economies of scale through standardisation or joint purchasing.
- ◆ Reduce inspection and testing frequency based on a risk analysis.
- ◆ Timing of inspection and repair throughout the year to match available resources.

Administrative Procedures

- ◆ Preparation of accounts, e.g. monthly, quarterly, etc.
- ◆ Formulation of fixed prices for standard repairs.

6.6 Conclusion

The flow testing of hydrants provides little worthwhile information at significant risk of discoloration and interruption to water supplies. A regime of hydrant examination and where necessary wet testing on a risk assessed basis will ensure that hydrants are monitored to meet legislative requirements, bring about a significant reduction in costs, reduce dramatically the risk of contamination and interruption to water supplies and release Fire Brigade resources for proactive preventative duties.

7

securing water for fire fighting purposes on new sites

- 7.1 The developer of a housing development may requisition mains to meet domestic needs under Section 41 of the Water Industry Act 1991. If additional capacity is required for domestic development, or requested by Industrial customers to meet fire fighting requirements, it must be specified to the Water Company in a request under Section 55 of the Water Industry Act 1991.

The requisitioner of the main is required to meet the cost to the Water Company of providing the main.

8

water quality

- 8.1 Any fire fighting or testing of apparatus has the potential to affect the chemical or microbiological quality of the water. The causes include disturbing sediment in the main by changes in the rate of flow, including flow reversal and negative pressures in the main, which could suck in contaminated water from the surrounding soil. It is essential therefore that:
- a) The Water Companies should liaise with Local Fire Authorities ensuring that they are fully aware of the implications of discoloured water incidents. A communication process should be agreed which provides the Water Company with the opportunity to consider whether anything can be done operationally to minimise the risk of supplying discoloured water to its customers.

- b) In considering requests for additional mains capacity the optimum combination for the provision of water for fire fighting should be sought which minimises the need for oversizing and the potentially adverse impact on microbiological water quality caused by stagnation.

Full consideration will need to be taken into account in the local liaison process of issues that relate to the testing of hydrants, training and the design and maintenance of Fire Service equipment (see e) below) that may have an impact on water quality.
- c) Fire Service and Water Companies should consider the value to be gained from the flow testing of hydrants and other methodologies, which do not involve the risk of water discolouration and as such should preferably be used.
- d) Service Reservoirs are not to be used for fire fighting purposes; but, following risk assessment, it may be necessary to consider the installation of a fire hydrant at the boundary of the site.
- e) Cross contamination of the mains supply with contaminated water must be avoided. It is therefore important that equipment is adequately maintained.
- f) Any actions which create sub-atmospheric pressures in the mains should be prevented.

9

disputes procedure

- 9.1 It is essential for local arrangements to include an agreed dispute procedure for resolving matters surrounding the provision of water for fire fighting. A model for consideration in the formulation of such a procedure is suggested at Appendix 6.

It is recognised that if agreement cannot be reached any aggrieved party has the right to consider the legal process, however the aim of this guidance document is to prevent such an occurrence.

Appendix 1

Extracts from the Fire Services Act 1947 as amended

Provision of fire services.

1.—(1) It shall be the duty of every fire authority in Great Britain to make provision for fire-fighting services, purposes, and in particular every fire authority shall secure—

- (a) the services for their area of such a fire brigade and such equipment as may be necessary to meet efficiently all normal requirements;
- (b) the efficient training of the members of the fire brigade;
- (c) efficient arrangements for dealing with calls for the assistance of the fire brigade in case of fire and for summoning members of the fire brigade;
- (d) efficient arrangements for obtaining, by inspection or otherwise, information required for fire-fighting purposes with respect to the character of the buildings and other property in the area of the fire authority, the available water supplies and the means of access thereto, and other material local circumstances;
- (e) efficient arrangements for ensuring that reasonable steps are taken to prevent or mitigate damage to property resulting from measures taken in dealing with fires in the area of the fire authority;
- (f) efficient arrangements for the giving, when requested, of advice in respect of buildings and other property in the area of the fire authority as to fire prevention, restricting the spread of fires, and means of escape in case of fire.

(2) For the purposes of such arrangements as are mentioned in paragraph (d) of the last foregoing subsection, any member of a fire brigade maintained in pursuance of this Act shall, if authorised in writing by the authority maintaining the brigade, have the like powers of entering premises as are conferred upon authorised officers of councils by section two hundred and eighty-seven of the Public Health Act, 1936; and accordingly that Act shall have effect as if the references in that section to an authorised officer of a council included references to a member of a fire brigade authorities as aforesaid, and as if among the purposes specified in subsection (1) of that section there were included the purposes of carrying out such arrangements as aforesaid.

