

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

**Minutes of the 32nd Meeting of the
Nuclear Safety Advisory Committee Sub-Committee on Research
28 March 2003, HSE, Rose Court, London.**

Present: Members

Professor J Knott (Chairman)	Professor B Littlewood
Professor J Richardson	Professor S Parry

From HSE

For the IMC

Dr P Storey	Dr C Marchese
Dr T McNulty	Mr S Daniell
Dr A Miller	Dr J Hobson
Mr P Mullen (Secretariat)	Mr J Dickson
	Dr J Thomson
	Dr G Airey.

1. Chairman's Opening Remarks

1.1 The chairman welcomed everyone to the meeting. Apologies had been received from Professor Goddard. Due to transport problems Dr Hobson participated through use of a conference telephone arrangement.

1.2 On behalf of NuSAC SCR the chairman expressed gratitude to Mr R Hall and Mr J Hall, retiring members of the SCR, for their services to the Sub-committee. NuSAC SCR wished them well.

2. Approval of Minutes: 31st Meeting - 25 September 2002

2.1 The SCR felt that the minutes had not captured concerns voiced by NuSAC SCR members about the change from the IMC to the new arrangements. However, it was accepted that the chairman's paper advising the HSC on the outcome of the review (HSC/02/133) did record NuSAC SCR's concerns.

2.2 The licensees noted that the minutes did not incorporate amendments proposed by the themselves. HSE agreed to update and reissue the minutes accordingly.

2.3 The minutes of the 31st meeting held on 25 September 2002 (NuSAC/SCR/02/M3) were approved subject inclusion of the licensees' amendments.

Action 03/1 HSE to update and reissue minutes of 31st meeting.

3. Matters arising from previous meeting

3.1 Actions

02/16 The IMC to produce a year end report on technical exchanges at the end of FY 03/04. Ongoing.

The licensees had prepared an interim report for discussion under agenda item 10.

02/17 The IMC to re-word section 3.6 of Nuclear Safety Research Guidance Note 4 in line with the chairman's comments. Discharged.

The licensees and HSE confirmed that the licensees' guidance note GN 4 had been revised and was due to be reissued shortly.

02/18 HSE to draft a revision to the NuSAC SCR Terms of Reference for the next meeting. Discharged.

HSE paper NuSAC/SCR/03/8 which proposes revised Terms of Reference for the consideration of the NuSAC SCR is presented at Agenda Item 9.

3.2 Referring to paragraph 4.18 of the minutes, the SCR asked HSE to update the Sub-Committee on NSD recruitment. HSE reported that NSD had completed a successful recruitment campaign. However, HSE is experiencing critical staff shortages in other Directorates and because of HM Treasury constraints on recruitment NSD was asked to forfeit 9 posts. A consequence of this is that the Chief Inspector has found it necessary to move staff from the non-regulatory posts, such as research, to regulatory posts in inspection and assessment. NSD 4a had recently acquired an additional inspector grade member of staff but he had now returned to regulatory duties.

3.3 The chairman reminded the Sub-Committee that the HSC's endorsement of the proposal to extend arrangements for research to other licensees was subject to Treasury giving HSE the permission to recruit additional staff. He now understood that they had not granted their permission. HSE confirmed the Treasury was not allowing HSE to recruit and therefore the Executive was unable to consider NSD's bid for an additional 26 posts to cover new duties arising from, for example, the proposed Nuclear Decommissioning Authority (NDA). The chairman asked NuSAC SCR to note that NSD resources were being stretched and that the concern of NuSAC goes wider than research.

3.5 It had been planned to combine a visit to BNFL's University Research Alliance at Manchester with the 32nd NuSAC SCR meeting. However, the visit had to be rescheduled due to the increased number of Agenda items. It was agreed that the NuSAC SCR secretary should arrange the visit to coincide with the June meeting.

