

**MINUTES OF THE NUCLEAR SAFETY ADVISORY COMMITTEE (NuSAC)
 MAIN MEETING HELD ON
 THURSDAY 3 JULY 2003
 AT ROSE COURT, LONDON
 (MEETING SERIES NUMBER 80)**

Chair:	Prof John Knott	
Members:	Mrs Sheila Ashford	
	Mr Barry Cripwell	
	Mr Andrew Clarke	
	Prof Sue Cox	
	Prof Keith Duncan	
	Dr Bryan Edmondson	
	Prof Tony Goddard	
	Dr Paul Haigh	
	Mr Bill Heafield	
	Prof Bev Littlewood	
	Dr Rod McKenzie	
	Mr Steve Napier	
	Prof David Owens	
	Prof Susan Parry	
	Dr Jim Whiston	
Observers:	Mr Patrick Robinson	Department of Trade and Industry (DTI)
	Cdre Peter Hurford	Ministry of Defence (MoD)
	Mr Jeremy Western	British Energy (BE)
	Dr Peter Manning	British Nuclear Fuels (BNFL)
	Mr Peter Bigg	British Nuclear Fuels (BNFL)
	Mr George Sallit	Atomic Weapons Establishment (AWE)
	Dr Mary Robinson	UK Atomic Energy Authority (UKAEA)
Presenters:	Mr Peter Welsh	UKAEA
	Mr Jim Furness	Nuclear Installations Inspectorate (NII)
	Mr Bill Thompson	NII
	Mr Steve Lewis	NII
Chief Inspector HMNII:	Mr Laurence Williams	
Secretariat:	Mr Kevin Allars	Secretary
	Mr Colin Potter	Temp Secretary
	Mrs Joyce Boorman	Secretariat
	Mrs Alma Edwards	Secretariat

**MINUTES OF THE NUCLEAR SAFETY ADVISORY COMMITTEE
(NUSAC) MAIN MEETING
HELD ON THURSDAY 3 JULY 2003, 10.00 AM AT ROSE COURT,
LONDON**

Item 1: Welcome, introductions and apologies

1.1 Apologies were received from John Head, Neville Moray, Wynne Davies, David Mason (BNFL Magnox), John Crofts (UKAEA), Alan Brandwood (AWE) and Andrew Clarke (DML).

1.2 The Acting Chair, John Knott, welcomed George Sallit who was deputising for Alan Brandwood and Mary Robinson for John Crofts, Peter Bigg from BNFL, together with presenters - Peter Welsh, Jim Furness, Steve Lewis and Bill Thompson, Colin Potter (Temporary Secretary as Kevin Allars' replacement) and Alma Edwards (who recently joined the Secretariat).

1.3 John Knott gave the Committee the sad news that Gordon Bellard had died on 26 June 2003 at his home in Italy. Gordon received an OBE in the 2003 Queen Birthday Honours List. He had written to his son, Mark, to offer the Committee's condolences. Mark had indicated that Gordon's NuSAC colleagues would be welcome to attend the funeral to be held in St Helens. The NuSAC Secretariat would liaise with him and inform members of the funeral arrangements.

Item 2: Minutes of the Main meeting held on 7 November 2002

2.1 The minutes were accepted as a true record.

Item 3: Matters arising

3.1 Action 78/1/18: The proposed BE paper on 12-hour shift-working was outstanding. Review Group 1 hoped to have the paper on the agenda for October 2003 meeting.

Item 4: NII-related business

Key Issues

4.1 NDA: NSD had restructured in November 2002 and Janet Wilson's Unit was working well in interfacing with the LMU. Setting up this Unit had meant that other operational work had had to be postponed. NSD was revisiting its estimate of the resources that would be needed to regulate the work that would arise from NDA activities. The Chair said that a NuSAC RG3 meeting was due to take place in early August to prepare NuSAC's response to the Bill.

4.2 British Energy (BE): An announcement was made on 2 July that Peel Park would be closing. BE was working towards moving technical staff to Barnwood. BE would be required to assess the full impact of the proposed closure on safety under its Licence Condition 36 before any action can be made on the closure of Peel Park.

