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

9 January 2002

**INDUSTRY DIRECT PROGRAMME 1999/2000
HSE(NSD) ASSESSMENT**

Paper by HSE

INTRODUCTION

1. The Health and Safety Commission's (HSC) Co-ordinated Programme of Nuclear Safety Research applies to the nuclear reactor licensees and consists of three elements:

- Industry Management Committee (IMC) Programme
- Levy Programme
- Industry Direct Programme (IDP)

The Industry Direct Programme is defined as nuclear safety research conducted by the licensees for their own purposes which is or can be made transparent to the Health and Safety Executive's (HSE) Nuclear Safety Directorate (NSD).

1. HSE(NSD) has previously undertaken an assessment of the IDP for the financial year 1998/99 and this was reported in paper NuSAC/SCR/00/3 (Ref 1) This report contains an assessment of the IDP for 1999/2000.

2. The assessment of the IDP has particular significance at this time as a review of the HSC Co-ordinated Programme is currently underway and the licensees are keen to increase the emphasis on research to meet their own business needs. This assessment therefore considers the transparency and visibility of the IDP to help inform the new arrangements, as well as considering current arrangements.

ASSESSMENT

IDP overview

1. The HSC Co-ordinated Programme applies to the following licensees that operate nuclear reactors:

- British Energy Generation Ltd (BEGL)
- British Energy Generation (UK) Ltd (BEG(UK))
- British Nuclear Fuels plc (BNFL)
- British Nuclear Fuels, Magnox Generation Ltd (BNFL-MG)

2. The licensees have provided HSE(NSD) with a list of projects that they are claiming for the IDP including monetary values. The list provides breakdown of the programme as individual projects grouped under headings of the IMC Technical Working Groups (TWG) that would cover the work. It gives monetary values for each TWG grouping, but not for individual projects. The list is not included in this paper as the licensees consider the information to be "Commercial-in-Confidence"

3. BNFL has a significant research programme which is primarily aimed at nuclear chemical plant and not nuclear reactors. It has indicated that it does not want to claim any research for the 1999/2000 IDP. BEGL(UK) have not claimed any research under the IDP, although it is understood that they have access to the research undertaken by BEGL. Hence the only contributions are from BEGL and BNFL-MG.

Assessment criteria

1. The arrangements for the HSC Co-ordinated research programme are specified in the Memorandum of Arrangements (MoA) (Ref 2). This requires each individual licensee to forward, in October, a summary of the contracts it proposes to offer as research to be taken into account when defining the HSC Co-ordinated Programme. Details of the contracts, consistent with defined transparency and audit requirements must also be supplied. Under the transparency arrangements HSE(NSD) requires technical, financial and relevant contractual information.

2. To assess whether the IDP meets the requirements of the MoA the following criteria have been used in this assessment:

- Scope - whether the work is research and covers nuclear safety matters.
- Costs - whether the costs proposed by the licensee are realistic.
- Outputs- whether the research is endorsed by the licensee and whether the results are in a suitable form for dissemination.
- Transparency - whether the level of transparency is adequate

Application of these criteria has taken into account consideration of a possible increase in the significance of the IDP under future arrangements.

Appraisal

General approach

1. A limited number of projects proposed by the licensees for the IDP have been assessed. Since only BEGL and BNFL-MG have claimed research for the IDP and the previous study concentrated on BNFL-MG, this assessment places more emphasis on BEGL. As a result the assessment has reviewed 9 BEGL projects and 3 BNFL-MG projects.

Scope

1. The research work commissioned by the licensees for their own purposes is dependent on their operational needs. They have different needs and therefore very different projects for research. For the two licensees assessed, research work is identified by the appropriate operational units. There is no central co-ordination of research within the licensees' organisations as this is not needed to meet the objectives.

2. Both BEGL and BNFL-MG have provided a list of projects which they have claimed in the IDP and these have been collated under the headings of the TWGs. Both licensees show a range of projects across the technical areas and activities include:

- Safety analysis code development and upgrading
- Safety assessment methodologies
- Development of new technologies
- Material properties testing
- Standards development

3. For the projects assessed, the majority of the work that has been claimed can be classified as research work. There is a single case where there was non-research work which was claimed.