Action 03/2 NuSAC SCR secretary to combine the next meeting with a visit to Manchester University - University Research Alliance and graphite research team.

4. HSC Co-ordinated programme of nuclear safety research

4.1. NuSAC/SCR/03/1 - UK Reactor safety research programme: update on 2002/2003 programme and proposed programme for 2003/2004 (HSE)

4.1.1 HSE presented the above paper and clarified the relationship, purpose and timing of the Nuclear Research Index (NRI) of issues. The NRI is updated regularly as issues emerge and others are closed by research or other means. During April and May NSD's Technical Representatives will review the status of all open issues to produce the 2003 Live NRI for submission to NuSAC SCR in June 2003. In late autumn the licensees will use this Live NRI to inform the production of their Nuclear Research Schedules (NRSs) for the 2004/05 programme. HSE is planning improvements to the NRI that will include a more explicit statement of the safety issue and the expected outcomes of the research. However, there may not be the resource to implement these changes in 2003.

4.1.2 The SCR stressed that research made a genuine contribution to plant safety cases. HSE agreed that the programme was contributing to the development of plant safety cases but cautioned against the use of the programme to undertake research that was required to directly support a regulatory decision.

4.1.3 Referring to Table 1 of paper HSE presented the forecast outturn for the 2002/03 programme of Levy funded research. The expected outturn of £1.2m is lower than the original planned expenditure of £1.56m reported to the 30th meeting of NuSAC SCR last June. HSE had decided not to make use of the £125K budget for miscellaneous activities and non-specific independence needs. In addition a busy programme of regulatory activity in the graphite area had displaced planned research activities valued at £200k. The SCR asked HSE if they had considered substituting these planned activities with other research projects. HSE replied that NSD graphite personnel have been heavily committed to regulatory issues and this,

coupled with the lack of NSD resources available for research, has hindered the planning and implementation of substitute research activity.

4.1.4 The SCR expressed concern as to how the public might interpret the under spend on safety research, and asked whether the reduction against planned expenditure was having an impact on nuclear safety. HSE assured NuSAC SCR that the delay to research activities caused by the under spend had not compromised HSE's regulation of nuclear safety.

4.1.5 HSE said that at the time of preparing the original programme HSE was in dispute with IMC over four Human Factors NRI issues and a contingency was added to provide HSE with the option to levy the licensees. Subsequent discussions between both parties established that the licensees had implemented a number of management initiatives that were addressing two of the disputed issues and the IMC agreed to add two activities to its programme to address the remaining issues. Therefore, HSE was not required to spend the contingency budget planned for the HF area. The licensees explained that the discussions had revealed that research was not necessarily the best means of addressing HF issues and that the management initiatives were also proving effective.

4.1.6 HSE explained that table 2 to the paper presented the proposed Levy funded programme for 2003/2004. The planned expenditure of £1.56m would: maintain essential research capability (ERC) external to the nuclear licensees; support sources of independent advice to HSE; fund participation in international activities. From 2004/2005, HSE would encourage the licensees to fund the maintenance of all ERC and therefore this was not expected to feature in future Levy funded programmes. If the current high regulatory demand on the graphite technical capability continued then this could displace planned research activities.

4.1.7 The SCR asked if European framework contracts formed part of the International (INTL) programme. HSE confirmed this. The SCR asked who benefited from international research. HSE responded that HSE, research contractors and the licensees would benefit.

4.1.8 HSE said that Table 3 summarised the licensees' programmes of activities which address NRI issues, (equivalent to the previous IMC programmes). The table illustrated each licensee's budget by technical area. The SCR noted an increased spend in Waste and Decommissioning (W&D). HSE explained that the licensees and HSE have completed a thorough review of the need for W&D research and developed a new strategy that had been used to identify a range of NRI issues. Thus the 2003/2004 W&D programme would start to address these new issues.