4.3 Safety improvements at Dungeness were not being enacted as quickly as NII had envisaged.

4.4 Jeremy Western was asked about the situation at Torness in the light of the feedback from the Chief Inspector on a visit to what had been seen as Scotland's flagship plant. Mr Western commented on the recent difficulties faced by the station following a circulator impellor failure and the wider issues facing British Energy and suggested these could be amplified in the meeting due to be held with Review Group 1. NII was monitoring the situation and supported the company's efforts to improve standards.

4.5 BNFL: NII was pleased with the new BNFL focus on the high level waste tanks at Sellafield. BNFL had recognised the need for strong management and had brought the high-level liquid treatment plants and the vitrification plants under one management team. NII was monitoring the integrity of the tanks. NII has initiated talks with BNFL's technical, research and development staff to gain a better understanding of the key issues and BNFL's capabilities.

4.6 Tc99 Discharges: The overall message was that a lot was being done to reduce discharges. The 'six tests' to enable diversion of medium active concentrate had been met and this had allowed NII to agree to the operation. All new arising should now go into the vitrification route and hence this will dramatically reduce the long-term discharges of Tc99.

4.7 The NII Team Inspection recommendations have now been closed-out.

4.8 The National Audit Office (NAO) report on the cost of work on submarines at Devonport had been published.

4.9 Atomic Weapons Establishment (AWE): When the AWE sites at Aldermaston and Burghfield were relicensed in April 2000; NII undertook to review progress after 12 months. Some of the recommendations that resulted from the 12-month report have been more difficult to resolve and NII are approximately two-thirds of the way through dealing with them.

4.10 European Union (EU): Proposals by the European Commission to adopt powers in relation to nuclear safety were still under discussion. The proposals could have significant consequences for nuclear safety regulation in the UK and hence HSE is working closely with DTI.

4.11 WENRA was carrying out a pilot study on nuclear safety standards harmonisation and the work was being lead by NII.

4.12 ACTION 80/02/8: Laurence Williams to report back to the Committee at a suitable time.

4.13 Laurence Williams reported that he had visited the United States with Commodore Hurford to discuss nuclear submarine issues with the US Navy. They had interesting and open discussions that were very useful. It was important that good relations were established with the US, as they were the only benchmarks that NII could use to test its regulatory approach and understanding.

4.14 International Atomic Energy Authority (IAEA). Laurence Williams reported that under his Chairmanship of the Commission on Safety standards, considerable progress was being made in the development of the IAEA's safety standards programme. At the IAEA general conference in September 2003, the new strategy would be put to Board of Governors and if they agreed it would be published at the conference.

4.15 Nuclear Installations Inspectorate (NII): Laurence Williams reported that NII's latest internal assessment against the European Foundation for Quality Management Excellence Model had shown a considerable improvement over the past 18 months. NII's score put it into the top 25% of companies in Europe. To further improve NII's performance he was carrying out an internal assessment of NII against the IAEA International Regulatory Review Team (IRRT) requirements. Laurence Williams reported that a full IRRT from the IAEA could only be requested by the Government of the Member State. Most IRRT's had been carried out on Eastern European countries and of the Western countries only Switzerland had requested such a review.

4.16 Dr Whiston was concerned about NII's resources to provide assistance to improve nuclear safety in Eastern Europe. Laurence Williams said that although he had had to review priorities following the capping of his resources at 169 nuclear inspectors, support was not cut off altogether. However priorities had to be adjusted. NII had previously targeted 5% resources into international work, but this was not now sustainable and he had reduced this to 3%.

4.17 Laurence Williams said that an in-depth analysis of the needs of the workforce for the next 20 years was being undertaken in order to address the Sam Harbison review. Sue Cox reported that NII was generally commended by stakeholders for the work it does.

4.18 ACTION 80/02/9: Laurence Williams to give an analysis of the Recruitment Strategy at the October meeting.

Item 5: Sub-Committee on Research and Review Groups

5.1 The Chair reported that there was a realignment of Review Groups as follows:

- Review Group 1 - Safety Management and Performance
- Review Group 2 - Fuel Cycle Operations and Interim Safety

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|----------------|---|---------------------------------------------------------------------------------------------------|
| Review Group 3 | - | LMU/NDA and Future Decommissioning |
| Review Group 4 | - | Emergencies: There was no major activity. Barry Cripwell will keep a watching brief on this work. |
| Review Group 5 | - | MoD |

5.2 The Chair said that the Research Committee report went to the HSC on 10 June. There was concern regarding the Atomic Energy Authority restructuring. He said that the report on the situation on graphite had been accepted. He said that the SCR would visit the University of Manchester to see what was happening (BNFL agreed).