Supply of water for fire fighting

13. A fire authority shall take all reasonable measures for ensuring the provision of an adequate supply of water, and for securing that it will be available for use, in case of fire.

14.—(1) For the purposes of the last foregoing section, a fire authority may enter into an agreement with statutory water undertakers for the taking by the undertakers, on such terms as to payment or otherwise as may be specified in the agreement, of such measures as may be so specified for securing that an adequate supply of water will be available in case of fire; and no water undertakers shall unreasonably refuse to enter into any agreement proposed by a fire authority under this subsection.

(2) Without prejudice to the generality of the last foregoing subsection, a fire authority, if satisfied that the existing supply of water provided by any statutory water undertakers for domestic and industrial purposes would be likely to be inadequate in case of fire, may enter into an agreement with the undertakers under the last foregoing subsection for the provision of such additional supply of water as may be specified in the agreement.

(3) The following provisions shall have effect in relation to any fire hydrant for the time being provided by a water undertaker by being fixed on any pipe of the undertaker, that is to say;

- (a) undertakers shall at the expense of the fire authority cause the situation of every fire hydrant provided by the undertakers to be plainly indicated by a notice or distinguishing mark, which may be placed on any wall or fence adjoining a street or public place;
- (b) where any such hydrant is damaged as the result of any use made of it, with the authority of the undertakers, not being a use for fire-fighting purposes or for any other purposes of a fire brigade maintained in pursuance of this Act, the fire authority shall not be liable for the cost of repairing or replacing the hydrant incurred as the result of the damage.

(4) The obligations of a water undertaker under subsections (1) to (3) of this section or any agreement under subsection (1) of this section shall be enforceable under section 18 of the Water Industries Act 1991 by the Secretary of State.

(5) Any person who uses a fire hydrant, otherwise than for fire fighting purposes or for any other purposes of a fire brigade maintained in pursuance of this Act or for any purpose authorised by the undertakers or other persons to whom the hydrant belongs, or who damages or obstructs any fire hydrant, otherwise than in consequence of its use for any such purpose as aforesaid, shall be liable on summary conviction to a fine not exceeding level 2 on the standard scale.

(6) The Secretary of State may, after consultation with the Central Fire Brigades Advisory Council constituted under this Act, make regulations providing for uniformity in fire hydrants provided by statutory water undertakers and in the notices or marks indicating their situation; and in any case to which regulations under this subsection apply such undertakers shall not be deemed to have complied with their obligations under subsection (3) of this section and the enactment's therein referred to unless the hydrants, notices or marks provided by them conform with the regulations.

15.—(1) A fire authority shall for the purposes of the last but one foregoing section have power by agreement:

- (a) to secure the use, in case of fire, of water under the control of any person other than statutory water undertakers;
- (b) to improve the access to any such water;

- (c) to lay and maintain pipes and to carry out other works in connection with the use of such water in case of fire.

(2) Subject to any agreement under the last foregoing subsection, and without prejudice to sections 57(1) and 147(1) of the Water Industries Act 1991, a fire authority may use for fire-fighting purposes any convenient and suitable supply of water, but shall be liable to pay reasonable compensation therefor.

16.—(1) Where a person proposes to carry out any works for the purpose of supplying water to any part of the area of a fire authority, he shall give notice in writing thereof to the fire authority, and the notice shall be given not less than six weeks before the works are begun.

(2) At least seven days before any works which affect any fire hydrant are begun, the authority or person by whom the works are to be executed shall give notice in writing to the fire authority:

Provided that where in a case of emergency it is not practicable for notice to be given at the time required by the foregoing provisions of this subsection, those provisions shall be deemed to have been complied with if the notice is given as early as may be.

(3) Any authority or other person who, without reasonable excuse, fails within the required period to give any notice which he is required to give under this section shall be guilty of an offence and liable, on summary conviction, to a fine not exceeding level 2 on the standard scale.

Powers of firemen
in extinguishing
fire.

30.—(3) At any fire the senior fire brigade officer present shall have the sole charge and control of all operations for the extinction of the fire, including the fixing of the positions of fire engines and apparatus, the attaching of hose to any water pipes or the use of any water supply, and the selection of the parts of the premises, objects or places, against which the water is to be directed.

(4) Any water undertakers shall, on being required by any such senior officer as is mentioned in the preceding subsection to provide a greater supply and pressure of water for extinguishing a fire, take all necessary steps to enable them to comply with such requirement and may for that purpose shut off the water from the mains and pipes in any area; and no authority or person shall be liable to any penalty or claim by reason of the interruption of the supply of water occasioned only by compliance of the water undertakers with such a requirement.

(4A) Any water undertaker which, without reasonable excuse, fails to take any step which it is obliged to take by virtue of subsection (4) of this section shall be guilty of an offence and liable, on summary conviction, to a fine not exceeding level 5 on the standard scale.