4.1.9 The chairman advised that he expected the strategy developed by the reactor licensees to inform NDA's strategy. The licensees agreed but expressed the licensees' concern that NDA were developing a strategy for decommissioning that would be station specific and therefore lacked the generic thinking required to inform a strategy that would help optimise research programmes. It was agreed that NuSAC SCR's advisory role should encompass NDA proposals for research. The chairman advised that contracts between NDA and the contractors/licensees should include research. HSE said that they had initiated dialogue with DTI on NDA's responsibilities in relation to encouraging generic research and collaboration between contractors. It was agreed that HSE would communicate NuSAC SCR's views on the need for generic research to a DTI coordination meeting on NDA research.

Action 03/3 HSE to inform the next meeting on NDA research of NuSAC SCR's views on the need for a strategy that encourages generic research.

4.1.10 HSE explained that Table 4 compared the planned Levy and Licensees programmes for 2003/2004 with the forecast outturns for 2002/2003 and showed that apart from a significant increase in W&D research, the programme was broadly in line with previous years. The SCR queried this interpretation of the figures arguing that, if W&D research were excluded, the licensees programme had declined by about 10 percent. The licensees responded that there was an increase in research. He chairman advised that NuSAC SCR should trust HSE in ensuring adequate research is being done but recognised the SCR's concerns.

4.1.11 Earlier in the meeting the SCR had commented that the forward look document produced by HSE in previous years had helped NuSAC SCR to judge the adequacy of research. It was agreed that future HSE papers would include additional information detailing actual and predicted spend over a longer timescale to assist NuSAC SCR's judgement of the programme and the new arrangements.

Action 03/4 HSE to include in future papers to NuSAC SCR additional data to illustrate actual past and predicted future trends of spend on nuclear safety research.

4.1.12 The chairman confirmed that the future Levy programme, as presented by HSE was acceptable for the forthcoming 2003/04 programme of activities. However, referring to the statement "addresses priority issues" in paragraph 16 of the HSE paper, he enquired about the issues that the programme will not address. HSE explained that resource and time constraints meant that the programme aimed to address high and medium priority NRI issues and therefore low priority issues had not been addressed. The SCR asked for examples of issues that are not being progressed by the programme and noted an example provided by HSE. The chairman acknowledged the issues faced by HSE and requested HSE to revise the conclusion at paragraph 16 to include a statement that the decision not to progress low priority NRI issues in 2003/2004 would not compromise nuclear safety.

Action 03/5 HSE to revise conclusion to NuSAC/SCR/03/1 in respect of low priority NRI issues.

4.1.13 The chairman believed the NRI benefited from its transparency but could benefit from improved clarity and suggested examining sample issues to see how the research had improved safety. HSE replied that the proposed new NRI structure discussed previously would provide improved visibility of how research aimed to benefit nuclear safety.

4.2 Licensees' proposed 2003-04 Programme (Licensees) - NuSAC/SCR/03/2

4.2.1 The licensees presented the paper, which reviewed recent Licensee experience in using the new arrangements. It concluded that the new arrangements had been used successfully to develop adequate and balanced research programmes that were tailored to the business needs of the Licensees. The SCR asked if Table 1, on Licensee's research programmes, could be broken down into technical areas. The licensees advised that this information was provided in the NRS.

4.2.2 The licensees reported that HSE had issued their proposed Levy programme late in their planning process and after BE had agreed budgets for research. In the absence of a defined Levy programme BE had based their budget upon the outturn from 2002/2003. HSE confirmed that they had issued the Levy programme later than expected. However, the licensees representatives would have been aware of planned Levy research from their discussions in the IMC TWGs. BE stated that they had budgeted essentially the same amount in 2003/04 as in 2002/03 for the combined HSE Levy plus IMC programme. However, they would have to consider rescheduling certain research activities in order to fund an unexpected additional £525k for the HSE Levy in 2003/2004 compared to the 2002/03 outturn. BE would proceed with the programme but that delaying the start of certain activities could release funds within 2003/2004 to finance the Levy programme. The SCR expressed concern at what appeared to be a proposal to divert funds from the licensees' programmes and queried whether the licensees' business plans were now directing the HSC Coordinated Programme. In the ensuing discussion the SCR questioned whether the funding policy for the programme had changed. They understood that the annual IMC's programme included activities for which both the licensees and HSE had agreed money should be found by necessity and that the annual Levy programme included activities which HSE deemed it necessary to progress that year. The SCR queried the BE proposal to reduce funding available for their programme, i.e. by deferring agreed activities, to fund a higher than expected Levy programme. They viewed this as a significant departure from their understanding of the policy for funding nuclear safety research and expressed their

