

**HEALTH AND SAFETY COMMISSION
NUCLEAR SAFETY ADVISORY COMMITTEE
SUB-COMMITTEE ON RESEARCH**

**Minutes of the 34th Meeting of the
Nuclear Safety Advisory Committee Sub-Committee on Research
2 April 2004 at British Energy Generation Ltd, Barnwood.**

Present:

SCR Members

Licensees

HSE

Prof J Knott (Chairman)

Dr G Airey BE

Dr P Storey

Dr P Haigh

Dr J Thomson BE

Dr A Miller

Prof B Littlewood

Mr S Daniell MGBG

Dr H Starkie

Prof D Owens

Mr J Dickson MGBG

Dr T McNulty

Prof S Parry

Dr J Hobson BNFL

Mrs J Boorman

Mrs J Brady

1. Chairman's Opening Remarks

1.1 The chairman opened the meeting and welcomed members and participants. It was noted that Professors Duncan and Goddard had resigned and apologies had been received from Dr Marchese (MGBG).

2. Approval of Minutes: 33rd Meeting and Matters Arising.

2.1 The minutes of the 33rd meeting held in September 2003 (NuSAC/SCR/03/M2) were approved.

2.2 It was noted that, with the exception of 3/10 and 3/14, all actions from the 33rd meeting had been completed.

3/10 NuSAC SCR chairman to contact prospective candidates for membership of the sub-committee.

There are spaces for two new members on the sub-committee. The action is ongoing but it was agreed that one of the candidates should have a special interest in human factors. Action continues.

3/14 SCR members to let the chairman know which technical areas lay within their competence and interests.

This was discussed under agenda item 10. Action continues.

3. HSC Coordinated Programme of Nuclear Safety Research: Review of New Arrangements. NuSAC/SCR/04/1

3.1 The Licensees and HSE presented the joint paper that reviewed how a trial of the new arrangements had identified and commissioned the 2003/2004 HSC Coordinated Programme. The paper concluded that:

- when measured against criteria previously presented to NuSAC SCR, the trial of the arrangements had been successful;
- the NuSAC SCR should permit the Licensees and HSE to formally adopt the new arrangements;
- the Licensees' Research Coordinators had proved to be an acceptable alternative to the Industry Management Committee Strategy Group (IMC SG) which could now be disbanded.

3.2 NuSAC SCR noted that the new arrangements were captured in suites of Guidance Notes (GNs) maintained by the Licensees and HSE and asked if they could be supplied with copies. The Licensees and HSE agreed to forward copies of their GNs to members. (**Action 04/1**).

3.3 NuSAC SCR queried a number of instances where the arrangements are described as "fit for purpose" and expressed the view that HSE should be asking the

Licensees to aspire to "best practice". HSE agreed with the sub-committee and confirmed that it was the intention to adopt best practices but that flexibility in the arrangements addressed the individual requirements of each technical area. HSE would amend the paper to underline this intention. (**Action 04/2**).

3.4 Referring to its duty to advise the HSC, NuSAC SCR sought clarification of who would be responsible for ensuring that the sub-committee was kept properly informed on the programme and its outcome. The sub-committee also expressed the concern that the new arrangements would diminish the importance of the programme. HSE assured the sub-committee that NSD4a would continue to be responsible for regular overview presentations to the sub-committee. The Licensees also confirmed that the Licensees' Research Coordinators would continue to fulfil the duties previously discharged by the IMC SG but that future Licensee presentations to the sub-committee would more clearly differentiate between individual Licensee research strategies and their collaborative and non-collaborative research activities. HSE confirmed that the research GNs set out both HSE's and the Licensees' roles and responsibilities in respect of presentations to NuSAC SCR.

3.5 HSE advised NuSAC SCR that HSC programme was scheduled to be presented to the 6 April 2004 meeting of the HSC but that, for the first time, they would be taken "below the line" (not discussed at the meeting). This represents a new way of working for the future. NuSAC SCR expressed concern at this development and asked whether it could advise the HSC on whether the programme paper is discussed at the HSC meeting. HSE explained that there was no flexibility on how the Commission wished to treat the papers, but members of the Commission were allocated particular topics. HSE recommended that NuSAC SCR consider inviting the relevant Commissioner (Margaret Burns) to a future meeting of the sub-committee. (**Action 04/3**).

