

TECHNOPOLIS



**Review of the Health & Safety Commission's (HSC)
Nuclear Safety Advisory Committee (NuSAC)**

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Review of the Health & Safety Commission's Nuclear Safety Advisory Committee

1 Summary

1.1 The NuSAC Review

The Nuclear Safety Advisory Committee (NuSAC) is one of several expert bodies that the Health and Safety Commission (HSC) maintains in order to provide itself with access to independent expert advice, in this case on matters that may have a deleterious effect on the level of nuclear safety in the UK.

In line with all other HSC Advisory Committees, NuSAC must be reconstituted periodically informed by a review of the HSC's continuing need for advice and consideration of the structure, functions and working methods of the Committee in question.

This report presents the findings from such a review, carried out by Technopolis on behalf of the NuSAC Secretariat and the Chair of the HSC. The review has involved a comprehensive programme of interviews with current and past NuSAC members, as well as NuSAC observers and stakeholders in HSE and elsewhere in government.

1.2 The need for NuSAC in the future

NuSAC provides a valued source of independent advice and public reassurance regarding the nuclear industry, which remains an important area of economic activity and a high-hazard industry where there is potential for catastrophic harm.

The great majority of respondents believe that NuSAC makes a positive additional contribution to ensuring nuclear safety in the UK, however it is not possible to measure the added value of the committee (in terms, for instance, of the reduction in risks or precursors associated with a regulatory system that includes NuSAC as compared with one that does not).

At a cost of around £200K a year to the HSC/E, the Committee is not expensive. Even with its limited output, in terms of advice issued directly to the HSC, the committee would appear to represent good value for money, when compared with the social and economic costs of even a minor nuclear incident.

There have been few instances where the HSC has proactively sought the advice of the Committee in the past three years, however the Committee has maintained a substantial programme of work, providing an ongoing challenge function to both industry and the Nuclear Safety Directorate (NSD) on health and safety and its regulation. Equally, there have been few instances in the past three years where the Committee has proffered advice directly to the HSC, for instance as a stand-alone report on a specific safety or regulatory issue. Where it has issued written reports,

the Committee's views appear to be generally regarded as highly credible technical assessments and do get cited by third parties.

In the next three-year reconstitution period, the industry will undergo fundamental changes, including the arrival of the NDA and site competition, and continuing pressures on industry and regulatory resources. There is also press speculation about the prospect that a new nuclear power station programme may be initiated with novel reactor designs. It is therefore likely that HSC will rely on NuSAC advice more than was the case in the previous period.

Advice from NuSAC (as with other advisory committees) is needed only intermittently, and HSC could seek that advice through ad hoc means, issue by issue, whether that be through the creation of a fixed-term task group or a more open and consultative approach HSE has adopted in other areas. Ad hoc approaches can be slow, however, and given the nature of the nuclear hazard there is a case for the HSC to maintain a standing committee; an expert body that is able to provide definitive advice to HSC, within the limits of the current status of knowledge, quickly.

We recommend that:

- the HSC retain a Nuclear Safety Advisory Committee, and that it should move quickly to re-constitute a new Committee for a three-year term.
- the reconstituted committee focus on issues of strategic importance, emphasising the formulation of advice to the Commission.
- NuSAC implement a more discriminating process by which to decide matters of strategic importance to HSC, beginning with a more conscious approach to horizon scanning.
- HSC consider improvements to the interface between itself and NuSAC to enhance the interchange of ideas and information. For example:
 - The HSC chair to meet annually with the full Committee to brief members on HSC plans and to be briefed on emerging issues for nuclear safety
 - NuSAC to consider inviting the HSC Chair to attend their annual work-planning meeting
 - HSC to invite the NuSAC chair to attend a Commission meeting, to present the Committee's Annual Report
 - The HSC Chair and the NuSAC Chair to meet briefly at other times during the year, to review progress on the formulation of specific advice to HSC and to exchange views on other matters as necessary
 - The HSC Chair to extend an open invitation to the two 'nuclear' Commissioners to participate in NuSAC's formal meetings

1.3 The NuSAC terms of reference

The current terms of reference are clear in respect of the Committee's primary purpose, which is to advise the HSC on matters relating to nuclear safety.

The current remit is appropriate to an Advisory Committee. The openness of the terms of reference in terms of their thematic scope is appropriate, given the nature of the industry and the risks it must manage. Members and observers are content, in that they have free rein to consider *any* matter referred to the Committee, or which members themselves are aware of, which may have a bearing on nuclear safety.

We see no need for the reinstatement of dual reporting, although some members continue to be frustrated by the change made to the terms of reference in 2003, wherein the Committee was re-tasked to advise the HSC and not, as was the case previously, *both* the Commission and Ministers. Members believe that this change in reporting lines has weakened their perceived authority in the eyes of the industry and the informed public. This view is not shared by the Commissioners and HSE board members, and nor is the change in emphasis of great concern to the observers, either industrialists or those from other government departments.

The second strand of the NuSAC terms of reference relate to the need to maintain a view of the balance of nuclear safety research, a function carried out by the NuSAC Sub-Committee on Research (SCR), which reports directly to the HSC. This reporting route appears anomalous, and we recommend the SCR change its reporting lines, reporting to NuSAC which would in turn advise the Commission.

1.4 Future work plan

There is a high-degree of consensus among those consulted as to the key questions of relevance to the Commission.

For the Commissioners, the big issues concern the changes underway at present to the industry and in particular the introduction of competition on the supply side, and the creation of the Nuclear Decommissioning Authority (NDA).

The NuSAC members endorsed this interest in contractorisation, as well as offering many other topics for consideration. For the industry observers, the core issues concern the changing conditions and morale within the industry, resulting from reorganisation and re-licensing along with the creation of the NDA, and the economic costs of the regulatory regime.

