

Health and Safety Executive Board		Paper No: HSE/08/11	
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Annual Report on the HSE Coordinated Programme for Nuclear Safety Research 2008/09 provided by the Nuclear Safety Advisory Committee (NuSAC)			

Purpose of the paper

1. The Board are being asked to agree to the coordinated programme identified and to approve an ND programme of safety research in the ND paper HSE/08/10. The attached report from NuSAC (annex A) provides advice to the Executive Board on the adequacy of the programme proposed for 2008/09.

Background

2. The Atomic Energy Act requires approval each year from HSE for a nuclear safety research programme coordinated with nuclear licensees. Responsibility for nuclear safety research was transferred in 1990 from the former DTI to HSC (now HSE).

3. The programme arrangements require the Nuclear Safety Advisory Committee (NuSAC) to provide advice to HSE on the adequacy and balance of a programme coordinated by ND with the nuclear licensees. NuSAC through a Research Review Group (RG6) reviews the research arrangements and is informed about the detail of the programme by ND and the nuclear licensees and it is on the basis of this it formulates its advice.

Argument

4. The views of NuSAC on whether the Nuclear Research programmes are adequate and balanced in supporting nuclear safety in the UK are set out in the attached report (Annex A).

Financial/Resource Implications for HSE

5. HSE recovers all its research and management costs from the nuclear licensees and from other nuclear companies and there is an overall neutral cost of the programme to HSE.

Action

6. The Executive Board is requested to take account of NuSAC's advice in its consideration of paper HSE/08/10.

Paper clearance

7. The attached report was produced by Peter Manning, Chair RG6, and was cleared by NuSAC.

NuSAC's recommendations on HSE's proposed Nuclear Safety Research Programme for 2008/9

- 1 NuSAC has the responsibility to inform HSE each year whether the Nuclear Research programmes are adequate and balanced in supporting nuclear safety in the UK. To do this, its Review Group 6 (RG6) met on 22 April with representatives of ND, nuclear licensees and the Nuclear Decommissioning Authority (NDA). It also received technical documentation for scrutiny. The Chair of RG6 presents this year's '*Annual Report on the Nuclear Safety Research Programme*', on behalf of NuSAC.
- 2 As in previous years, the Report from NuSAC in March 2007 concentrated on research into reactor operations and safety. It adopted a critical stance because the required documentation was well out of date and did not display an adequate approach to the subject. In addition, the topic of Human Factors was not receiving sufficient attention.
- 3 NuSAC is pleased to report that the Health and Safety Executive's Nuclear Directorate (ND) has put substantial effort into reviewing the status of research to support existing reactors. This has allowed the topic to be well displayed, areas of less significance to be reduced, and areas that are key to the future (such as the modernisation of instrumentation, and the properties of graphite) to receive due attention.
- 4 This year, RG6 has broadened its work to consider the many issues concerning the processing and disposal of nuclear materials. It is not feasible to review all the work, but the composition of RG6 has sufficient expertise to allow a wide sample of issues to be considered.
- 5 The NDA had taken a significant step forward by ensuring a substantial improvement in the quality of the *Technical Baseline Research Documents (TBU RDs)* that were produced in 2007. They displayed the Lifetime Plans for each site, where information was missing, and what projects were being sponsored to fill the gaps. Inevitably, some topics were not addressed, and some lacked sufficient detail to demonstrate that there was an adequate understanding, but it provided a good starting point. NuSAC specifically criticised a failure to acknowledge where problems were common to several sites, so that a coordinated approach could be undertaken.
- 6 NuSAC is pleased to note that the NDA now sponsors an industry-wide *Nuclear Waste Research Forum (NWRf)*, on which NuSAC is represented, and that this considers items of common interest. It has developed eight areas where a coordinated approach will be followed.
- 7 The recently developed *TBU RDs* of 2008 are of a high standard. The criticisms of 2007 have been addressed, and the documents form a good basis from which to control research.

- 8 The *TBuRDs* themselves do not demonstrate that technology can be provided on the necessary timescales. They do not indicate the resources needed, and NuSAC is not confident that these are readily available. Nor do the *TBuRDs* provide a means to prioritise the hundreds of issues listed. This is further work for the NDA and the Site License Companies to undertake.
- 9 NuSAC welcomes the NDA attempts to involve the Supply Chain in the delivery of technology. However, care will be needed to ensure proper accountability for whether it works and is safe to use. The 'Controlling Mind' concept is relevant.
- 10 The NDA has sponsored an exercise to help to define the essential skills needed, and where they reside. In some cases, the availability is only just acceptable, and the long delays in resolving the issues surrounding the National Nuclear Laboratory (NNL) are adding to the pressure.
- 11 Much work had been undertaken into Human Factors, but there was no common view on what was now needed. A workshop in November 2007 enabled a consensus on the way forward to be reached. There were also repeated shortcomings in implementation, which are now receiving more attention; including focussed visits from HF experts within HSE.
- 12 Nu SAC has also reviewed the provision of resources to underpin research work; it commends the efforts to rebuild capability in universities and other education establishments. Some of the earlier efforts are genuinely bearing fruit through the *Centres of Excellence*.
- 13 Looking ahead, the funding allocation given to the NDA has required several of the Life Time Plans to be revised. This budget pressure has been applied to areas of research, so it will be necessary to ensure that the essential safety work is continued.
- 14 The issues surrounding the National Nuclear Laboratory need to be resolved before serious problems emerge. The continued provision of scarce essential skills requires special vigilance.
- 15 The areas of common interest between sites (including those owned by MOD) need to be further developed. Whilst some are well established, and we are confident will flourish, others still need to be encouraged.
- 16 The requirements for geological disposal of waste packages will depend upon the actual site(s) selected. Therefore, there is uncertainty in what is required of the packages for disposal, and in the processes that produce the packages. NuSAC has been encouraging the production of a document equivalent to a *TBuRD* for the disposal requirements in order to clarify the gaps in knowledge, the worthwhile research, and the attendant risks. It is expected that NuSAC and the Committee on Radioactive Waste Management (CoRWM) will liaise to consider the total research requirements.
- 17 Based on its sample of the work undertaken, NuSAC concludes that good progress has been made to define and develop the topics requiring safety research in the UK. The situation is thus considered to be adequate, but fragile. It is in need of continuing encouragement and scrutiny.