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Appendix 2

Extracts from English/Welsh water legislation (Water Industry Act 1991)

General duty to
maintain water
supply system etc.

37.—(1) It shall be the duty of every water undertaker to develop and maintain an efficient and economical system of water supply within its area and to ensure that all such arrangements have been made—

- (a) for providing supplies of water to premises in that area and for making such supplies available to persons who demand them; and
- (b) for maintaining, improving and extending the water undertaker's water mains and other pipes, as are necessary for securing that the undertaker is and continues to be able to meet its obligations under this Part.

(2) The duty of a water undertaker under this section shall be enforceable under section 18 above

- (a) by the Secretary of State; or
- (b) with the consent of or in accordance with a general authorisation given by the Secretary of State, by the Director.

(3) The obligations imposed on a water undertaker by the following Chapters of this Part, and the remedies available in respect of contraventions of those obligations, shall be in addition to any duty imposed or remedy available by virtue of any provision of this section or section 38 below and shall not be in any way qualified by any such provision.

Standards of performance
in connection with
water supply

38.—(1) For the purpose:

- (a) of facilitating the determination of the extent to which breaches of the obligations imposed by the following provisions of this Part are to amount to breaches of the duty imposed by section 37 above; or
- (b) of supplementing that duty by establishing overall standards of performance in relation to that duty,

the Secretary of State may, in accordance with section 39 below, by regulations provide for contraventions of such requirements as may be prescribed to be treated for the purposes of this Act as breaches of that duty.

(2) The Secretary of State may, in accordance with section 39 below, by regulations prescribe such standards of performance in connection with the provision of supplies of water as, in his opinion, ought to be achieved in individual cases.

(3) Regulations under subsection (2) above may provide that if a water undertaker fails to meet a prescribed standard it shall pay such amount as may be prescribed to any person who is affected by the failure and is of a prescribed description.

(4) Without prejudice to the generality of the power conferred by subsection (2) above, regulations under the subsection may—

- (a) include in a standard of performance a requirement for a water undertaker, in prescribed circumstances, to inform a person of his rights by virtue of any such regulations;
- (b) provide for any dispute under the regulations to be referred by either party to the dispute to the Director;
- (c) make provision for the procedure to be followed in connection with any such reference and for the Director's determination on such a reference to be enforceable in such manner as may be prescribed;
- (d) prescribe circumstances in which a water undertaker is to be exempted from requirements of the regulations.

(5) Where the Director determines any dispute in accordance with regulations under this section he shall, in such manner as may be specified in the regulations, give his reasons for reaching his decision with respect to the dispute.

Procedure for regulations under section 38.

39.—(1) The Secretary of State shall not make any regulations under section 38 above unless—

- (a) the Director has made to the Secretary of State a written application complying with subsection (2) below;
- (b) the Secretary of State is satisfied that a copy of the application has been served by the Director—
 - (i) on every water undertaker specified in the application; and
 - (ii) on persons or bodies appearing to the Secretary of State to be representative of persons appearing likely to be affected by the regulations;
- (c) such period as the Secretary of State considers appropriate has allowed for the making—
 - (i) by the Director; and
 - (ii) by any affected water undertaker or person or body on whom copy of the application has been served under paragraph (b)(ii) above

of representations or objections with respect to the Director's proposals and any modifications proposed by the Secretary of State; and

- (d) the Secretary of State has considered the summary mentioned in subsection (2)(bb) below, the Director's reasons for his proposals and every representation or objection which has been duly made with respect to those proposals, or any proposed modifications of those proposals, and has not been withdrawn.

(1A) Before making an application to the Secretary of State under this section the Director shall arrange for such research as he considers appropriate with a view to discovering the views of a representative sample of persons likely to be affected and consider the results.

(2) An application made by the Director to the Secretary of State complies with this subsection if it—

- (a) sets out draft provisions proposed by the Director for inclusion in regulations under section 38 above;
- (b) specifies the water undertaker or undertakers in relation to which it is proposed those provisions should apply; and
- (bb) is accompanied by a written summary of the results of the research carried out in accordance with subsection (1A) above; and
- (c) summarises the Director's reasons for his proposals.

(3) The Secretary of State shall not make any regulations under section 38 above except where—

- (a) the only provisions of the regulations are the provisions proposed by the Director in his application or those provisions with such modifications as the Secretary of State considers appropriate; and
- (b) each of the modifications (if any) of the Director's proposals to which effect is given by the regulations is a modification the proposal to make which has been notified—
 - (i) to the Director; and
 - (ii) to any water undertaker appearing to the Secretary of State to be likely to be affected by the modifications.

Duty to comply with water main requisition.