We recommend that

- HSC is apprised of the views of the Committee more frequently, in particular on significant policy or strategy developments (for example, the Cox review of HSE's major hazards functions, or the regulatory impact assessment carried out for the

new SAPs) as well as developments in the wider environment (e.g. the value of a rolling programme of IAEA regulatory peer reviews and audits)

- The ongoing NuSAC-defined work programme be refocused on issues that carry with them a real and substantial risk of a reduced level of nuclear and radiological safety.

1.5 Membership of NuSAC after reconstitution

Membership ought to follow purpose, structure and working methods. The majority of NuSAC members and observers are content with the size and composition of the committee and see no pressing need to make it smaller or to change its balance. Several respondents did express concern, however, over the size of the committee suggesting that it was perhaps too big to conduct its business in an efficient and measured fashion.

On balance it would appear to be worthwhile reducing the size of the committee to make it more manageable, taking advantage of the natural retirements that follow the invocation of Nolan principles and a general desire to focus on fewer, more strategic issues.

A Chair and 14 members would appear to be a more manageable size than the present Committee and yet it would permit the appointment of two people to lead on each of a range of substantive themes. Such themes could include, for instance:

- Radiation protection;
- Decommissioning
- Human factors
- Contractorisation/industrial restructuring
- Defence nuclear operations
- Nuclear engineering
- Public interest

As a smaller Committee, NuSAC should be more responsive to unforeseen issues, with the possibility of co-opting new members with particular skills for a short time or launching task groups. This may enable the committee to deal with its somewhat indeterminate workload.

The focus of advice may evolve from one reconstitution period to another, and as such the membership of the reconstituted committee may be rather different from its current one. It would probably not be efficient to appoint members in the anticipation they would serve for a single term however, given the time and resources taken to recruit and induct new members.

The tripartite principle has served the HSC and its advisory committees well for over 25 years, but there may be scope for a less rigid application of that principle when

considering the skills/experience base that is best for the reconstituted Committee. It is of greater importance to ensure that the right people are appointed rather than their particular affiliations and this may mean that the Committee looks to multilateral rather than tripartite composition.

We recommend that the HSC and NuSAC Chair:

- Strengthen the public interest, appointing two public-interest members to the Committee, with candidates recruited from any constituency including the Non-Governmental Organisations (NGOs)
- Appoint members with particular knowledge of education and training, non-UK reactor technologies and the management of privatisation and industrial restructuring as experience in other high-hazard industries
- Use a more open and wide-ranging recruitment process than has been used historically, involving the press, with the search driven by the forthcoming work programme
- Appoint members in line with the combination of competence and stakeholder viewpoints needed, rather than rigidly applying the current tripartite allocations

1.6 Methods of Working

The Committee has a clearly developed modus operandi, which has been in operation for some time. The process is well regarded by most, however a number of criticisms were raised that are worthy of note.

There was a general concern among stakeholders, other than the committee members, that the Committee's dual strategy of Main and Members Only meetings had run its course and that the main meeting had become somewhat perfunctory, with little opportunity for meaningful debate or dissent.

We recommend that the, members-only meeting be stopped. This does not mean that the secretariat should not brief the chair on agenda items ahead of the meeting, nor indeed that the chair should not speak with presenters or members offline in order to better understand an argument, such that he can more easily facilitate a full and candid debate at the meeting. Equally, items that are deemed to be confidential can be flagged during the meeting, with the Committee being asked to approve an offline discussion under very specific conditions.

The majority of members and observers commended the practice of site visits as a means by which to enliven meetings and keep NuSAC's feet on the ground. Several others expressed mild concern that the visits tempted the Committee to become involved in the detailed, operational work of the NII, diverting attention from its primary purpose.

There was a range of opinion as regards the continuing need for and efficacy of the five NuSAC Review Groups. At one end of the spectrum, Committee members argued for

the retention of the RG system, saying that it has been a simple and efficient means by which to review issues and produce credible technical assessments and advice. At the other end of the spectrum, a second group, predominantly Commissioners and senior HSE officials, found the notion of sub-groups problematic, and especially where those groups had become standing committees in their own right, with an annual planning cycle driving the work programme of the Committee. This degree of self-tasking was deemed to be inappropriate.

On balance, it would seem fitting to implement a revised strategy, wherein advice on particularly involved and complex issues may be arrived at through the support of task groups, working to a clear brief and with a fixed timetable.

In practical terms, it is possible that the five Review Groups could be reduced to, say, two Task Groups, focusing on those issues where there is agreement as regards future challenges and uncertainty, for instance:

- The regulation of decommissioning and clean-up
- Safety management and performance

For each Task Group, the NuSAC Chair should define clear objectives and a concise programme of work, with the support of the Committee, and in consultation with the Chair of the Commission. In addition to these two groups, the Committee may choose to launch other task-orientated groups subsequently to carry out specific projects reporting back to the committee as appropriate.

The Review Groups have been the backbone of the Committee. This is where the in-depth analysis is carried out, with members continuing to research and debate topics in between the meetings, by telephone and email correspondence. However, the review process can be protracted, with specific reviews taking a year or more to conclude. An alternative, bimodal approach may be preferable, with the Committee offering timely, preliminary advice on an issue to the HSC following a limited debate amongst members (e.g. utilising e-mail). If the NuSAC advice is to investigate the issue thoroughly, then HSC should be asked to consider launching a more substantive review, to be conducted with all necessary haste, commissioned through its own policy-support research programme from an independent contractor. NuSAC could advise on the research specification and be invited to offer views to HSC following the conclusion of such a review.

The resource implications of such a brief would be managed in the first instance by interaction between the Committee and the HSE Secretariat, perhaps advised by experienced HSE research coordinators.

