

Chapter 15: Radiation Monitoring Co-ordination

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15.1 Scope

- 15.1.1 Extensive resources and equipment are available to undertake environmental and personal radiation monitoring following an accident at a civil nuclear site. These belong to the various organisations and agencies forming NEPLG, and are part of their well established emergency plans. Hence, the arrangements are regularly tested and maintained in a state of readiness.
- 15.1.2 In the light of experience in testing these plans in exercises, a review of the co-ordination radiation monitoring arrangements was undertaken at the request of NEPLG. As a result of this review, NEPLG agreed in October 1997 that the National Radiological Protection Board (NRPB) should co-ordinate the activities of organisations undertaking such radiation monitoring. NEPLG has subsequently given further consideration to these arrangements in the light of experience of operation in exercises, and agreed that they continue to provide a sound basis for monitoring co-ordination following a nuclear accident.
- 15.1.3 This chapter concentrates on the principles that need to be applied to, and the practical arrangements involved in, the co-ordination of radiation monitoring following an accident at a civil nuclear site. Additional information is contained in the NRPB booklet "Co-ordination of environmental monitoring in the event of a nuclear accident"⁸.

15.2 Responsibilities

- 15.2.1 Radiation monitoring during and after a nuclear emergency would play an important role in providing an input to decision making and in the provision of information to the public and to official bodies. Monitoring undertaken might relate to the immediate impact of the accident on people and the potential future impact resulting from environmental contamination.
- 15.2.2 Within the UK, responsibilities for radiation monitoring in the event of a nuclear emergency lie with a number of organisations and may, for example, derive from: a legislative requirement; an extension of responsibilities under non-emergency conditions; or the recommendations of national reviews of emergency arrangements. Principal responsibilities are as follows:
- (a) Licensed nuclear operators would typically undertake monitoring out to 15 or 40 km from the affected site, depending on the nature of the site, and in accordance with the emergency plans for that site. In the case of a site undergoing decommissioning, the operator's monitoring distance would typically be out to around 10 km.
 - (b) The Food Standards Agency is responsible for arrangements for monitoring and food sampling, and assessing the results to define any area to be subject to food advice and restrictions.

- (c) The Environment Agency in England and Wales, or the Scottish Environment Protection Agency in Scotland, have contractors who carry out environmental monitoring programmes in support of their regulatory responsibilities. These programmes include: surveys of radiation levels and radiochemical and spectrometric analysis of samples collected in the vicinity of nuclear sites and certain industrial premises; radiochemical analysis of raw water sources which are used for drinking water supplies; and monitoring of radioactive fallout in air and rain. In Scotland, SEPA also carries out routine monitoring of the food-chain in support of its regulatory activities.
- (d) Local Authorities are responsible for ensuring the continued wholesomeness of private drinking water supplies serving multiple premises. Environmental Health Officers are principally responsible for monitoring food in the retail chain. Trading Standards Officers are responsible for screening potentially contaminated non-food goods.
- (e) The health services locally are responsible for activating local facilities for monitoring in relation to people, and for co-ordinating those activities.
- (f) Water supply companies and authorities are responsible for ensuring the potability of drinking water supplied to their customers – including its radioactive content – and identifying potentially contaminated water supplies.
- (g) The Radioactive Incident Monitoring Network (RIMNET), operated by Department of Environment, Food and Rural Affairs, would continue to take readings from 94 permanently operating environmental gamma dose rate monitoring stations located throughout the UK. RIMNET is the agreed national resource for collection, collation, storage and dissemination of monitoring information which would be placed on the system by approved suppliers.
- (h) The Ministry of Defence would make various equipment and manpower available for monitoring and general support. It would assist with the presentation of monitoring outputs by making them available as small scale maps in hard copy, or as graphical computer representations of the monitoring data base.
- (i) NRPB is responsible for co-ordinating the activities of organisations undertaking radiation monitoring. It is also equipped to undertake a limited amount of environmental monitoring and to provide support to the local health authority with personal monitoring.