41.—(1) It shall be the duty of a water undertaker (in accordance with section 44 below) to provide a water main to be used for providing such supplies of water to premises in a particular locality in its area as (so far as those premises are concerned) are sufficient for domestic use, if—

- (a) the undertaker is required to provide the main by a notice served on the undertaker by one or more of the persons who under subsection (2) below are entitled to require the provision of the main for that locality;
- (b) the premises in that locality to which those supplies would be provided by means of that main are—
 - (i) premises consisting in buildings or part of buildings; or

(ii) premises which will so consist when proposals made by any persons for the erection of buildings or parts of buildings are carried out; and

(c) the conditions specified in section 42 below are satisfied in relation to that requirement.

(2) Each of the following persons shall be entitled to require the provision of a water main for any locality, that is to say—

(a) the owner of any premises in that locality;

(b) the occupier of any premises in that locality;

(c) any local authority within whose area the whole or any part of that locality is situated;

(d) where the whole or any part of that locality is situated in a new town, within the meaning of the New Towns Act 1981—

(i) the Commission for the New Towns; and

(ii) the Development Board for Rural Wales or the development corporation for the new town, according to whether or not the new town and is situated within the area for which that Board is for the time being responsible;

and

(iii) where the whole or any part of that locality is situated within an area designated as an urban development area under Part XVI of the Local Government, Planning and Land Act 1980, the urban development corporation.

(3) The duty of a water undertaker under this section to provide a water main shall be owed to the person who required the provision of the main, or as the case may be, to each of the persons who joins in doing so.

(4) Where a duty is owed by virtue of subsection (3) above to any person, any breach of that duty which causes that person to sustain loss or damage shall be actionable at the suit of that person; but, in any proceedings brought against a water undertaker in pursuance of this subsection, it shall be a defence for the undertaker to show that it took all reasonable steps and exercised all due diligence to avoid the breach.

(5) In this section "local authority", in relation to the Inner Temple and the Middle Temple, includes, respectively, the Sub-Treasurer of the Inner Temple and the Under-Treasurer of the Middle Temple.

Supplies for
non-domestic
purposes.

55.—(1) This section applies where the owner or occupiers of any premises in the area of a water undertaker requests the undertaker to provide a supply of water to those premises and—

(a) the premises are premises which do not consist in the whole or any part of a building; or

(b) the requested supply is for purposes other than domestic purposes.

(2) Where this section applies, it shall be the duty of the water undertaker, in accordance with such terms and conditions as may be determined under section 56 below—

(a) to take any such steps as may be so determined in order to enable the undertaker to provide the requested supply; and

(b) having taken any such steps, to provide that supply.

(3) A water undertaker shall not be required by virtue of this section to provide a new supply to any premises, or to take any steps to enable it to provide such a supply, if the provision of that supply or the taking of those steps would—

(a) require the undertaker, in order to meet all its existing obligations to supply water for domestic or other purposes, together with its probable future obligations to supply buildings and parts of buildings with water for domestic purposes, to incur unreasonable expenditure in carrying out works; or

(b) otherwise put at risk the ability of the undertaker to meet any of the existing or probable future obligations mentioned in paragraph (a) above.

(4) A water undertaker shall not be required by virtue of this section to provide a new supply to any premises, or to take any steps to enable it to provide such a supply, if there is a contravention in relation to the water fittings used or to be used in connection with—

(a) the supply of water to those premises; or

(b) the use of water in those premises,

of such of the requirements of regulations under section 74 below as are prescribed for the purposes of this subsection.

(5) Where—

(a) a request has been made by any person to a water undertaker for the purposes of subsection (2) above; and

(b) the steps which the undertaker is required to take by virtue of that request include steps for the purpose of obtaining any necessary authority for, or agreement to, any exercise by the undertaker of any of its powers or the carrying out by the undertaker of any works.

the failure of the undertaker to acquire the necessary authority or agreement shall not affect the liability of that person, under any terms or condition in accordance with which those steps are taken, to reimburse the undertaker in respect of some or all of the expenses incurred by the undertaker in taking those steps.

(6) Nothing in this section shall impose any duty on a water undertaker to provide a supply of water to any premises during any period during which it is reasonable for the supply of water to those premises to be cut off or reduced for the purposes of carrying out of any necessary works.

(7) The duty of a water undertaker to supply water under this section at the request of any person, and any terms and condition determined under section 56 below in default of agreement between the undertaker and that person, shall have effect as if contained in such an agreement.

(8) Except so far as otherwise provided by the terms and conditions determined under section 56 below in relation to any supply, the duties of a water undertaker under this section shall have effect subject to the provisions of sections 60 to 63 and 75 below.

Duty to provide a supply of water etc. for fire-fighting.