1.7 Openness and transparency

NuSAC would benefit from increasing its visibility among the informed public through more concerted dissemination and promotion of its outputs.

We recommend that the NuSAC Chair and Secretariat:

- Issue an Annual Report towards the end of the year, to recap on advice and achievements
- Upgrade the NuSAC web page, so that it can be found more easily and provide access, in a timely fashion, to public versions of all its written outputs, from its terms of reference to its advice
- Develop a template for its advice, setting out the original issue, and the origins of the concern, alongside its advice and recommendations to the HSC, and accompanied by an explanation of the evidence considered, its reliability, and any risks or uncertainties associated with this advice, including, where relevant, unresolved points of dissent

These improvements may have implications for resources in both the Committee and the NuSAC Secretariat and may point to the need for the creation of a new role within the Committee, to work with the Chair to oversee the management of its external relations with parties other than the Commission: a Deputy Chair could take the lead in the processing of NuSAC output for publication as well as providing the Committee with someone willing and able to deputise for the chair should that prove necessary.

Openness should be a founding principle and we recommend NuSAC seek to build its public profile further by holding at least one of meeting in public each year. There are two options, wherein the new Committee should either hold:

- An annual public meeting, with the Chair and members presenting the recent work of the Committee, with an invitation to the public debate past work and future challenges. This would be likely to be an additional meeting - and would involve a greater commitment from the Committee and the Secretariat
- One of its normal business meetings to be made open to public observers, e.g. at Rose Court, with space for perhaps 20 observers from the public, allocated on a first come first served basis. Sensitive matters (commercial, individual privacy or security related) could be dealt with at a subsequent meeting, or if that was not timely then in a short, closed-session at the end of the day. Having invited the public to attend it may be appropriate to allocate a short period (60 minutes) of the meeting for a question and answer session, perhaps with questions submitted to the chair in writing ahead of the meeting. If this open meeting was successful, then in time, as experience builds and the process is refined, the Committee may choose to hold more of its meetings in public.

2 Introduction

2.1 The NuSAC Review 2004/05

In line with all other HSC advisory committees, NuSAC must be reconstituted periodically, for a specified further period. A Chair and an appropriate number and mix of members will be formally invited for appointment (or reappointment) for that specified period – usually three years. Constitution of HSC’s committees is consistent with the Nolan Principles for public body appointments.¹

Under the new arrangements in GAP 2², published in 2003, HSC’s Advisory Committees should be constituted for a timespan related to achievement of the outcomes of their work plans (ideally for no longer than 5 years). Responsibility for initiating and co-ordinating arrangements for reconstitution rests with the Secretariat. Halfway through the final year of the Committee’s agreed term of appointment, the Secretariat will prepare a *raison d’être* paper for submission to the HSE’s Deputy Director General, setting out:

- An assessment of the continued need for NuSAC and, if necessary, a justification for its continued existence;
- A proposed work plan; and
- The size and proposed balance of representation on the Committee

It had been intended that the reconstitution would be a routine matter – reappointing existing members for a further 3-year period (providing they did not exceed the Nolan time limit on membership – 10 years); appointing new members as appropriate and issuing slightly revised terms of reference. However, recent discussion between the HSC Chair, the new NuSAC Chair and a Co-Director of HSE’s Policy Group, led to the conclusion that the structure, functions and working methods of the Committee should be subject to a more thoroughgoing review, prior to any reconstitution.

This report presents the findings from a programme of interviews with current and past members of the Health and Safety Commission’s (HSC) Nuclear Safety Advisory Committee (NuSAC), as well as Committee observers and stakeholders in HSE and elsewhere in government.

2.2 The Nuclear Safety Advisory Committee (NuSAC)

The Nuclear Safety Advisory Committee (NuSAC) is one of several expert bodies that the HSC/E maintains in order to provide the Commission with access to advice, in this case on matters that may have a deleterious effect on the level of nuclear safety in

¹ <http://www.ocpa.gov.uk/pages/downloads/pdf/codeofpractice.pdf>

² GAP2: A Guide to Managing HSC Advisory Committees, available on HSE’s website.

the UK.³ NuSAC differs from other Advisory Committees in that it predates the formation of the HSC in 1974, having been originally instituted in 1960 to advise the then Ministry of Power. In addition, it is among a minority of committees that are chaired by an independent chairperson where the majority are convened by a member of the Commission or a senior HSE official.

NuSAC meets three times each year and has an independent Chair and 20 members when a full complement is appointed: 12 are independent members; four are nominated by CBI; and four by the TUC. Members have their own areas of expertise which are relevant to the nuclear industry. Members of the Committee work in five Review Groups (RGs) to undertake NuSAC's workload more effectively. These are:

RG1 - Safety Management and Performance

RG2 - Fuel Cycle Operations and Interim Safety

RG3 - Nuclear Decommissioning Authority and Decommissioning Policy

RG4 - Emergency Arrangements

RG5 - MoD-related Topics

There is also the Sub-Committee on Research (SCR) that advises HSC, through the main committee, on the adequacy of the HSC co-ordinated nuclear safety research programme. In particular, the SCR indicates to HSC its view as to whether the programme complies with guidelines set by the Department of Trade and Industry, the Department accountable to Parliament for the safety of nuclear installations. In order to discharge its remit, SCR meets with HSE and the industry twice a year at appropriate times in the procurement cycle.

