

Introduction

Emergency planning is a national and international requirement for all UK licensed sites. There are well established processes, guidance and legislation within the UK for the development of emergency arrangements for civil nuclear power sites. These aim to protect the public through robust response arrangements on and off-site, and the management of preparedness to ensure the arrangements are in a constant state of readiness.

The prevention and minimisation of radiation exposure from the accidental release of radioactive substances is the main focus of emergency arrangements, however they also provide the capability to respond to a full range of accidents on the site. Planning for nuclear accident response is undertaken in varying detail depending on the assessed probability of an accident occurring and of it resulting in a public health hazard.

There have been several nuclear incidents in recent times; for example; Windscale, Three Mile Island, Chernobyl, and most recently, Fukushima as well as other non-nuclear emergencies such as the Piper Alpha fire. Each incident highlights the importance of having up to date emergency procedures in place and regular drills and training of relevant staff. In addition, emergency arrangements have developed from lessons learnt from these events. e.g. guidelines introduced for allowable limits of I-131 in food, health physics and radiochemistry procedures and the PPE required to be worn by emergency workers.



Our Role

Over the past 7 years Nuclear Technologies has worked closely with the Emergency Planning Team at British Energy, now EDF. Several projects have been undertaken by Nuclear Technologies for British Energy including;

- Review and Update of CESC Handbook and Associated Documentation. This included;

- Several reviews and updates of 'Central Emergency Support Centre and Strategic Co-ordination Centre Handbook'.
- Production of a 'RADSAFE Emergency Plan and Handbook'.
- Update of company standard on the 'Development and Maintenance of Emergency Arrangements'.
- Heysham 1 & 2 Emergency Handbook updates
- Production of Documentation to Support the Development and Maintenance of Emergency Arrangements. This included;
 - Review and update of 'Emergency Planning and Administration' documents.
 - Production of a Standard for 'Hazard Identification and Risk Evaluation'.
 - Development of a Standard for 'Maintenance and Readiness of Emergency Equipment and Facilities'.
 - Development of 'Specifications for the production of Development Plans for Emergency Arrangements'.
- Scoping study for emergency exercise planning and administration

Most recently Nuclear Technologies have worked on updating two sets of documents; EPG/004 and EPG/016. Nuclear Technologies facilitated a workshop with BEG Emergency Preparedness Engineers and Emergency Planning Group representatives to consider the revisions and restructuring needed for the EPG/016 document (Emergency Exercise Planning and Administration). It was evident that workshop attendees felt the existing document needed improvement and updating with best practice if it was to meet the aims of providing a useful routinely used reference document and project management/planning tool for experienced exercise planners, and training aid for future exercise planners and participants. This led to significant restructuring and editing of the document to better meet these aims. The revised document included a new Quality Plan completion approach for emergency exercise planning, this included supporting guidance on the basis for relevant tasks and how achievement of the required standards and performance are met. A revised model scenario template was produced and managed as a separate document to allow easier revision and to include relevant forms and various meeting agendas.

Emergency Exercise Planning and Administration documents were produced for Site Based Counter Terrorism, Level 1 Demonstration, Full Scope and Shift Exercises as well as for Level 2 Demonstration, Level 3 Demonstration and RADSAFE exercises. It was necessary and advantageous to discuss requirements with a number of EPEs (Emergency Preparedness Engineers), as they represent the principal document users, to ensure that the documentation produced met their requirements.

Nuclear Technologies restructured the EPG/004 document (Central Emergency Support Centre [CESC] and Local Emergency Centre [LEC] handbook) into several smaller, more manageable documents

on a team by team basis. Close working with CESC staff ensured that the documentation produced met their needs. A detailed Quality Plan was maintained of the work undertaken to update EPG/004. The proposed restructuring of the CESC and LEC handbook and the subsequent update was a big change and record of the changes was needed. The Quality Plan formed an important record of changes to the document and added value to the completed documents.

The CESC is used by both EDF and Magnox Ltd staff and as a consequence the EPG/004 set of documents had to meet both EDF and Magnox expectations and requirements. A review of the documents was undertaken by staff from both companies and procedures were aligned to meet current procedures.



The Result

We have been involved in the development of emergency arrangements and provision of emergency planning support for over 10 years to international standards and guidelines. Multi-disciplinary teams can provide assistance and specialist input to cover all areas of emergency planning, from site incident exercises to criticality dose assessments resulting in robust emergency strategies and arrangements.

NT has carried out a range of related projects including:

UKAEA

- Revision of National NEPLG Guidance on the Demonstration of Arrangements, and Reporting on Exercises.

AWE Aldermaston

- Audit of criticality emergency arrangements
- Criticality dose contour evaluation

NNL

- Pebble Bed Modular Reactor (PBMR) Emergency Planning Contours Assessments

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