very serious concern, not for the first time, that BE's financial difficulties may have the potential to impact upon nuclear safety. BE responded that nuclear safety was the principal BE objective and the company's financial position would not be allowed to compromise that objective. As far as nuclear safety research was concerned, the budget in 2003/04 was essentially the same as in 2002/03. It was intended to fund all reasonably practicable enhancements to nuclear safety, including those derived from research activities. HSE said that they were also concerned that the deferral of projects would delay the benefit to nuclear safety. However, they assured members that the nuclear licensing regime provided HSE with the necessary powers to ensure that such delays would not impact upon its ability to regulate the risk to the public and workers from operating nuclear reactors in the short or long term.

4.2.3 The chairman noted that BE's budget provision might impact upon the timing of individual projects but accepted that HSE had sufficient powers to ensure that delayed research did not impact upon safety in the short or long term, eg. transfer of project into Levy programme. He also accepted that research results do not make an immediate contribution to nuclear safety and asked BE to supply HSE with their revised programme of research.

Action 03/6 BE to supply HSE with their revised 2003/2004 Programme of NRI related research.

5. Evaluation of the programme

5.1 IMC Stewardship report for 01-02 programme (Licensees) NuSAC/SCR/03/3

5.1.1 The licensees presented the paper, advising that the Stewardship report for the 2001-02 IMC research programme incorporated a review of NRI (Nuclear Research Index) open issues. This was undertaken so that the status of all NRI issues could be clearly defined prior to the implementation of the new arrangements, on a trial basis, for the 2003-04 programme. The SCR queried what criteria had been used to determine when an issue was closed. The licensees referred to the IMC Guidance Note 2.6 which provided guidance, including criteria, for completing

the Project Completion & NRI Close-out Reports appended to the Stewardship report. The SCR said that they expected the closure report to explain: the nature of the research; the outcome; and how the research benefited nuclear safety. The SCR asked what proportion of the closed issues benefited safety. The licensees advised that the figure was about 50 percent, but advised caution because the outcome of, for example, confirmatory research may not be recorded as directly benefiting safety and therefore it was difficult to judge how "success" is being judged. The Licensees noted the expectation of NuSAC SCR with regard to the closure of NRI issues.

5.2 HSE evaluation report for 01-02 programme (HSE) NuSAC/SCR/03/04

5.2.1 The evaluation had been done using the same questionnaire as in the past. The results showed that the Project Officers were satisfied in general. However, HSE intended to implement improved arrangements for evaluation. HSE also noted the comments of the chairman on the evaluation in the IMC Stewardship report and would attempt to incorporate his views in the improvements being considered for HSE's evaluation report.

Action 03/7 HSE to take into NuSAC SCR's views when preparing the annual evaluation of the Levy programme.

5.2.2 The SCR asked whether the recent loss of a staff member by the NSD research unit would have an adverse effect. HSE replied that this would not affect NSD4's key objectives and that HSE had confidence in its assessors and the effective running of the programmes.

5.2.3 The SCR noted that there were only a limited number of levy funded Human Factor projects. HSE replied that the levy programme should not be considered in isolation, but in conjunction with the licensees' programmes.