During the period 1999 to 2002, NuSAC, its SCR and RGs considered a wide range of nuclear safety issues, which included the following:

- Control of contractors and organisation change
- The storage of liquid high-level waste at British Nuclear Fuels (BNFL) site at Sellafield
- Management at BNFL following the NII Team Inspection report and the falsification of records report
- Undertaking an annual comparison between the safety performances of the major nuclear licensees

³ Whilst the Health and Safety Executive (HSE) provides the Commission with wide ranging advice on policy and operational matters, including matters relevant to nuclear safety, there has been a desire to maintain an additional source of independent and expert advice in certain critical areas. Advisory Committee (AC) may recommend standards and guidance and, in some cases, comment on policy issues confronting HSC or recommend an approach to a particular new problem. Some deal with particular hazard areas (e.g. toxic substances) and some with particular industries (e.g. construction and agriculture). Each includes a balance of people nominated by employer and employee organisations and, where appropriate, public interest representatives and other independent technological and professional experts.

- Decommissioning of the ponds and silos at Sellafield, Windscale Piles, Windscale's Advanced Gas-cooled Reactor (WAGR), and Magnox nuclear power plants (NPPs)
- Providing advice to the Minister of State for Energy on options for dealing with Prototype Fast Reactor fuel at Dounreay as part of DTI's consultation
- Providing advice to the HSC on the Department for the Environment Transport and the Regions' (DETR) CD 'UK Strategy for Radioactive Discharges 2001 to 2020'

2.3 The review methodology

The review is being carried out by the HSE Secretariat, in close cooperation with the NuSAC Chair, and informed by a stakeholder consultation carried out by an independent consultant, commissioned to gather data on the Committee's work and to consult Committee members and other stakeholders on the continuing need for the Committee. This report presents the results of that desk research and stakeholder consultation.

The desk research considered the Committee's terms of reference and its written outputs, as well as other constitutional documents, such as the Code of Practice for Scientific Advisory Committees. The main thrust of the review involved a wide-ranging consultation with NuSAC members and stakeholders, covering a common set of issues with questions as regards the continuing need for the Committee, its membership, structure and working methods. In all, more than 50 people were consulted and more than 40 of these people were able to contribute to the review by interview or in writing. Key stakeholders included:

- Chair and members of NuSAC and the sub-committee on Research
- Past members of NuSAC and the SCR
- Members of HSC
- NuSAC Observers (e.g. other government departments [OGDs] and licensees)
- Interested staff in HSE (including NII Chief Inspector)

Questions to be addressed included:

- Should the tripartite structure of the committee continue?
- What proportion of independents/TUC/CBI?
- Is there a role for an NGO member? How would this be best achieved?
- Are there models from other HSC ACs or external expert bodies that might be useful?
- Is there a role for Review Groups? What should they be?
- Is a sub-committee of NuSAC the best means of advising HSC on the adequacy and balance of nuclear research? Is there a need for the SCR to change?

- How can the forward work programme be more fully aligned with HSC/E's strategic aims and the desire of the HSC and NuSAC Chairs to be strategic and less detailed?

Contributors are listed in Appendix A, while the interview checklist is at Appendix B.

This report presents the results of this programme of interviews, structured around each of the main evaluation questions.⁴

⁴ A compendium of interview notes and written submissions has been compiled in a separate annex, to ensure the NuSAC Chair and secretariat gains the full benefit from the many and various observations and recommendations. However, this reference document is 170 pages in length and is not suitable for general distribution as, in many cases, the interview transcripts remain in note form and have not been approved for publication by interviewees.

3 The findings from the stakeholder consultation

3.1 A continued need for NuSAC

All respondents see a continued need for HSC to maintain NuSAC, as it provides a valued source of independent advice and public reassurance regarding the nuclear industry, which remains a major area of economic activity. Even though national nuclear operations are reducing, and the industry's safety record is exemplary, it is a high-hazard industry where the potential catastrophic harm is real. Even without a new-build programme, there remain genuine concerns in government and among the public as regards the safety of waste management, and decommissioning in the interim, and as such this is an industry where the HSC wishes to retain the support of a high-calibre, independent group to advise on high-level policy questions and emerging issues with potential implications for safety.

The current NuSAC members have a deep commitment to the Committee and see a continuing need for a body they believe provides HSC and the public with a cost-effective and vital source of independent oversight.

There is a continuing need for NuSAC. There are two justifications. The first is that there is widespread distrust in the nuclear industry by the public. The provision of an independent oversight committee for nuclear safety can contribute to an atmosphere in which the public can make a more measured assessment of the issues. The public will distrust assertions of safety made by the industry, and NuSAC can play a role that is more balanced than the NGOs such as Greenpeace, which are known to be "anti" nuclear in principle. I find in NuSAC a good combination of technical understanding together with a lively suspicion of assertions by the industry, which is the correct attitude to what is, basically, an industry that has considerable hazard potential. The second reason that NuSAC is desirable is that it provides oversight of regulation, not just of the industry. Here again this is desirable as a buffer between public suspicion (in this case of the civil service) and reality. Furthermore, experience has shown me that there are times when NuSAC can have an important input into decision-making by HSE, for example when the latter is under strong Treasury pressure to reduce costs. NuSAC has on several occasions had to speak out about the level of support for regulation that is desirable. NuSAC can both be critical of HSE (NII), and also give support to HSE when it may be needed in the interests of safety. In short, NuSAC has an important role to modulate the enthusiasm of the industry in the interests of safety, and to modulate the actions of the civil service in the interests of safety. The abolition of a body such as NuSAC would have an extremely bad impact on public opinion at a time when the government may be considering a new nuclear programme. Former HSE senior official.

I consider that there is a need for a body such as NuSAC at times of significant change in the nuclear industry, such as we have at the moment. NuSAC brings a wide range of talent and experience to assist and advise the HSC/E in a non-regulatory manner. NuSAC's input is independent of the industry, but reflects a very broad range of experience and attitudes within it and towards it. It is unlikely that the experience portfolio could be made available in any other form (other than a NuSAC 'clone'!) NuSAC member.