57.—(1) It shall be the duty of a water undertaker to allow any person to take water for extinguishing fires from any of its water mains or other pipes on which a fire-hydrant is fixed.

(2) Every water undertaker shall, at the request of the fire authority concerned, fix fire-hydrants on its water mains (other than its trunk mains) at such places as may be most convenient for affording a supply of water for extinguishing any fire which may break out within the area of the undertaker.

(3) It shall be the duty of every water undertaker to keep every fire hydrant fixed on any of its water mains or other pipes in good working order and, for that purpose, to replace any such hydrant when necessary.

(4) It shall be the duty of a water undertaker to ensure that a fire authority has been supplied by the undertaker with all such keys as the authority may require for the fire-hydrants fixed on the water mains or other pipes of the undertaker.

(5) Subject to section 58(3) below, the expenses incurred by a water undertaker in complying with its obligations under subsections (2) to (4) above shall be borne by the fire authority concerned.

(6) Nothing in this section shall require a water undertaker to do anything which it is unable to do by reason of the carrying out of any necessary works.

(7) The obligations of a water undertaker under this section shall be enforceable under section 18 above by the Secretary of State.

(8) In addition, where a water undertaker is in breach of its obligations under this section, the undertaker shall be guilty of an offence and liable:

(a) on summary conviction, to a fine not exceeding the statutory maximum;

(b) on conviction on indictment to a fine.

(9) In any proceedings against any water undertaker for an offence under subsection (8) above it shall be a defence for that undertaker to show that it took all reasonable steps and exercised all due diligence to avoid the commission of the offence.

(10) In this section "fire authority" has the same meaning as in the Fire Services Act 1947.

Specially requested
fire-hydrants.

58.—(1) A water undertaker shall, at the request of the owner or occupier of any factory or place of business, fix a fire-hydrant, to be used for extinguishing fires and not other purposes, at such place on any suitable water main or other pipe of the undertaker as it is near as conveniently possible to that factory or place of business.

(2) For the purposes of subsection (1) above a water main or other pipe is suitable, in relation to a factory or place of business, if—

- (a) it is situated in a street which is in or near to that factory or place of business; and
- (b) it is of sufficient dimensions to carry a hydrant and is not a trunk main.

(3) Subsection (5) of section 57 above should not apply in relation to expenses incurred in compliance, in relation to a specially requested fire-hydrant, with the obligations under subsections (3) and (4) of that section.

(4) Any expenses incurred by a water undertaker

- (a) in complying with its obligations under subsection (1) above; or
- (b) in complying, in relation to a specially requested fire-hydrant, with its obligations under section 57(3) and (4) above,

shall be borne by the owner or occupier of the factory or place of business in question, according to whether the person who made the original request for the hydrant did so in his capacity as owner or occupier.

(5) Subsection (6) to (9) of section 57 above shall apply in relation to the obligations of a water undertaker under this section as they apply to that obligation of a water undertaker under that section.

(6) In this section—

“factory” has the same meaning as in the Factories Act 1961; and

“specially requested fire-hydrant” means a fire-hydrant which

- (a) is fixed on a water main or other pipe of a water undertaker; and
- (b) was fixed on that main or pipe (whether before or after it became such a main or pipe under the Water Act 1989) in pursuance of a request made by the owner or occupier of a factory or place of business.

Duties of undertakers
as respects constancy
and pressure.

65.—(1) Subject to the following provisions of this section, it shall be the duty of a water undertaker to cause the water in such of its water mains and other pipes as

- (a) are used for providing supplies of water for domestic purposes; or;
- (b) have fire-hydrants fixed on them,

to be laid on constantly and at such a pressure as will cause the water to reach to the top of the topmost storey of every building within the undertaker's area.

(2) Nothing in subsection (1) above shall require a water undertaker to provide a supply of water at a height greater than that to which it will flow by gravitation through its water mains from the service reservoir or tank from which that supply is taken.

(3) For the purposes of this section a water undertaker shall be entitled to choose the service reservoir or tank from which any supply is to be taken.

(4) Nothing in subsection (1) above shall impose any duty on a water undertaker to maintain the constancy or pressure of any supply of water during any period during which it is reasonable for that supply to be cut off or reduced for the purposes of the carrying out of any necessary works.

(5) The Secretary of State may by order modify the application of the preceding provisions of this section in relation to any water undertaker.

(6) The Secretary of State shall not make an order under subsection (5) above except—

- (a) in accordance with Schedule 5 to this Act; and
- (b) on an application made in accordance with that Schedule by the Director or by the water undertaker in relation to which the order is made.

(7) Subject to subsection (6) above, the power of the Secretary of State to make an order under subsection (5) above shall be exercisable by statutory instrument subject to annulment in pursuance of a resolution of either House of Parliament.