6. Review of support for Essential Research Capability (Licensees)

6.1 The licensees said that the paper provided an update on the status of Essential Research Capability (ERC) required to support the Licensees' programmes of nuclear reactor safety research. The IMC had provided guidance to chairmen of working groups advising that ERC should be declared where it was considered that continued research was vital to the long-term maintenance and, where reasonably practicable, enhancement of each Licensee's safety cases. Before declaring an ERC, two tests should have been passed:

- (i) There was a business need to undertake nuclear safety-related research in the technical area in the future.
- (ii) The nature of the research was so specialist that, unless the Licensee(s) took special measures to preserve existing research teams, there was likelihood it would not be possible to get the research done (since the capability would not be available).

6.2 The SCR was concerned about the closure of facilities and the possible subsequent loss of expertise concerned and questioned the term "business need". HSE recognised the SCR's concerns and although they believed that the licensees' review of ERC was satisfactory they expected future reviews to take a more proactive approach to the role of research in maintaining ERC. The licensees advised that due to uncertainties within industry at the current time it had been difficult to take a proactive approach.

6.3 The chairman advised that NuSAC SCR would be seeking annual reviews of ERC. HSE and the licensees confirmed that future ERC requirements would be reported annually in the licensees' NRSs.

7. Access to Independent Technical Capability (HSE)

7.1 HSE presented the paper, advising the function of the Independent capability (ITC) is to provide HSE with a source of technical advice, in addition to its own staff, which, where possible, is independent from those used by the nuclear licensees. The paper provides an update on the review of Independent capability reported in NuSAC/SCR/02/5 at the January 2002 meeting. A major new development has been the setting up of the graphite research team at Manchester University. HSE were developing a protocol with Manchester which would allow the licensees to access the team without compromising its ability to provide HSE with ITC.

7.2 The SCR queried access to human factors capability. The licensees replied that they had access to expertise at Lancaster University and were also supported by WANO and the INPO in the USA.

7.3 The SCR asked how far ahead HSE looked when reviewing review ITC. HSE replied that the current contracts with the graphite and Harwell teams were for 3 years.

7.4 The licensees stated that the industry shared NuSAC SCR's concerns in relation to the industries ageing workforce and for this reason MGBG has established alliances with the aim of maintaining nuclear expertise.

8. HSE involvement in the EU Framework Programme (HSE) NuSAC/SCR/03/7

8.1 HSE presented the paper, which followed on from paper NuSAC/SCR/02/6, discussing HSE/IMC involvement in the EU framework programme (FP5). The paper gave some more general considerations arising from the Select Committee inquiry, and an update on FP6, which starts this year. HSE had organised a workshop on FP6 participation to promote UK participation and Professor Parry had attended for NuSAC SCR.

8.2 The SCR commented that these Framework Projects were quite rewarding but a large burden administratively.

9. Terms of reference for NuSAC SCR (HSE) NuSAC/SCR/03/8

9.1 HSE presented the paper to NuSAC SCR and advised it was appropriate to review the Terms of Reference (TOR) of the sub committee in the light of the changing circumstances. The chairman highlighted the changed elements:

- the new arrangements for reactor safety research;
- the changes in the waste management and decommissioning area connected with the setting up of the new authority; and
- the proposed extension of HSE's oversight to other licensees.

9.2 HSE clarified the term 'horizon scanning' to NuSAC SCR to mean looking at the long-term perspective.

9.3 The chairman suggested specifying that the terms adequacy and collaboration in bullet point 7 related to safety research.

9.4 The SCR suggested increasing the number of NuSAC SCR members to accommodate an increasing demand placed on the sub-committee. In response, the chairman indicated that the TOR include a statement of support should the sub-committee be unable to meet the new TOR because of its limited resources.

9.5 The SCR sought clarification of NuSAC SCR's advisory role. It was agreed that the sub-committee advises HSC on behalf of NuSAC.