With the nuclear industry going through a period of change both with the formation of the NDA & within nuclear organisations, the need for NuSAC advice to HSC & where appropriate government ministers remains. NuSAC member.

It is the main national independent advisory committee for nuclear safety. Although it currently has a fairly low profile, should there be a 'new build' programme or any sort of nuclear incident the public would expect input from such a committee. NuSAC member.

By strategic oversight of the standards and actions of the operators and regulators, NuSAC gives reassurance to the stakeholders in the UK civil nuclear industry (e.g. nuclear operators, relevant Government Departments, NII, HSC/E, the public, etc.) that all reasonably practicable measures are being taken to ensure that nuclear activities are safe. NuSAC member.

Yes, but it must have evidence from HSC that its input is being acknowledged and being taken into account. The principal rationale is that it comprises a broader range of expertise than NII and that this and its independence from NII and licensees should give the HSC confidence that its advice and recommendations are to be taken seriously. NuSAC member.

An AC can be an important protection for the Commission meaning that it is not wholly dependent on the professionals that populate the HSE for guidance and advice; that it can take a second opinion. The independent advice carries gravitas and may also provide access to a range of views, (a diversity that may not emerge naturally from a professional agency). For it to work well it has to be representative of all key stakeholders, which is not always easy. NuSAC member.

On the question of effectiveness, the NuSAC members were unequivocal in their support for the work of the Committee and its value added within the wider safety regime. In addition, they believe the Committee, the members of which contribute on a goodwill basis, offers value for money, given that its cost to HSC/E amounts to less than the equivalent of two additional NII inspectors.

While the Committee members are, in general, strongly positive, there are areas of discontent relating (i) to the authority of the Committee as regards its access to HSC *and* Ministers, which is discussed below and (ii) to its rather bottom up approach to issue definition, which has increased the workload to levels that are not sustainable and made the management of its business rather difficult and outwardly a little chaotic. Commissioners, HSE senior officials and observers all endorse this need to become a little more focused, a little more strategic, as being the best way to improve its profile and control.

It is important to ask this question [about need and effectiveness], with care and with some data, to be sure that the committee in question is continuing to add value and that there is no better way for the HSC to obtain advice on a given risk(s). The answer may be 'no,' with risks diminished and or scrutiny and advice is available through another route; this was the case for the Health AC, which it has been decided should be closed on the grounds that it is no longer adding much value. HSC Commissioner.

The current rationale for NuSAC's continued existence is predominantly, in the perception of its members and stakeholders, that good work is being done and good people are involved. However, there is a notable lack of specific accountability, including demonstration that value is truly being added. Also, there is potential for improving NuSAC's contribution, possibly by some fundamental changes; for example, for NuSAC to take a holistic view, which considers environmental impact and issues as well as safety. The need for a means to hold NII to account for their

regulatory approach could also form one part of an enhanced terms of reference, as could equity/synergy across industry and a specific focus on KNOO (Keeping Nuclear Options Open). NuSAC Observer.

NuSAC's purpose and authority has not always been evident in recent years, and its influence on key issues (e.g. capability maintenance, NDA impact) has not always been clear. It is essential that NuSAC has a clear and supported role, fully owned and driven by HSC/DTI; this is not only to give it focus and purpose, but also to ensure NuSAC has the ability, authority and responsibility to take appropriate action. Any perception that it is an unfocused 'talking shop' is damaging, and undermines NuSAC's credibility and the commitment by members and observers. The current ambiguity is raising questions as to the value gained from continuing the significant investment of licensee and HSC/E resources. It is particularly appropriate now, as fundamental shifts in the British nuclear landscape are taking place, that such a review and strong restatement of HSC/DTI requirements is made. If this issue is not addressed, the rationale for NuSAC's continued existence in its current form is unclear. There are opportunities for NuSAC to have a powerful strategic role, but it needs both the mandate and delegated power from HSC/DTI to make this happen, and NuSAC's accountability needs to be correspondingly clear and strong. NuSAC Observer.

The Commissioners and senior HSE officials raised a question as to whether such specialist advice always needs to come from a standing committee, rather than being dealt with through a more contemporary model of regular stakeholder consultation and ad hoc task groups.

There is a question as to whether such advice needs to come from a standing committee, however in the case of the nuclear industry I believe it does (given the high hazard potential and the absence of an alternative source of advice, at least as far as I know). HSC Commissioner.

... the idea of partnership poses a challenge to the notion of advisory committees in general, which tend to want to tell other people and organisations what to do in contrast to current thinking wherein cross-departmental groups and networks come together to review or monitor issues, wherein decisions/agreements are arrived at within the group and will tend to involve action by several if not all parties, with each being responsible for their own resourcing. Where there is deep uncertainty that cannot be resolved by such cross-agency groups, then one can envisage work or advice being commissioned; ad hoc, project-based and possibly involving people and centres of excellence outside the UK. It seems unnecessary to maintain a standing committee to advise the Commission on one or two critical policy issues that may arise every 3-5 years. HSC Commissioner.

At this time however, in the case of the nuclear industry, given its high-hazard potential and the absence of an alternative proven mechanism for engagement and high-level advice, all respondents concluded that NuSAC continues to offer a justified means by which HSC can gain access to the desired assurances.

One other issue arose during the course of the discussions, which related to the quality of the relationship between the HSC and NuSAC, which, while being rather better than is the case with several other ACs, was felt to be less than ideal. According to members and NSD officials, weak demand from HSE has been a real source of difficulty for a Committee seeking to engage with policy issues and strategic concerns.