5.3 Susan Parry had attended the DTI Research Committee meeting. She said that DTI had a meeting with stakeholders. There was a proposal for an Executive Committee to oversee generic research. Laurence Williams said that better coordination was essential. The NDA wanted to pursue research into how equipment can be developed. However, there were grey areas and it was felt that a Coordinating Committee was necessary. The whole project was a challenge: funding; structure of the NDA; information on how the project was going and dialogue.

5.4 Jim Whiston said he had spoken to Jeremy Western and intended to cover the 12-hour shift issue, Torness circulator and wider issues in a forthcoming Review Group 1 meeting. Jeremy Western agreed it was a good time to share with NuSAC the impact of the financial restructuring currently under way following last September's collapse of BE.

5.5 Bill Heafield reported on Review Group 2. He said that a starting point for the short-term programme on B211 and viability of Magnox reprocessing was a meeting with Peter Manning, BNFL.

5.6 Following on from Laurence Williams' report, there was discussion centring on Tc99:

- Impact of work on their models
- Clear view of standards and the science behind NIREX
- Regulatory decisions/political spotlight.
- Contingency: working closely with the Company.

In the longer term, there should be an interlink with high levels of waste management. All agreed that it was important that the science was understood because NuSAC via RG2 may be asked, through the HSC Chair, to give a view.

5.7 Review Group 3: In Wynne Davies' absence, the Chair reported that there was an interface with the NDA. He reminded members of the meeting to be held in August. It was agreed that the matter should be thoroughly discussed and legal interpretation was necessary.

5.8 Review Group 4: Rod McKenzie said that there was no major activity within this Group.

5.9 Review Group 5. Steve Napier reported that the Group now had only 3 members. The Group was involved in the organisation of the October visit to the Atomic Weapons Establishment. The programme for the visit was being worked up. He said that a visit to Rolls Royce at Derby was planned. Also a return visit to Devonport. It was felt sensible to coordinate such a visit with a meeting of the Defence Nuclear Security Committee (DNSC), following the protocol on these matters adopted by the Chairs of NuSAC and DNSC.

5.10 Cmdr Hurford welcomed the tie up of the work of RG5 with that of the DNSC.

Item 6: UKAEA Strategy for Dealing with Wastes and Decommissioning of Plants at Dounreay (UKAEA)

6.1 Peter Welsh, UKAEA, gave a presentation and an overview. The restoration strategy started in September 2000; the strategy was a “living document”.

6.2 The aim was to achieve delicensing where possible. At Dounreay the “brown field” criteria had yet to be agreed, although there were parts of the site where long-term institutional care would be needed. With regard to emptying the shaft an application would be made to extend the licensed site area to facilitate this. There would be stakeholder consultation on the project.

6.3 Challenges included the introduction of competition, benchmarking, specification of standards of safety and environmental care, and the importance of change management.

6.4 NuSAC members noted the restoration programme would come under the auspices of the NDA/LMU. Members questioned whether more efficient use could be made of the existing waste treatment plants. Members agreed that licensees should consult stakeholders on major projects. Questions were raised regarding management succession planning at Dounreay. Mr Welsh reported that at Dounreay succession plans are in place and are reviewed annually

6.5 Peter Welsh said that he saw the main benefit from the creation of the NDA would be a more realistic strategic plan that was well defined with proper costings and a clear statement of requirements.

6.6 The Chair thanked Peter Welsh for his comprehensive presentation.

Item 7: Safety Performance Overview of the Major UK Nuclear Licensees Annual Update Covering the Period 2001/2 (NuSAC)

7.1 Andrew Clarke spoke to this item. He said that there were no immediate concerns and dose management remained good across the industry. Good practices contributed towards the continuing reduction in the numbers of workers in high dose bands. However, the continuing lack of data about BNFL contractors was disappointing. BNFL had indicated that they were taking steps to collect these data the previous year and this was still the case.

