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**TYNE AND WEAR FIRE AND RESCUE AUTHORITY  
EMERGENCY PLANNING UNIT**

***Committee Report***

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**Meeting : CIVIL CONTINGENCIES COMMITTEE : 18 JANUARY 2010**

**Subject : RESERVOIR INUNDATION PLANNING**

***Report of the Chief Emergency Planning Officer***

**1. INTRODUCTION**

- 1.1 The purpose of this report is to bring Members up to date with current issues relating to Reservoir Inundation Planning. It summarises current direction from the Cabinet Office (CO), and outlines implications for the Local Resilience Forum (LRF) and Local Authorities (LAs).
- 1.2 Concerns over the Ulley reservoir in Yorkshire in the 2007 floods raised the issue of reservoir safety, and led to recommendations in the Pitt Report. LA's have now been directed to develop plans based on reservoir failure as part of their responsibilities under the Civil Contingencies Act 2004. The scenario identified for planning purposes is a worst case failure of a dam, resulting in a sudden release of water.

**2. BACKGROUND**

- 2.1 The Reservoirs Act 1975 (RA75) currently provides regulation for all large raised reservoirs in England and Wales. Under the Act, a large raised reservoir is defined as a body of water which is capable of holding >25,000m<sup>3</sup> of water (about 5 million gallons) above ground level. Some reservoirs supply water for household and industrial use; others serve other purposes, for example as fishing lakes or leisure facilities,
- 2.2 Ministerial Direction is expected to mandate on-site planning for all reservoirs under the RA75. Draft guidelines for the production of such on-site plans have already been issued by Defra (production of these plans is expected to be the responsibility of the reservoir owner).
- 2.3 In response to the Pitt Recommendations and impending changes in legislation, LRF's have been directed under the Civil Contingencies Act 2004 to write off site plans for these large reservoirs in order to deal with an emergency that may occur. In accordance with Cabinet Office direction, the prioritisation of off site planning will be determined by a National Assessment Group for all large raised Reservoirs. They will be categorised as 'low' or 'high' risk, and will be ranked in order of priority
- 2.4 There are some >25,000m<sup>3</sup> reservoirs in the Northumbria LRF area; some are owned by Northumbria Water and the remainder are privately owned.

All of these are located within Northumberland. LAs are shortly expected to receive specific direction from the CO in due course outlining which reservoirs will be subject to generic or specific planning, depending on priority of risk.

- 2.5 Defra has provided guidance which includes templates for both generic and specific plans. It is understood that 'low risk' reservoirs will be covered by a locally produced generic plan, whereas reservoirs identified as 'high risk' will require an off site plan specific to that site.
- 2.6 In light of the anticipated enactment of the Flood and Water Management Bill later this year, reservoir regulation may soon apply to all raised reservoirs >10,000m<sup>3</sup>. This could mean significantly more sites would require inclusion in generic planning and possibly even specific plans. This would increase the burden on LAs, both in terms of workload and budget.

### **3 EMERGENCY PLANNING**

- 3.1 There have been no deaths in the UK from flooding caused by dam collapse for 85 years, following the introduction of reservoir safety legislation in 1930, 1975 and 2003; and the likelihood of a dam failure is considered to be 'very low'. The effects of reservoir flooding will not necessarily be any different from other types of flooding, such as that caused by wet weather. In most cases reservoir emergencies are dealt with without any need to empty the reservoir, or water is emptied in a controlled way. However it is important that arrangements are in place so that emergency services can respond effectively in an emergency, which could cause flooding following an uncontrolled release of water from a reservoir.
- 3.2 Emergency planning for flooding from reservoirs has three parts:
  - An inundation map. Prepared by the Environment Agency, this identifies the extent and severity of flooding which could result from an uncontrolled release of water. It should be stressed that the maps are not a prediction of what will happen, they are a tool for emergency planners to consider for example where to evacuate from and to.
  - An on-site reservoir emergency plan. Prepared by the undertaker, this sets out what they will do in an emergency to try to contain and limit the effects of the incident. It will include a plan for communicating with external organisations, mainly the emergency services.
  - An off-site reservoir emergency plan. Prepared by the relevant local authority within each local resilience forum (LRF), this sets out what the emergency services will do to warn and protect people and property downstream in the event of an incident which could lead to dam failure.

- 3.3 It is expected that Ministerial Direction will require reservoirs categorised as 'high risk' to have an on-site plan, which will be the responsibility of the reservoir owner. Direction on the creation of on-site plans has already been issued by Defra.