Costs

1. Both licensees have provided a list of individual projects that have been claimed for the IDP. Costs, however, have only been provided for technical areas and not for individual projects. This has led to some confusion when talking to the licensees staff as they have not been aware of what is incorporated into the IDP claims. The principal cause for this is that the coarse methods used mean that it is difficult to identify exactly what is being claimed. However this is acceptable within the context of the assessment.

2. Two of the projects sampled were international collaborative projects. These provide access to significant amounts of research for only a limited cost to the licensee. There is necessarily some loss of control of the scope of these projects due to the number of organisations involved, but they still form a cost effective means of gaining access to research results.

3. The costs of the individual projects have not been assessed in detail, but they do appear to be reasonable. The one example of inappropriate work is more than compensated for by the examples where cost contributions have not been included in

the estimates. For the work undertaken by BEGL and BNFL-MG, HSE(NSD) conclude that the cost estimates are realistic.

4. The costs that can be claimed for the IDP under the HSC Co-ordinated programme for the four licensees are:

	Budget	Expenditure
British Energy Generation Ltd	£10,937k	£11,198k
British Energy Generation (UK) Ltd	0	0
British Nuclear Fuels plc	0	0
British Nuclear Fuels, Magnox Generation Ltd	£2,229k	£2,229k
Totals	£13,166k	£13,427k

Output

1. The nature of the outputs is particularly important in order to inform the new arrangements. Over the projects assessed the outputs take many forms including:

- Company standards that have a review process including internal and external peer review and independent nuclear safety assessment (INSA).
- Formal reports that are endorsed by departmental or similar procedures
- Engineering assessment notes that have a similar endorsement procedure, but allow quicker dissemination of information
- Other less formal forms.

2. In general, the form of output is appropriate for the purposes of recording and disseminating the research information. There are, however a limited number of cases where the information is recorded in a more informal manner, but should ideally be formalised.

3. HSE(NSD) conclude that the licensees generally produce the results of research in an appropriate format. They should ensure that results are always recorded in suitable form with an appropriate level of endorsement within their organisation.

Transparency

1. Transparency consists of making the results of the research work available to HSE(NSD) on request. The licensees claim to have made it transparent already through a number of routes including:

- Discussion at TWGs.

- Use of results in safety analyses, referenced in safety reports.
- Plant upgrades, presented through the Plant Modification Procedure route.
- Specialist fora.

2. The transparency claims by the licensees have been tested by asking the HSE(NSD) assessors of their knowledge of the research. Whilst the assessors were aware of the majority of the work across the projects, the amount of knowledge varied. Some of the mechanisms for ensuring transparency were not as effective as NSD would wish them to be in the future arrangements.

3. HSE(NSD) has already recommended that the licensees should identify the scope of each project claimed in the IDP. This information would give the HSE(NSD) assessors more visibility of the detail of the programme and allow them to request further information where appropriate. Further details of the scope would therefore allow the transparency objectives in the MoA to be achieved.

CONCLUSIONS

1. The assessment of the IDP has addressed it against four criteria and found the position on each of these to be:

- Scope - with a single exception the work claimed by BEGL and BNFL-MG is suitable for inclusion in the IDP.
- Costs - the claimed costs of the over all programme are realistic, although there is some lack of clarity in the costs of individual projects.
- Output - the form of output is generally appropriate taking into account the significance of the research, although in a limited number of cases this is not so. The licensees should, therefore, ensure that a suitable form of output is always used.
- Transparency - There are a number of mechanisms for ensuring transparency to HSE(NSD), but they are not all as effective as would be desirable in the future arrangements. NSD need to discuss with the licensees how they could be improved.

2. Whilst the work itself is satisfactory, the main area where improvements need to be made, particularly taking into account the probable new arrangements, is transparency. Under the future arrangements, the licensees should better identify the scope of projects and should aim to improve the various mechanisms for transparency.

ACTION

1. The NuSAC SCR is invited to note the outcome of HSE(NSD)'s assessment of the 1999/2000 Industry Direct Programme of Nuclear Safety Research and comment on the information provided.

REFERENCES

<u>Ref</u>	<u>Title</u>
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<u>Ref</u>	<u>Title</u>
1	Industry Direct Programme 1998/99 HSE(NSD) Assessment NuSAC SCR paper NuSAC/SCR/00/3 dated 28 June 2000
2	Memorandum of Arrangements with Nuclear Licensees and Licence Applicants for Commissioning Safety Research dated April 1996.