7.2 The numbers of enforcement notices remained fairly constant and there were no obvious learning points.

7.3 Laurence Williams said he could not say when he would have sufficient resources to allow him to produce an annual report on “Nuclear Safety in Great Britain” in which such statistics could be set out. Commenting on the figures, he felt they showed that there was no complacency amongst licensees and detailed pre-planning was enabling them to reduce worker dose.

7.4 The Chairman thanked Andrew Clarke for his comprehensive report.

7.5 ACTION 80/02/10: RG1 to produce a Safety Performance overview 2002/3 for the March 2004 meeting of NuSAC.

Item 8: Team Inspection into the Control and Supervision of Operations at BNFL’s Sellafield Site – 1999 – Lessons Learned (BNFL)

8.1 Peter Manning introduced the paper. He commented that to bring about change, the Team Inspection had been a very effective catalyst. He said that since the 1986 NII Audit of Sellafield, emphasis had been on Safety, Provision of Waste Treatment Plants and Productivity. There had been consistent improvement in safety statistics, the construction of a whole suite of new processing plants and an approximate doubling of productivity on site. However, from 1997 the site’s own reviews indicated that there needed to be a concentration on 3 areas:

- The condition of the assets and maintenance arrangements
- The depth of technical knowledge underpinning plants
- Effective use of the assets for manufacturing

However, the continued drive for cost reduction had presented sufficient attention being directed to three areas.

8.2 The NII report and Sellafield’s own perceptions were largely in agreement and the responses were agreed between BNFL and NII. Inevitably, there was some increase in scope of some of the responses as issues emerged but a good dialogue allowed aspects to be closed out at an appropriate stage. He said that it had taken an enormous amount of effort from a specially formed project. Over 1,000 people had been recruited, but the project had gradually become embedded to ensure there were ownership and a determination to continue.

8.3 Barry Cripwell on behalf of the Committee noted the transformation that had taken place, but also commented on the potential for the cycle to be repeated – particularly if cost became an over-riding consideration. Hence, there was a need for ongoing vigilance.

8.4 The Chair thanked Peter Manning for his presentation.

Item 9: NII Sellafield Team Inspection – NII Close Out Report (NII)

9.1 Bill Thompson, NII, presented this report. He said that the decision-making process was a major safety culture change. There were 5 key areas of improvement and what they meant for BNFL and NII.

BNFL:

- Manage change
- Deal with everyday work.

NII:

- Monitoring, assessing, judging and team inspections
- Prioritising
- Work with tight existing resources.

9.2 On close-out procedures, NII had to arrange a protocol with BNFL. The criteria were a task sheet showing that all requirements were met. NII checked in documentation and on the ground. Sustainability of changes was key.

9.3 The challenges were that it was a large task. There were a large number of competences – most of them in multi-disciplinary teams. It is hoped that the result will be a single system for delivery of DAPs and SQEPs. It is intended that there will be a 3-year plan for DAPs and a 5-year plan for SQEPs.

9.4 It was felt that monitoring change to manage sustainability would result in a substantial improvement in safety at Sellafield.

9.5 Peter Manning said that “compliance” had now become “ownership”.

9.6 In conclusion, NuSAC members felt that there was friction in the styles of management at Sellafield creating a lack of control. They felt that a watching brief should be kept on change in the management structure, and in particular succession planning. Members were assured by Laurence Williams’ statement that the NDA would have no role in setting regulatory standards. However, he reassured the Committee that regulators would ensure best practice was followed.

Item 10: Experience of ‘Dual Regulation’ at Devonport Royal Dockyard (NII)

10.1 Cdre Peter Hurford, MoD and Jim Furness, NII presented this item. Peter Hurford gave a summary of Paper P7. Dual regulation by MoD and the NII had existed since 1987 when MoD had contracted out the management of the dockyards, but the profile of nuclear regulation increased considerably when DML was awarded the contract for new submarine facilities in 1997 and MoD introduced more formal internal regulation two years later. The NII and MoD’s regulator, the Naval Nuclear Regulatory Panel had complementary but distinct roles. Recognising the potential for *dual* regulation, the pejorative implication being that safety issues are considered by

more than one regulator and conflicting requirements placed on operators, NII and the NNRP had established an effective and visible working relationship comprising:

- The MoD/HSE Agreement (Annex B)
- A formal Letter of Understanding.
- An annual joint study day.
- Regular review and liaison meetings with a hierarchy of management control and oversight.