15.3 Principles

15.3.1 NEPLG agreed at its Summer 2000 meeting that the following principles should apply to monitoring co-ordination arrangements:

- (a) The monitoring co-ordination arrangements should consist of a Monitoring Co-ordination Team, comprising technically qualified staff, which would utilise all available environmental and personal radiation monitoring resources made available to it, in order to meet the monitoring requirements which would arise from issues to be addressed by the off-site facility Co-ordinating Group (CG). Three functional levels would be relevant in the context of monitoring co-ordination:
 - * the off-site facility CG, operating at the strategic level and defining the issues requiring action and their priorities;
 - * the Monitoring Co-ordination Team, operating at the tactical level, taking the issues and priorities from the off-site facility CG and allocating tasks to;
 - * the Monitoring Organisations, at the operational level, carrying out monitoring related tasks and feeding back to the other levels.
- (b) In an emergency, the best use should be made of available monitoring resources. Monitoring should be carried out in a co-operative and co-ordinated manner, rather than a command and control environment. Organisations making their resources available would do so voluntarily and in the light of their own sets of constraints, which might include statutory monitoring responsibilities.
- (c) Monitoring co-ordination would operate to supplement or complement radiation monitoring related activities being carried out in support of statutory or other obligations. Organisations undertaking monitoring as part of their statutory responsibilities should wherever possible share information about their strategy and activities with the Monitoring Co-ordination Team so as to maximise the co-operative effort during the emergency.
- (d) Each organisation undertaking monitoring would retain responsibility for ensuring data flow and that the results are clearly presented; they would retain responsibility for their own resources. RIMNET would provide the agreed channel for bringing together the results of monitoring. Therefore, each organisation which might be able to contribute to the co-ordinated monitoring programme, should become an approved RIMNET data supplier so that they are able to enter their results directly on the system in the event of an emergency. The arrangements would also make use of the electronic information systems of the nuclear operators which provide a means of disseminating a range of information in a nuclear emergency.

- (e) Each organisation would be responsible for ensuring that its staff were properly trained, and its resources were adequately maintained, for it to be able to respond effectively in the event of the need for monitoring.
- (f) Robust voice and facsimile communications links should be in place between the Monitoring Co-ordinator and the OSF, and between the Monitoring Co-ordinator and the organisations undertaking the monitoring.
- (g) Some degree of preparation will be required by organisations which would be involved in co-ordinated monitoring. Specifically, they should include this aspect of their emergency response in their own response arrangements. They should identify the resources that would be most likely to be made available, and the communications routes by which they would maintain contact with other relevant bodies and the Monitoring Co-ordinator. As with all emergency response plans, those organisations with a specialist role to play should develop and maintain adequate awareness and preparedness.

15.4 Monitoring Resource Availability and Capability

- 15.4.1 The best use should be made of the resources offered to the Monitoring Co-ordination Team. These resources might include staff to undertake monitoring and sampling, laboratory analysis capability, communication facilities and other specialist equipment such as data plotting and mapping capabilities. These resources could be provided by the range of organisations with monitoring responsibilities as listed in 15.2.2. and could also include resources made available from research organisations and general industry

15.5 Practical Arrangements

- 15.5.1 NEPLG considers that the following practical arrangements would also need to apply:
 - (a) The NRPB liaison officer would act as the link between the SCG and NRPB's Monitoring Co-ordinator. He/she would convey the SCG's priorities for monitoring to the Monitoring Co-ordinator, and report progress on work underway back to the SCG. Through the NRPB liaison officer, the Monitoring Co-ordinator would propose to the SCG, and where necessary update, a monitoring strategy that would aim to address the priorities of the organisations at the OSF. The NRPB liaison officer would be a member of the GTA's team.
 - (b) The Monitoring Co-ordinator and his/her team would operate at the tactical level, aiming to make the best use of existing resources. Operational responsibilities would be retained at each monitoring organisation's emergency centre. The Monitoring Co-ordinator and team would match monitoring tasks to specific resources and request completion of the task through the relevant operational centre controlling the resources. This approach would encompass existing mutual support arrangements between nuclear operators.

- (c) The Monitoring Co-ordinator would advise, in respect of specific monitoring, whether the outcome was best expressed textually, or graphically as an annotated map.
- (d) Decisions on how this information should be passed on to the media and the public would rest, in the main, with the SCG under police or local authority chairmanship. The GTA would be likely to be a principal spokesperson on the subject. The Monitoring Co-ordinator would not be expected to make public statements.