9.6 HSE noted NuSAC SCR's comments and agreed to amend the paper ahead of the meeting of NSRSG planned for 8 May 2003.

Action 03/8 HSE to amend paper NuSAC/SCR/03/8 ahead of the meeting of NSRSG on 8 May 2003.

10. Interim report on monitoring of technical exchanges (Licensees)

10.1 The licensees presented the report of Technical exchanges: summary of activities. New arrangements for technical exchanges were being operated in parallel with the existing IMC arrangements, and good progress was being made with the development of future alternative arrangements. Existing arrangements (e.g. R5/R6 panel meetings) were being used wherever possible. In technical areas where there was significant collaboration the new arrangements were similar to existing arrangements.

10.2 HSE commented on the benefit of the information to NuSAC SCR. It was premature to state how successful these technical exchanges were because some TWGs had not discussed the 03/04 programme. HSE were also concerned that the licensees' guidance to their technical representatives might not secure an adequate record of the Technical Exchanges. The licensees noted HSE's concerns and agreed that the record must capture important decisions, judgements on commissioning of licensees programmes. The chairman acknowledged HSE's comments and asked HSE to keep NuSAC SCR informed of any problems, preferably in June but later would be acceptable.

Action 03/9 HSE to keep NuSAC SCR informed on any problems with technical exchanges.

11. Report on Nuclear Clean-up meeting at DTI, 20/3/03.

11.1 Professor Parry had attended the Nuclear Clean-up Research Coordination meeting at DTI on 20 March 2003 along with NSD 4a and advised NuSAC SCR of the interest in attending. The chairman thanked Professor Parry for attending on NuSAC SCR's behalf.

12. Any other Business

12.1 The chairman said that the issue of new SCR members to replace recent

retirements was being considered. Two candidates had been identified who would be invited to join the sub-committee.

Action 03/10 The chairman to contact prospective candidates for membership of NuSAC SCR.

12.2 The chairman suggested that there might be some benefit in NuSAC SCR having a meeting with the reactor licensees' technical representatives, and maybe with BNFL chemical plant and UKAEA staff. He asked the secretary to explore this.

Action 03/11 NuSAC SCR secretary to explore possibility of meeting between NuSAC SCR and reactor licensees' technical representatives, and maybe with BNFL chemical plant and UKAEA staff.

12.3 NuSAC SCR agreed that the minutes of the meetings should be placed on the HSE website. This is consistent with the intent of NuSAC.

13. Date of next meeting

To be arranged.

14. List Of Actions.

02/16 The IMC to produce a year end report on technical exchanges at the end of FY 03/04. (3.1)

03/1 HSE to update and reissue minutes of 31st meeting. (2.3)

03/2 NuSAC SCR secretary to combine the next meeting with a tour of Manchester University Research Alliance and graphite research team. (3.5)

03/3 HSE to inform the next meeting on NDA research of NuSAC SCR's views on

the need for a strategy that encourages generic research. (4.1.9)

03/4 HSE to include in future papers to NuSAC SCR additional data to illustrate actual past and predicted future trends of spend on nuclear safety research. (4.1.11)

03/5 HSE to revise conclusion to NuSAC/SCR/03/1 in respect of low priority NRI issues. (4.1.2)

03/6 BE to supply HSE with their revised 2003/2004 Programme of NRI related research. (4.2.1)

03/7 HSE to recognise NuSAC SCR's views when preparing the annual evaluation of the Levy programme. (5.2.1)

03/8 HSE to amend paper NuSAC/SCR/03/8 ahead of the meeting of NSRSG on 8 May 2003. (9.1 to 9.6)

03/9 HSE to keep NuSAC SCR informed on any problems with technical exchanges. (10.2)

03/10 The chairman to contact prospective candidates for membership of NuSAC SCR. (12.1)

03/11 NuSAC SCR secretary to explore possibility of meeting between NuSAC SCR and reactor licensees' technical representatives, and maybe with BNFL chemical plant and UKAEA staff. (12.2)