10.2 NII and CNNRP agreed that for successful regulation, recognising that there are two regulators each with legitimate requirements, it is necessary for them to work in a *joint* fashion. This is readily achievable since the model for MoD regulation is based on the NII's licensing system. The key feature of this way of doing business is that the same set of arrangements / documents on any matter will satisfy the format requirements of both regulators; this will be considered jointly by the regulators in the context of their unique responsibilities, but one of them will take the lead in responding to the operator. Jim Furness said that there had been criticism of dual regulation in the past and a more efficient, joint style of regulation had now been established where, on matters of common concern, inspections were jointly conducted and one regulator took the lead in responding to the licensee.

10.3 Cdre Hurford was asked about the National Audit Office (NAO) report into the construction of nuclear submarine facilities at Devonport. He replied that the report had concluded that all the main parties had contributed to the regulatory problems and thus to the total cost increase. Dr Edmondson asked what "lead" meant? Examples were given where the lead organisation could be clearly identified:

- Reactor operation (for example reactor operation at the end of an overhaul)- NNRP
- Civil works and the relevant safety case – NII

10.4 NuSAC asked about costs. Laurence Williams replied that the way of working made the best use of available resources recognising the separate responsibilities of the licensee, NII and MoD.

10.5 The Chair thanked Peter Hurford and Jim Furness for their contribution.

Item 11: New NII Inspection programme – Report after one year in Operation (NII)

11.1 Steve Lewis said that there are 4 basic information groups:

- Site Inspection
- Licensee
- Determination of Competence
- Operational Feedback

11.2 He said that the inspection procedures were transparent. And followed a 3-year cycle, which included a generic inspection plant process. Inspectors exercised their judgment in applying the rating guidance.

11.3 The NII regulatory process followed a robust system of site inspection.

- Individual plant
- The site manager
- Senior Manager

11.4 The Chairman said that the Plan was forward looking and it concentrated on good practice. Laurence Williams said that the inspections are done against the NII plan, not the licensee. However, getting all the training done was time consuming.

11.5 Members made the following points:

- There should be consistency of inspection
- There should be a revision of inspector training and refresher training for existing inspectors.
- Career development review groups should be set up to deal with these points.
- Experienced staff should be recruited with the ability to be a site inspector within 3-5 years.

11.6 Jim Furness said that the regulatory review meetings were important, in that they allowed NII to adjust its resources to provide appropriate inspection, as shown at Rolls Royce, Rosyth and Barrow.

11.6 The Chairman commended NII on the approach.

Item 12: Any Other Business

12.1 The Chair asked about the position on the Magnox cooling pond water composition: Peter Manning said that a paper on water quality was produced in Autumn 2002. The position regarding alpha and beta had been stabilised. However, there were a number of additional issues, which had to be addressed such as corroded fuel and reprocessing.

12.1 ACTION: 80/02/11: Review Group 2 to visit BNFL.

Item 13: Date of next Meeting

13.1 Wednesday 15 October to Friday 17 October 2003 at Portland House, part of the Atomic Weapons Establishment complex, Aldermaston.

ACTIONS FROM MAIN MEETING HELD ON 3 JULY 2003

ACTION NUMBER:	ACTION	ACTION BY WHOM
80/02/8	Laurence Williams to report back to the Committee on the WENRA Study on Harmonisation of Safety Standards at a suitable time.	LAURENCE WILLIAMS
80/02/9	Laurence Williams to give an analysis of the Recruitment Strategy at the October meeting	LAURENCE WILLIAMS
80/02/10	A Safety Performance overview (2002/3) for the March 2004 meeting of NuSAC.	RG1
80/02/11	Review Group 2 to visit BNFL about Magnox pond water.	SECRETARIAT

ACTIONS OUTSTANDING FROM MAIN MEETING HELD ON 7 NOVEMBER 2002

ACTION NUMBER:	ACTION	ACTION BY WHOM:
78/3/19	BE to share details of the Torness gas circulator event at an appropriate time	BE
78/3/23	NuSAC to be kept informed of the developments of the IAEA Safety Guide on Radioactivity in Commodities	NII and SPD

ACTIONS OUTSTANDING FROM THE MAIN MEETING HELD ON 7 MARCH 2002

78/1/18	Paper on BE's 12 hour shift working and the need to change ways of working	BE/NII
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