This view is confirmed to some extent by the remarks of the Commissioners, who stated that HSC does not have a good view of the work, outputs or successes of

NuSAC (or other Advisory Committees). However, it was not clear to either that this was an enormous problem; Commissioners have a wide-ranging remit, and tend to become aware of a committee only at the point that their interests coincide. For nuclear, that was the NDA debate in 2004, which led to the decision to hold the HSC's annual open meeting at Sellafield.⁵ The creation of a consolidated annual report for the HSC, covering all ACs, would be a welcome aid.

The Commissioners interviewed were unable to recollect any specific advice they had sought from NuSAC in the recent past, however a quick check of the Committee's archives revealed several examples of work by the Committee in response to requests for advice:

- Response to the Environment Agency's (EA) Proposals for the Future Regulation of Disposals of Radioactive Waste from BNFL Sellafield (2001). EA subsequently revised its proposals in line with comments from NuSAC and others
- Comment on the DETR CD 'Statutory Guidance on the Regulation of Radioactive Discharges from Nuclear Licensed Sites' (2001)
- Comment on the DEFRA CD 'Managing Radioactive Waste Safely' (2002)
- Comment on the DTI White Paper 'Managing the Nuclear Legacy – a Strategy for Action' (2002)
- Comment on the DTI paper 'Draft Nuclear Sites and Radioactive Substances Bill' (2003)
- Comment on HSC's 'Strategy for Workplace Health and Safety in Great Britain to 2010 and beyond' (2003)

The Chair of the HSC has some doubts about the efficacy of NuSAC, believing that a concern with technical details has diverted the group from its horizon-scanning role, anticipating and alerting HSC to emerging issues of strategic significance. Commissioners believe that NuSAC has not taken a lead on decommissioning and came late to the debate on the NDA. Equally, in 2004, when the HSC Chair asked all ACs for guidance on future 'big issues,' the response was mixed, and the NuSAC input was thought to be rather weak.

3.2 The NuSAC terms of reference

The Committee's terms of reference generated a mixed response. Members and observers were content with the scope of their remit, as defined in the current terms of reference, in that they have free rein to consider *any* matter referred to the Committee, or which members themselves are aware of, which may have a bearing on nuclear safety.

⁵ From the visit, it became clear that the existence of an independent advisory committee conducting site visits and conducting thematic reviews does have a powerful effect on the industry, showing that the Commission has an active interest in safety (strategic issues that is). Their existence provides assurance to the public too.

Early in 2003, the Commission reviewed its Advisory Committees and ruled that NuSAC should mirror the other Advisory Committees, advising the Commission alone.⁶ Hence, NuSAC's terms of reference were amended and are currently:

- To advise HSC on matters which are referred to it or which it considers require attention regarding nuclear safety policy and its implementation at nuclear installations
- To advise the HSC on the adequacy and balance of HSC's nuclear safety research programme

It should be noted that the changed terms of reference remains a source of concern for several of the Committee members, sufficient to lead them to suggest that they may not accept their appointment on the new Committee, should the HSC not reinstate the previous reporting lines to *both* the Commission and Ministers.

Members and observers continue to be frustrated by the change made to the terms of reference in 2003, wherein the Committee was re-tasked to advise the HSC and not, as was the case previously, *both* the Commission and Ministers.

Members believe that this change has weakened the perceived authority and independence of the Committee in the eyes of the industry and the informed public. This view is not shared by the Commissioners and HSE board members, and nor is the change in emphasis of great concern to the observers, either industrialists or those from other government departments. For the latter, there is the presumption that any matters arising of significance to third parties, should be brought to the attention of those parties, whether that is another regulator (e.g. Environment Agency), the NDA or the DTI. Clearly, the Committee would benefit in this aspect from guidance and support from the HSE Secretariat on how best to package such additional insight or concerns and where and how to feed that into the policy process in other government departments or even international bodies.

There is a difference of opinion clearly as to the primary role of the Committee, which for the HSC is about advice to them, while for many on the Committee, and others within the HSE's Nuclear Safety Directorate, the main role is as an independent *watchdog* overseeing the performance of both the regulator and the industry.

The HSC does not see the need for such a supervisory body, however they would be prepared to consider the arguments as to why the UK needs an additional, free-standing advisory group to Her Majesty's Government (HMG) in the area of nuclear safety. On balance, the Commissioners and HSE senior officials argued that this

⁶ The change (dropping that NuSAC additionally advises the Department of Trade and Industry (DTI) and the Ministry of Defence (MoD)) reflects the fact that Ministers with accountability for nuclear safety receive their principal safety advice from HSC. In giving such advice HSC is guided by NuSAC, by HSE, and, if it so wishes, by advice from a third party. The change was agreed by NuSAC on the understanding that the Committee could still approach the Minister(s) directly, and vice versa, should an exceptional need arise concerning the ability of NuSAC to give advice on guarantees of nuclear safety.

important and mature area of economic activity is carefully regulated by a comprehensive and intense regulatory regime comprising several hundred trained and accredited professionals working within the NII, operating a comprehensive and stringent permissioning regime backed up by international standards and monitoring. In this context, HSC looks to NuSAC to provide an additional and independent source of expertise and advice on emerging issues that may prove to be of strategic significance to nuclear safety and the management of risks to the public.

Many of the Committee members, and senior NII inspectors, are adamant that the Committee's challenge function is its principal *modus operandi*, and that its ability to promote improved safety relies heavily on the calibre of its members and the profile of the Committee, and in particular its open line to Ministers.

The major way in which the Committee has worked was through the close questioning of both licensees and regulators on the nuclear safety issues either referred to the Committee or raised by the Committee. When appropriate, the Committee would invite the licensees and/or the regulators to consider the points of view expressed by the Committee and to return to the Committee at a later date with their re-considered position. This is, in my view, a very effective way of improving nuclear safety. It is difficult to quantify the added safety in terms of Committee "outputs" and is not, I suspect, fully understood. But it depends crucially on the technical strength of the Committee and its independence, both of which must, in my view, be retained in any reconstitution if the Committee is to remain as effective as I believe it has been. NuSAC member.