(8) An order under subsection (5) above may

- (a) require the payment of compensation by a water undertaker to persons affected by the order;
- (b) make different provision for different cases, including different provision in relation to different persons, circumstances or localities; and
- (c) contain such supplemental, consequential and transitional provision as the Secretary of State considers appropriate.

(9) The obligations of a water undertaker under this section shall be enforceable under section 18 above by the Director.

(10) In addition, where a water undertaker is in breach of a duty under this section, the undertaker shall be guilty of an offence and liable—

- (a) on summary conviction, to a fine not exceeding the statutory maximum;
- (b) on conviction on indictment, to a fine.

(11) In any proceedings against any water undertaker for an offence under subsection (10) above it shall be a defence for that undertaker to show that it took all reasonable steps and exercised all due diligence to avoid the commission of the offence.

Charging for emergency use of water.

147.—(1) Notwithstanding anything in section 142 or in any scheme under section 143 or in any agreement as to charges in respect of any supply of water, no charge may be made by any water undertaker in respect of—

- (a) water taken for the purpose of extinguishing fires or taken by a fire authority for any other emergency purposes;
- (b) water taken for the purpose of testing apparatus installed or equipment used for extinguishing fires or for the purpose of training persons for fire-fighting; or
- (c) the availability of water for any purpose mentioned in paragraph (a) or (b) above.

(2) This section shall not prevent the making of charges in respect of work carried out at the request of or for the benefit of any person receiving a supply of water for the purposes mentioned in paragraph (a) or (b) of subsection (1) above.

(3) This section shall not have the effect, where any water is used or made available for any of the purposes mentioned in paragraph (a) or (b) of subsection (1) above, or requiring a reduction in the charges imposed in respect of the provision for other purposes of the supply from which that water is taken.

(4) In this section “fire authority” has the same meaning as in the Fire Services Act 1947.

Offences of interference with works etc.

174.—(1) Subject to subsection (2) below, if any person without the consent of the water undertaker—

- (a) intentionally or recklessly interferes with any resource main, water main or other pipe vested in any water undertaker or with any structure, installation or apparatus belonging to any water undertaker; or
- (b) by any act or omission negligently interferes with any such main or other pipe or with any such structure, installation or apparatus so as to damage it or so as to have an effect on its use or operation,

that person shall be guilty of an offence and liable, on summary conviction, to a fine not exceeding level 3 on the standard scale.

(2) A person shall not be guilty of an offence under subsection (1) above—

- (a) by reason of anything done in an emergency to prevent loss or damage to persons or property; or

(b) by reason of his opening or closing the stopcock fitted to a service pipe by means of which water is supplied to any premises by a water undertaker if—

(i) he has obtained the consent of every consumer whose supply is affected by the opening or closing of that stopcock or, as the case may be, of every other consumer whose supply is so affected; and

(ii) in the case of opening a stopcock, the stopcock was closed otherwise than by the undertaker.

(3) Any person who, without the consent of the water undertaker—

(a) attaches any pipe or apparatus—

(i) to any resource main, water main or other pipe vested in a water undertaker; or

(ii) to any service pipe which does not belong to such an undertaker but which is a pipe by means of which water is supplied by such an undertaker to any premises;

(b) makes any alteration in a service pipe by means of which water is so supplied, or in any apparatus attached to any such pipe; or

(c) subject to subsection (4) below, uses any pipe or apparatus which has been attached or altered in contravention of this section,

shall be guilty of an offence and liable, on summary conviction, to a fine not exceeding level 3 on the standard scale.

(4) In proceedings against any person for an offence by virtue of paragraph (c) of subsection (3) above it shall be a defence for that person to show that he did not know, and had no grounds for suspecting, that the pipe or apparatus in question had been attached or altered as mentioned in that subsection.

(5) If any person willfully or negligently injures or suffers to be injured any water fitting belonging to a water undertaker, he shall be guilty of an offence and liable, on summary conviction, to a fine not exceeding level 1 on the standard scale.

(6) An offence under subsection (1) or (3) above shall constitute a breach of a duty owed to the water undertaker in question; and any such breach of duty which causes the undertaker to sustain loss or damage shall be actionable at the suit of the undertaker.

(7) The amount recoverable by virtue of subsection (6) above from a person who has committed an offence under subsection (3) above shall include such amount as may be reasonable in respect of any water wasted, misused or improperly consumed in consequence of the commission of the offence.

(8) A water undertaker may—

(a) do all such work as is necessary for repairing any injury done in contravention of subsection (5) above; and

(b) recover the expenses reasonably incurred by the undertaker in doing so from the offender summarily as a civil debt.