3.6 NuSAC SCR advised that it was unable to reconcile the spend reported in the Licensees' Nuclear Research Schedules (NRSs) with that reported in the HSE programme paper and asked how the new arrangements had impacted on the presentation of cost of the programme. The Licensees explained that the NRSs

report the cost of individual research activities only. The programme papers report spend in each of the Technical Areas and include the additional internal Licensee costs directly associated with the management of each activity. These costs are activity specific and can represent a significant component, particularly for the Control and Instrumentation programme. NuSAC SCR asked whether the new arrangements had resulted in the Licensees' internal costs of administering the programme increasing. The Licensees replied that the costs had not changed significantly from previous years but confirmed that they were a sizeable component. HSE noted that at the September 2003 meeting NuSAC SCR had advised that such internal costs were legitimate and should be included in the Licensees' spend. NuSAC SCR were advised that the new arrangements do improve the visibility of the impact of the Licensees' diverging interests on programme spend. However, it was agreed that the changes to the presentation of spend data made it difficult to compare the cost of the 2004/2005 programme with that of previous years. NuSAC SCR observed that the proposed presentation on Control and Instrumentation research would provide the sub-committee with an opportunity to understand the Licensees' costs.

3.7 NuSAC SCR asked whether there was a central record of technical exchanges. The Licensees and HSE confirmed that they held records of the exchanges and agreed to amend paragraph 16 of the paper to include a commitment to present annual reviews of technical exchanges to the sub-committee. **(Action 04/4)**.

3.8 NuSAC SCR queried arrangements for succession management of the Research Coordinator's role. The Licensees advised that the importance of the role was recognised and that the existing Technical Representatives provided a source of suitable candidates. NuSAC SCR were concerned that resources appeared to be stretched.

3.9 NuSAC SCR expressed the view that evaluation of the programme should consider nuclear safety rather than cost. The Licensees advised that the closure process, described in their Guidance Note 4, placed the emphasis on nuclear safety. HSE advised that the most recent evaluation of the Levy programme, reported in

NuSAC/SCR/04/5, also emphasised the benefit to nuclear safety. HSE was seeking improvements to the definition of nuclear safety issues that would aim to clarify how the research was expected to benefit nuclear safety and thus assist future evaluations. Finally, NSD was also being requested by the HSE Chief Scientist to undertake impact evaluation at a programme level.

3.10 In conclusion, the Chairman summarised that NuSAC SCR:

- accepts that the new arrangements are working satisfactorily;
- will continue to review working of the arrangements annually;
- accepts disbanding of the IMC SG on the understanding that HSE is satisfied that the Licensees' Research Coordinators are an acceptable alternative and that HSE will continue to provide the sub-committee with regular overviews of the programme.

4.1 UK Reactor Safety Research Programme: Update on 2003/2004 and Proposed Programme for 2004/2005. NuSAC/SCR/04/2

4.1.1 HSE presented the paper and summarised its principal conclusions as follows.

- The 2003/2004 programme was balanced and adequate and satisfactorily progressed or closed out an acceptable number of NRI issues. Emerging operational issues were having an impact upon the graphite and fuel & core research programmes.
- The proposed programmes would: secure continuity of existing research; deliver a balanced and adequate programme of research that addresses priority issues; maintain Licensees' access to Essential Research Capability and HSE's access to Independent Technical Capability; and include participation in appropriate international activities.

4.1.2 HSE added that the W&D programme as defined was not driven by the published NRI, partly because the NRI had not been updated to take into account a workshop which had systematically covered the issues and had restructured them. The workshop report had been issued to NuSAC SCR. NuSAC SCR queried the

decrease in spend for chemical processes, and were informed that operational problems had affected the programme.

4.1.3 NuSAC SCR had been unable to reconcile the programme reported in the MGBG NSR with that reported in the paper because the breakdown of technical areas within the Operational Support Programme (OSP) is different to that used by HSE. HSE explained the technical areas in the HSE paper had been chosen to align with the Nuclear Research Index. MGBG explained the reasoning behind the OSP and agreed that this was a potential source of confusion. MGBG offered to supply members with a table that reconciled the information in the MGBG NRS with that in the paper. **(Action 04/5)**. MGBG noted the difficulties experienced by NuSAC SCR and would consider this when presenting future programmes. **(Action 04/6)**.