The most important issue here is one that has been a source of friction in the last two years. The past terms of reference made it clear that the role of NuSAC is both to advise HSC and also to advise Ministers. It was clear that in the past it was regarded as unusual but by no means improper for Ministers to approach NuSAC directly and for NuSAC to approach ministers directly, in each case without going through HSC. In recent discussions NuSAC has been under strong pressure by Mr. Callaghan to have terms of reference that mean that NUSAC can only act through his office. I believe that it is of the utmost importance that NuSAC retains a real right to go directly to Ministers, if only in exceptional cases. Only if that right is retained will it be plausible to the public that NuSAC is independent, and able to monitor regulation as well as operations in the nuclear industry. Were this right to be removed, I would probably resign from the committee and I believe that most of the committee would do so. Note that we have had an example of the kind of problems that can arise in the last few months. We sent a letter to Mr. Callaghan for onward transmission to the Minister concerning plans for the implementation of NDA. This should have gone straight to the Minister, because it was of concern to the Minister, not to HSE. But because of the problems we had had over our right to approach the Minister directly (with copies to HSE) we went through Mr. Callaghan's office. The matter was of great urgency because the bill for the NDA was going through Parliament, and the plans for how the NDA was to be implemented were being formulated by the civil servants. The letter had not been forwarded several months after NuSAC submitted it, and only after the direct intervention of the Chairman of NuSAC was it finally forwarded to the Minister. It may turn out that because of the delay our advice cannot be considered – we will have to see. It should be added that there was nothing in the letter that was critical of HSC/E, and nothing that had any direct impact on HSC/E: the matter was of concern directly to the Minister. NuSAC member.

I would urge the chair and the committee to reject the revised TOR. The reduction in access to the secretary of state is a retrograde step and weakens the committee in its ability to scrutinise and challenge HSC and NII. The link to DWP is not ideal either, as DTI is the ministry with responsibility to parliament for the nuclear industry and DEFRA is accountable in respect of environmental protection. The

chair of the Defence Nuclear Safety Committee (DNSAC) meets with the Secretary of State at the MOD, but the chair of NuSAC does not. An annual meeting between the chairperson and the DTI SOS, for 30 minutes, would be of great value to the Committee in terms of its reputation and motivation. NSD official.

It is not clear how this difference can be reconciled, as the Committee members clearly believe that this process of detailed scrutiny and close questioning of licensees and regulators is the most effective means by which to engender safety and to reveal issues of concern that warrant bringing to the attention of the HSC. In practice it will be for the Chairs of the Committee and the HSC to keep the situation under review as to whether it is feasible to attend solely to matters of strategic importance without the level of detailed, operational scrutiny that has characterised the work of the Committee historically.

There was general agreement that the Committee should seek to address itself to a small number of issues of strategic importance. However, there were mild concerns expressed too, with regard to the work of the Committee and its supposed alignment with HSC strategy more generally, with a majority of members and NSD senior officials arguing that NuSAC should concern itself with nuclear issues first and wider HSC strategy second. For many of the responding members, the process by which the annual work plan is developed will naturally deal with the question of strategic alignment.

NuSAC is by no means a typical HSC Advisory Committee so I don't think that too much emphasis should be put on aligning its programme with HSC/E's strategic aims, which, from my experience, tend to be dominated by conventional hazard "thinking". However, NuSAC's programme clearly needs to pick up relevant parts of the HSC/E strategic plan and factor them into its actions. The most important thing is for NuSAC to scrupulously avoid the temptation to become involved in detailed licensing issues and interfere with NII's proper role. Former HSE senior official.

A meeting of NuSAC Chair & Review Group (RG) convenors in December 2003 aligned long term NuSAC work programme with the HSC/E's strategic aims. Each RG topic was referenced to HSE criteria. The meeting focused on strategic matters & was to be annual, though it has not yet happened in 2004. I see these meetings as being important in keeping the committee focused on strategic matters. NuSAC Member.

NuSAC must be able to retain its role to initiate projects even if it does not carry out all the strategic work that HSE believes to be important. I do not believe that NuSAC should concern itself only with strategic issues. For example, to do so would have meant that the detailed intervention by NuSAC at Dounreay would not have been undertaken. I am worried by the phrase, "fully aligned with HSC/E's strategic aims", if it implies a curtailment of NuSAC's ability to set its own agenda, and while I see the strength of "going strategic", there will be cases where what is wanted is detailed tactical intervention. NuSAC member.

I see no conflict between NuSAC's work and the HSC/E strategic aims – such a conflict would be readily apparent and easily resolved by feedback from the HSC/E in response to the NuSAC programme details, or even earlier by engaging more closely in the development of NuSAC's forward programme. NuSAC member.

I do feel that members will contribute effectively to strategic issues if they are fully informed/trained about/in the procedures and structures that govern and constrain industry and the NII – the current culture of the expert in a specialised area having to

contribute to a wide ranging discussion and “learn as they go along” is sub-optimal and limits their strategic input. NuSAC member.

Advisory Committees should be briefed on HSC mission/strategy as a matter of course, and possibly on an annual basis through a meeting between all chairs and the chair of the commission plus several commissioners. ACs should be required to respond to new strategies setting out the implications for the committee in question and its work and any decisions as regards the need to change/re-focus their activities. They should not be given free reign, but rather should reflect the priorities/values of the HSC, which they are there to advise. So current committees ought to be required to adjust to the fundamental changes set out in the HSC 2010 strategy, such as the partnership (joined up government) ethos which runs right through it. I have a concern that nuclear in particular operates very happily inside its silos, and that NuSAC is similarly distant. HSE senior official.