(9) In this section "consumer" and "water fitting" have the same meanings as in Part III of this Act; and in subsection (1) above the references to apparatus belonging to a water undertaker do not include references to any meter which belongs to such an undertaker and is used by it for the purpose of determining the amount of any charges which have been fixed by the undertaker by reference to volume.

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Appendix 3

Points requiring consideration when drafting local arrangements

When entering into discussions on local arrangements the following points are a guide to suggested topics.

- 1 A framework for liaison at all levels and circumstances including:
 - a) Routine liaison and contact points.
 - b) Emergency liaison including procedures for increasing flows during emergencies.
 - c) Liaison to facilitate review of both routine and emergency performance.
- 2 Procedures for dealing with planning, new developments and redevelopment sites including sharing of information and consulting with Local Authorities.
- 3 Procedures for the notification of intention to carry out work both temporary and permanent changes including how previous significant changes not notified should be managed.
- 4 Planning hydrant installations on existing, new, renewed and rehabilitated mains.
- 5 Water Company washouts.
- 6 Installation, inspection and adoption procedures for hydrants.
- 7 Hydrant inspections and tests.
- 8 Hydrant maintenance.
- 9 Flow requirements for fire fighting and flow testing.
- 10 Use of water for fire fighting including procedures for notification of incidents that could impinge on water quality.
- 11 Statutory notices.
- 12 Use of hydrants for non-fire fighting purposes, including illegal use and how this may be controlled.
- 13 Charges and guarantees for work undertaken by Water Companies.
- 14 Abandonment of hydrants.
- 15 Disputes procedure.

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Appendix 4

Points requiring consideration when securing the provision of water for fire fighting

The Fire Service is required to secure water from either public water mains or other sources such as ponds, lakes, rivers etc. to effectively fight fires under normal circumstances. For fires beyond the capability of a single hydrant the following should be considered:

1

fire service considerations

- 1.1 The current supplies of water available from the water undertakers in close proximity to the risk under all reasonably foreseeable demand circumstances.
- 1.2 The current supplies of water available from the water undertakers within the parameters of a fire service water relay.
- 1.3 The supplies that could be made available by the water undertakers increasing the pressure/flow in the cases of 1.1 and 1.2, bearing in mind the timescales of increasing the flows and the methodology.
- 1.4 The current supplies of open water available in close proximity to the risk, bearing in mind the seasonal nature of some open water supplies.
- 1.5 The current supplies of open water available within the parameters of a fire service relay, bearing in mind the seasonal nature of some open water supplies.
- 1.6 Other alternative methods such as ferrying water.

2

water company considerations

Water companies should consider the following points when assessing how best they can assist in closing the gap.

- 2.1 Fire Brigade flow requirements.
- 2.2 Risk area/address.
- 2.3 System capability with no alterations.
- 2.4 System capability with alterations.
- 2.5 System sustainability in hours and procedures to be taken when service reservoirs are at risk of being drained.
- 2.6 Customers/address that will fall below target pressure levels in the event of drawing maximum flow.
- 2.7 Sensitive Customers e.g. Dialysis.
- 2.8 Valving schedules.
- 2.9 Is the area pressure reduced and by what type of valve?

3

joint considerations for securing water

- 3.1 Maximise the availability of water through the existing distribution system and trunk mains systems to a point as close as possible to the risk area or site allowing the Fire Service to operate defined apparatus taking into account the risk of discoloured water.
- 3.2 Consider modification to the configuration of the distribution system to increase the volume of water available.
- 3.3 Identify the location of hydrants, which may need flow restriction devices.
- 3.4 Water Companies should be willing to consider alternative systems for connecting Fire Service equipment to the distribution system, taking regard of the need to safeguard the health of the customers.
- 3.5 Establish an emergency call out procedure between the two parties, which minimises the response time and maximises the availability of water in the area.
- 3.6 Minimise the effects of losses from the point of delivery through the Fire Service apparatus.
- 3.7 Consider sprinkler systems.

Appendix 5

Guidelines on flow requirements for fire fighting

The following flows represent the ideal requirements (see Section 5.1 and Appendix 4 for guidance on how these flows should be considered) on new developments and during permanent system changes.

1

housing

Housing developments with units of detached or semidetached houses of not more than two floors should have a water supply capable of delivering a minimum of eight litres per second through any single hydrant.

Multi occupied housing developments with units of more than two floors should have a water supply capable of delivering a minimum of 20 to 35 litres per second through any single hydrant on the development.

2

transportation

Lorry/coach parks - multi-storey car parks - service stations—

All of these amenities should have a water supply capable of delivering a minimum of 25 litres per second through any single hydrant on the development or within a vehicular distance of 90 metres from the complex.