4.1.4 NuSAC SCR queried the deferment of research for operational reasons, and stated that they did not want high priority research to be so deferred. The Licensees replied that there was a formal process for considering changes, which included discussions with HSE. HSE added that the same assessors were involved with both the research and the operational issues.

4.1.5 BE asked if NuSAC SCR would be informed about the EPSRC programme. NuSAC SCR replied that they had been involved in considering the proposals, which were addressing 'Keeping the Nuclear Option Open' rather than safety, and they could write to EPSRC for information if required.

4.2 British Energy Generation: 2004/2005 Programme of Nuclear Reactor Safety Related Research. NuSAC/SCR/04/3

Magnox Generation Business Group: 2004/2005 Programme of Nuclear Reactor Safety Related Research. NuSAC/SCR/04/4

4.2.1 BE and MGBG presented their respective papers, supplementing the information presented by HSE in the previous paper on the total HSC Coordinated Programme. Prior to the meeting HSE had supplied NuSAC SCR members with copies of each Licensees' Nuclear Research Schedule. BE stated that their

programme reflected the uniqueness of UK AGRs and the modern nature of the single UK PWR, for which foreign expertise was available. Magnox said that the strategy was dominated by the closure programme, and the emphasis was on graphite and W&D. In future the funding was likely to be mixed, divided between the NDA and the Site Licensee Companies.

4.2.2 NuSAC SCR queried the impact of the future of Peel Park and changes at Barnwood HQ on BE's research resources. BE explained that approximately half of the existing Peel Park posts would move to another office in Glasgow and the other posts are expected to move to Barnwood. BE are also planning a recruitment campaign for Barnwood. The NuSAC SCR chairman advised that NuSAC are monitoring the situation at Barnwood and Peel Park.

4.2.3 NuSAC SCR noted that the programmes do not address 'Keeping the Nuclear Option Open' (KNOO). HSE advised that responsibility for KNOO lay with DTI and Sir David King (Government Chief Scientific Adviser) in the OST. NuSAC SCR agreed that they would review this issue at a later date.

4.2.4 The Chairman summarised that the proposed 04-05 programme was endorsed by the SCR.

5. HSE and Licensee Presentation on Graphite Research.

5.1 HSE's Graphite Technical Representative introduced the presentation by summarising the research strategy and the principal topics that the programme is aiming to address. BE and MGBG Technical Representatives each gave presentations on a sample of their research activities. Subsequent discussions addressed questions from members on the effect of anisotropy on graphite behaviour and original porosity. NuSAC SCR sought clarification of an apparent discrepancy between the Licensees' Stewardship report, which suggested Issue 15.6.9 was closed, and the NRS, which proposed additional research. The HSE Technical Representative confirmed that the Issue remained Live and the Licensees conceded that their Stewardship report was in error.

5.2 The Chairman acknowledged that the behaviour of graphite was an important issue for continued safe operation and it was clear that it warranted a considerable programme of research. He thanked the presenters for a helpful explanation of the programme, noted the level of collaboration, and advised that the sub-committee will continue to seek assurance that an appropriate level of research activity is being sustained.

6. HSC Assessment of 02-03 Industry Direct Programme NuSAC SCR/04/7

6.1 HSE presented its assessment of the Licensees' Industry Direct Programmes, which arrived at the following principal conclusions.

- Although principally development rather than research, HSE is satisfied that the activities were of generic importance to the continued safe operation of nuclear reactors.
- BE and MGBG continue to collaborate on those activities that are of mutual benefit.
- The IDPs have made an important contribution to the maintenance and development of nuclear safety related capabilities, knowledge and expertise.
- The programmes delivered validated enhancements to procedures, codes, and material data that are informing arguments that underpin nuclear safety.
- The results of the programme are quickly disseminated internally via updates to codes, company standards, handbooks etc.
- The processes used by BE and MGBG to develop the 2002/2003 IDP were not entirely transparent to HSE. Visibility to HSE of the outcomes of the IDP was variable.
- The NRSs have improved the visibility to HSE of the Licensees' non-NRI related (formerly IDP) programme. HSE intend to look to future issues of the Licensees' NRSs to demonstrate improved visibility of the outcomes.

6.2 NuSAC SCR commented that staff development was an important aspect of the programme, and the Licensees and the SCR took a more positive view than was implied in the HSE paper.