#### **4 OFF-SITE PLANNING**

- 4.1 Production of off site plans will be the responsibility of the LA. For Northumbria LRF, all of the >25,000m<sup>3</sup> reservoirs are expected to be in Northumberland. This will comprise both generic (for 'low' risk) and specific (for 'high' risk) plans, for which templates have been issued by the CO. Direction will be provided by the national assessors on which reservoirs will require specific plans, according to priority. It is likely that large reservoirs will require a specific plan, as well as 'cascade' type reservoirs. In the interim, however, generic planning may commence once prioritisation has been allocated in advance of inundation mapping being available.
- 4.2 There will need to be close liaison with neighbouring councils which could be affected by a reservoir breach, in the development of the off site plans. This is likely to have implications for some Tyne and Wear councils.
- 4.3 The Environment Agency (EA) is due to publish non-Protectively marked inundation information on its website for members of the public to ascertain whether they are likely to be affected by reservoir flooding. The instructions on the website are likely to identify the LA as the Point of Contact for any related queries for members of the public. The anticipated launch of this project is in summer 2010.
- 4.4 Whilst the requirement to produce plans will not come into effect until 2010, EA advice is to start preparing plans now. It is possible that off-site planning activity will run concurrently with on-site planning activity, rather than consecutively, in order to meet the required timescales for completion.

#### **5 WARNING AND INFORMING**

- 5.1 A public information strategy is being developed at CO, whereby Warning and Informing packages are due to be issued to the LRF. The LRF will also have the responsibility of running a public information programme (eg. leafleting, media messaging etc.) to provide advice to residents and businesses in flood inundation areas.
- 5.2 This must be carefully considered once an Alert system is agreed. It is not expected that reservoir owners will be responsible for Warning and Informing outside the initial response to an incident where the off-site plan may have to be triggered. This issue, however, is being challenged by the Local Government Association (LGA) who maintains that the site owner should be responsible.
- 5.3 Northumbria LRF has agreed that the public information aspects would be coordinated by the LRF Public Communications Sub-Group.

- 5.4 Background information relating to reservoir planning is currently available on the Environment Agency (EA) website. The EA is also due to publish more non-Protectively Marked inundation information on its website for members of the public to ascertain whether they are likely to be affected by reservoir flooding. The instructions on the website are likely to identify the LA as the Point of Contact for any related queries for members of the public.
- 5.5 The national public information strategy must be aligned with local information to ensure that the LA is adequately equipped to deal with enquiries from members of the public. Any local communications programme would require significant research, resource and funding. This may be a consideration for the LRF Public Communications Sub-Group.
- 5.6 The LA is likely to carry the burden for response to the public following any publication of inundation information on the EA website. The launch of the website later in the summer may trigger public requests for information which will have to be handled by the LA. The LA may also find itself in a position where it is responsible for Warning and Informing residents in an inundation zone outside their LA area of responsibility.

## **6 FUNDING FOR PLANNING**

- 6.1 Planning for reservoirs is a new burden, and the work associated with this is new to emergency planners. It is clear that the planning, validation and maintenance of the plans will require additional resource and funding based on current projections submitted to CO. The LGA view is that full cost recovery should be put in place using the COMAH regulations as a model.
- 6.2 The TWEPU CEPO, as an LGA Adviser, proposed some fundamental principles that should underpin such a cost recovery model, which the LGA have adopted in full; together with further recommendations made relating to warning and informing. Should the COMAH (Control of Major Accident Hazards Regulations) model be followed, reservoir owners would carry the burden of costs for on- and off-site planning, as well as for the costs involved in Warning and Informing the affected public.
- 6.3 Prior to the enactment of the Flood and Water Management Bill, it is expected that planning for the top '100' or so priority >25,000m<sup>3</sup> sites will be subsidised by the CO, probably by way of a subsidy payment per site. This would serve only as a 'one-off' payment for the production of a specific plan; the future exercising, maintenance, as well as any public information programme would likely be an additional burden to the LA.
- 6.4 It has been suggested that funding should be allocated to LRFs based on the number of priority sites in their area, and would be distributed to a lead LA for distribution. The allocation and method of distribution for funding the LRFs / LAs remains a consideration for the CO.
- 6.5 As it currently stands, the overall funding for the production, maintenance and exercising of the Reservoir Inundation Project, together with the public

information programme, will be a long term additional burden to the LA budget.

## **7 CONCLUSIONS**

### **7.1 Key Points:**

- There are reservoir sites >25,000m<sup>3</sup> in Northumbria LRF area awaiting prioritisation from National Risk Assessment Team.
- The implications for the Tyne and Wear councils, when the Flood and Water Management Bill is enacted, have yet to be determined.
- Generic and Specific off-site plans are to be produced by Local Authorities. There is an implied deadline for a generic plan to be prepared by summer 2010.
- The Public Warning and Informing programme will be an LA responsibility. Reservoir Inundation (Planning training and exercising, and Warning and Informing) is likely to be a long term budgetary commitment for LAs.
- Following adoption of the Flood and Water Management Bill, reservoir regulation may be extended to apply to all raised reservoirs >10,000m<sup>3</sup> which will further increase the workload on emergency planners.

7.2 The key points arising in this report have been reported to the Northumbria LRF.

## **8 RECOMMENDATIONS**

8.1 Members are asked to note this report; to note the CEPO's contribution in establishing national cost recovery principles for this new burden; and to receive further reports on this issue as appropriate.

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## **BACKGROUND PAPERS**

- Flood Emergencies Programme – Reservoir Inundation preparedness: Forward Look – 14 December 2009

*Copies of this document are available in the Emergency Planning Unit.*