3

industry

In order that an adequate supply of water is available for use by the Fire Authority in case of fire it is recommended that the water supply infrastructure to any industrial estate is as follows with the mains network on site being normally at least 150 mm nominal diameter—

Up to one hectare 20 litres per second.

One to two hectares 35 litres per second.

Two to three hectares 50 litres per second.

Over three hectares 75 litres per second.

4

shopping, offices, recreation and tourism

Commercial developments of this type should have a water supply capable of delivering a minimum flow of 20 to 75 litres per second to the development site.

5

education, health and community facilities

5.1 Village halls—

Should have a water supply capable of delivering a minimum flow of 15 litres per second through any single hydrant on the development or within a vehicular distance of 100 metres from the complex.

5.2 Primary schools and single storey health centres—

Should have a water supply capable of delivering a minimum flow of 20 litres per second through any single hydrant on the development or within a vehicular distance of 70 metres from the complex.

5.3 Secondary schools, colleges, large health and community facilities—

Should have a water supply capable of delivering a minimum flow of 35 litres per second through any single hydrant on the development or within a vehicular distance of 70 metres from the complex.

Appendix 6

Model disputes procedure

- 1 In the event of a dispute between either party, attempts in the first instance must be made to resolve the matter locally at the appropriate level.
- 2 If local liaison fails to satisfy either party and without prejudice to either party's legal rights and obligations, the matter may then be referred to the Regional Liaison Group for joint group resolution.
- 3 If either party remains aggrieved at the guidance given, they may refer the matter to the National Liaison Group. The role of the National Group is not to arbitrate but to facilitate resolution at the Regional Level by encouraging constructive discussion and debate so that they are able to resolve their own disputes.
- 4 During all the above stages, in the interest of achieving timely and satisfactory resolution, publicity should be avoided. Any media involvement has the risk of either distortion through lack of all the facts or being exploited by pressure groups to further their own interests.

Appendix 7

Glossary of terms

CACFOA	Chief and Assistant Chief Fire Officers' Association.
Cross contamination	Introduction of water of unknown quality into the water mains network.
DEFRA	Department for Environment, Food and Rural Affairs.
DG reference levels of service	Standards of customer service, e.g. minimum pressure at the boundary to a domestic customers property, set by the Regulator of the Water Industry.
Director General	Director General of Water Services who is the head of an independent body set up by the Government to regulate the Water Industry.
DTLR	Department for Transport, Local Government and the Regions.
Ferrying water	Transporting water from a remote source to the scene of an emergency by the use of fire service tenders or water carriers.
Fire authority	Local Government organisation responsible, in the area where it discharges its functions, for the maintenance of a Fire and Rescue Service.
Fire brigades	Organisations under the control of a Local Authority, responsible for undertaking the functions and activities associated with a Fire and Rescue Service.
Fire hydrant	A valve allowing immediate connection to a water main, usually for Fire Service purposes.
Fire hydrant installation	Includes the fire hydrant, pit chamber, surface box, post and plate and where the hydrant is offset from the main, the interconnecting pipe work.
Fire service	Generic term for Local Authority Fire Brigades.
Guaranteed standards scheme	Standards agreed by the Director General which results in a payment to customers where they are not met by the Water Company.
Lead Officer	Nominated Fire Service or Water Company Officer responsible for inter-agency consultation and liaison.
LGA	Local Government Association. Representative body of all Local Authorities including Fire Authorities in England and Wales.
Local authority	As respects England and Wales, the Council of a County Borough, London Borough or County District.
LPC	Loss Prevention Council.

Microbiological quality of the water	Extent to which micro-organisms have affected the quality of mains water.
Multi occupied housing development	An area of private, domestic dwellings.
Normal demand conditions	Anticipated water consumption requirements.
Ofwat	Office of the Water Services under the Director General.
Permanent system changes	Changes to the configuration of the mains system by opening or closing of valves or the installation of apparatus, which is intended to remain in place for a long period of time.
Secretary of State	Government appointed Minister with responsibilities, e.g. for home affairs or water services.
Service reservoir	Storage tank containing water ready to drink and protected from contamination by a roof and lockable covers.
Short term demands	Temporary increase in water consumption requirements, above normal demand conditions.
Water Tender	Name given to a water carrying fire fighting appliance.
Water Carrier	A vehicle for conveying large quantities of water to a fire where it is difficult to obtain and adequately supply water for fire-fighting purposes.
Water Company	A company responsible for the provision of clean water to the customers in a defined geographic area. Some companies are responsible for supplying water only and others for removing and treating the sewage as well.
Water Industry	The Water Companies responsible for supplying water in England and Wales.
Water relay	The transportation of water from a remote supply, to the point of use at an emergency incident by the use of Fire Service pumps and hose.
Water UK	Trade Association comprising all of the Water Companies in the UK.