7. Access to Independent Technical Capability NuSAC/SCR/04/8

7.1 HSE presented its review of HSE's access to Independent Technical Capability (ITC). The paper concluded that HSE's access to ITC was secure and that adequate arrangements were in place to maintain teams and provide support as necessary. There was access to ITC in each technical area but the numbers of teams were small and as such access was potentially vulnerable. Graphite was the major technical area where HSE had taken steps to maintain access to ITC. Further concentration of expertise had occurred in the year, and there were potential threats discernible from current reorganisations. There had also been some positive developments. The age profile of experts was a continued concern in some fields, and was addressed more widely under the topic of 'Keeping the Nuclear Option Open'. HSE would continue to provide NuSAC SCR with annual reviews of access to ITC.

7.2 NuSAC SCR queried the Licensees' use of the graphite team at Manchester and the potential for the public to perceive this as a challenge to HSE's access to independent advice. HSE replied that it recognised the issue and had established a protocol for the Licensees' use of the team. HSE added that it expected the Manchester team to seek alternative sources of funding and to become self-financing in the longer term. NuSAC SCR said that HSE must ensure the advice it received from the team was not influenced by the Licensees and that there remained a clear distinction between the maintenance of a Licensee's Essential Research Capability and HSE's access to ITC. NuSAC SCR would continue to monitor how HSE and the Licensees use the Manchester graphite team.

7.3 Recognising the public interest in HSE's access to independent advice, NuSAC SCR proposed that Sheila Ashford be invited to comment on the HSE paper and report back to a future meeting of the sub-committee. **(Action 04/7)**

8. Strategy for NDA Related Research. NuSAC/SCR/04/10

8.1 HSE presented its current understanding of the arrangements for nuclear

safety research applicable to BNFL, Magnox Electric and UKAEA sites when the Nuclear Decommissioning Authority (NDA) commences operation in 2005. HSE had taken an active role in the future arrangements for nuclear clean-up research. The paper described HSE's current position with each of the existing Licensees, the overall organisation of sites under NDA, and the current state of Legislation. The paper identified two principal categories of research, ie. short term project orientated and long term generic, and explained how HSE expected the NDA to manage these programmes. The paper identified potential concerns and issues that were yet to be resolved.

8.2 NuSAC SCR queried the impact of Nuclear Decommissioning Authority, due to assume responsibility in April 2005, on BNFL's deployment of resources and funding for nuclear safety research. HSE and the Licensees replied that the situation remained unclear. Referring to the role of the Nuclear Science and Technology Services (NSTS), a BNFL subsidiary company expected to have a key role in future programmes of nuclear research, NuSAC SCR expressed the concern that prioritisation and management of different interests (national/international, Licensee/Regulator etc) could be problematic. BNFL commented that the way of working would be clearer by the time of the next SCR meeting. NuSAC SCR concluded that the autumn meeting of the SCR should discuss the impact of NDA on BNFL's organisation. BNFL agreed to prepare a paper to inform the discussion. **(Action 04/8).**

8.3 NuSAC SCR expressed the concern that various presentations on the HSE/NDA relationship had failed to underline the need for genuine research to inform decommissioning. It also feared that NDA would permit the use of overseas contractors who were not familiar with UK regulation of nuclear safety and that this could also lead to problems. NuSAC SCR concluded that it must impress upon the NDA that it had several concerns and sought advice on how it could communicate these. The Chairman recommended that the SCR's concerns be discussed at the July meeting of the main committee. **(Action 04/9)**

8.4 HSE was concerned at the reluctance of NDA to engage in discussion on the

arrangements for research. It was the intention that the arrangements for UKAEA research would replicate those being developed for BNFL chemical plant. HSE believed that, as owners of the IPR, it was in NDA's interests to participate in the development of these arrangements and thus improve mutual understanding of the NDA/HSE interface. HSE stated that it would appreciate NuSAC SCR's help in focusing NDA on arrangements for research to inform safe nuclear clean-up.

9. Arrangement for Chemical Plant Research NuSAC/SCR/04/12

9.1 BNFL presented a joint HSE/BNFL paper on the development of the arrangements for sharing its research objectives and programmes with HSE. HSE and BNFL have prepared joint Guidance Notes (GNs) that were informed by the reactor research arrangements. HSE has completed strategy statements for chemical plant research. BNFL have prepared research schedules and HSE has agreed these. The paper proposed to present papers on HSE's strategies and BNFL's research schedules to the autumn meeting. An annual evaluation of the research would be presented to the spring meeting.

9.2 NuSAC SCR stated that it was very encouraged by the development of the arrangements for chemical plant research and also that they appeared to represent a model for other Licensees. HSE agreed to supply members with copies of the chemical plant GNs. (**Action 04/10**)

10. Any other business.

10.1 NuSAC SCR was invited to note the following papers.

- Evaluation Report for the 2002-03 IMC Research Programme (IMC)
NuSAC/SCR/04/5
- The HSE Levy Programme of Nuclear Safety Research 2002/3 Evaluation Report (HSE).
NuSAC/SCR/04/6
- HSE Involvement in International Collaborative Research Projects (HSE)
NuSAC/SCR/04/9

- Horizon Scanning for Nuclear Safety Research HSE. (HSE)

NuSAC/SCR/04/11

10.2 NuSAC SCR asked when, under the new arrangements, it could expect to receive the evaluation of the Licensees' programme. In response, the Licensees advised that their evaluations of the NRI related research programmes would be reported to the autumn meetings. Their evaluations of the 2003/04 programme would be reported to the 35th meeting.

10.3 The sub-committee noted that HSE had let only two Levy projects by competitive tender and queried the tendering arrangements. HSE replied that as the levy programme was restricted by agreement to international collaboration and maintenance of ITC, most projects were intrinsically unsuited to multiple tender.

10.4 NuSAC SCR noted that some contractors were failing to meet timescales and keeping the project officer informed. HSE advised that the nature of research was such that it may not be always possible to meet the original timescales but that normally this did not cause a problem on the regulatory side because of the timescales involved.

10.5 The Chairman reminded members that there is an ongoing action (03/14) to identify technical areas of interest and competence. The sub-committee recognised that there is a lack of human factors expertise.

10.6 The Chairman raised the issue of Project Dalton, saying that when it existed it would be seeking support. BNFL said that it was not yet launched officially, and it would be appropriate to discuss it later, maybe at the July NuSAC meeting. HSE added that they were represented on the advisory board. NuSAC SCR asked to be kept informed of progress.

10.7 The NuSAC SCR was asked to consider arranging a pre-meeting of members, perhaps the night before, to facilitate a consensus ahead of the meeting.

(Action 04/11).

10.8 The sub-committee confirmed that the next technical presentation should discuss Control and Instrumentation Research. HSE agreed to arrange for a presentation to the 35th meeting in autumn 2004, to include both reactor and BNFL chemical plant Licensees. **(Action 04/12)**

11. Date of Next meeting.

Date: Thursday 16 September 2004

Venue: Rose Court, London.

Actions

03/10 Professor Knott to contact prospective candidates for membership of NuSAC SCR

03/14 SCR members to let the chairman know which technical areas lay within their competence and interests

04/1 The Licensees and HSE to forward copies of their Guidance Notes to members.

04/2 HSE would amend paper NuSAC/SCR/04/1 to underline the intention that Technical Exchanges adopt best practice.

04/3 NuSAC SCR to consider inviting a member of the Commission to a future meeting of the sub-committee.

04/4 HSE amend paragraph 16 of paper NuSAC/SCR/04/1 to include a commitment to present annual reviews of technical exchanges to the sub-committee.

04/5 MGBG to supply members with a table that reconciled the OSP research programmes with the HSE technical areas.

04/6 MGBG to consider changing its presentation of future research programmes to assist reconciliation with the HSE technical areas.

04/7 HSE to invite Sheila Ashford to comment on the public interest context of paper NuSAC/SCR/04/8 "Access to Independent Technical Capability" and report back to a future meeting of the sub-committee.

04/8 BNFL to prepare a paper for the autumn meeting of NuSAC SCR to inform a discussion on the impact of NDA on BNFL's organisation.

04/9 NuSAC SCR to propose that the July meeting of NuSAC discusses NDA's responsibility for ensuring that decommissioning is informed by an appropriate programme of research.

04/10 HSE to supply NuSAC SCR members with copies of the Chemical Plant Research Guidance Notes.

04/11 For future meetings, NuSAC SCR to consider arranging a pre-meeting of members.

04/12 HSE to arrange a presentation of the Control and Instrumentation research programme to the 35th meeting in autumn 2004.