3.3 New functions

Interviewees were asked whether the terms of reference were restrictive in any way, or whether in practice there were functions that NuSAC ought to perform but did not.

The majority of respondents believe the terms of reference strike the right balance with a specified focus on nuclear safety, without further prescription of either its thematic priorities or its functional process.

A minority of members and observers suggested that it may be helpful to deepen the terms of reference, to be clearer about the limits of the Committees remit which at present is wide-ranging, covering matters of nuclear safety, in relation to the operation of the nuclear industry, military installations, regulation, and waste disposal. Historically, the emphasis has been on generation, however there are numerous questions around military installations, decommissioning and waste and it may be appropriate to draw out these issues in the terms of reference, possibly as a subsidiary statement relating to the objectives of the Committee in the medium-term. The following excerpts present a number of thoughts regarding the changing scope of the work of the Committee.

There is a problem over the interface between safety and security. I feel that there are some issues of security (for example against terrorism) that have safety implications but we have found it difficult to discuss such matters because our remit at present excludes security. I am not sure how this is best handled, but it needs some thought. NuSAC member.

The inclusion of civil and military safety issues within the committee’s remit was a later extension and did create certain difficulties for NuSAC. Perhaps it would be better to cede responsibility to the Defence Nuclear Safety Advisory Committee (DNSC), which reports to MOD and is chaired by Sam Harbison former Nuclear Chief Inspector. Senior HSE official.

NuSAC ought to expand the scope of its work to encompass international issues, from the EU’s efforts to add nuclear safety to the competencies of the Commission to compliance with two nuclear conventions to conformance of UK standards with IAEA standards. Senior HSE official.

Respondents were less enthusiastic about new functions, suggesting that the Committee has a sufficiently challenging remit as it stands. However, there were several suggestions, one relating to the Committee’s role in explaining nuclear risks to

the public and the second a suggestion to implement a regular (annual) horizon scanning exercise.

Possibly the Committee might take a higher profile in explaining the management and control of nuclear risks to the public. NuSAC member.

Possibly, it may have an opportunity to play an educational role with the informed public, partly as a consequence of its move to more open methods, but possibly also through a more active and visible role for the committee in public debates and events (via the chair person, rather than members of the committee turning up at conferences or being interviewed by the Press, etc. Former HSE senior official.

In order to provide timely advice, the Committee needs to have mechanisms in place to consider on a regular basis whether new issues are emerging, which may have implications for nuclear safety, and which warrant further consideration. This may involve a debate of the issues based on a series of invited papers from interested and knowledgeable parties, through to a more thorough status of knowledge review to establish precisely our gaps in knowledge, and the risks implied. In some cases, this may lead to advice to the HSC/E to consider sponsoring scientific research, perhaps jointly with the support of licensees, or possibly through the UK grant-awarding research councils. In some cases, international initiatives may be warranted. New or unexpected developments may of course give reason for committees to review advice that they or their predecessors have issued in the past.

Industry observers asked whether it might be possible to add a formal arbitration function to the NuSAC remit, although it was acknowledged that where licensees have concerns, for example over the intensity and economic implications of regulation, it was possible for these to be brought to the attention of the NuSAC Chair through a simple letter.

There should be the opportunity for licensees to request the attention of NuSAC to issues that concern them. NuSAC Observer.

The industry needs some sort of appeal process and would welcome NuSAC arbitration. At present, it is necessary to go up the NII management chain, as no other public body deals with complaints about the regulatory burden. If industry does not like the response, it has to go to law. In practice, few complaints are raised, and it is very unusual for licensees to take the regulator to the courts. NuSAC observer.

3.4 Future work plan

All respondents were invited to put forward their thoughts regarding the emerging issues and areas of change with possible implications for a diminution in current levels of nuclear safety.

For the Commissioners, the big issues concern the changes underway at present to the industry and in particular the introduction of competition on the supply side, and the creation of the Nuclear Decommissioning Agency (NDA).

The most important impact on the UK nuclear industry over the next 5 years will be the early activities and decisions of the NDA. NuSAC will need to be in a position

to provide reliable and helpful advice to NII and the industry on the issues that will undoubtedly arise, such as the prioritisation of different types of nuclear plants for decommissioning and clean-up. Former HSE senior official.

The NuSAC members endorsed this interest in the impact on safety of contractorisation, and in addition, most proffered much longer lists of potential topics for future consideration. There was a general consensus that NuSAC ought to continue to perform its historical role of monitoring the safety at AGRs and Magnox stations and MoD establishments, their management, structural safety, staffing levels and expertise, associated fuel handling and storage, reprocessing and security.

- Monitoring the continuing safety (including structural, management, staffing levels and expertise) of the older nuclear plants
- Monitoring the human skills issues for current safety and possible “new build”
- Development and monitoring of any possible ‘new build’ programme
- Input into the possible EU Nuclear Package
- Possible development should ‘security’ be added to NuSAC’s Terms of Reference
- Safety of nuclear materials transport
- The impact of the Civil Contingencies Act 2004 on emergency response arrangements at licensed sites (MOD and civil)
- The prioritisation of the pond and silo work at Sellafield
- Monitoring safety at MOD operations, including propulsion programmes
- Expansion projects for nuclear weapons (AWE)
- Review of the adequacy of the UK regulations and laws, which may be considered to be somewhat old fashioned when compared with the arrangements in use in several other leading nuclear countries

For the industry observers, the core issues concern the changing conditions and morale within the industry, resulting from changes to the licensing regime and the creation of the NDA and the economic impact of the regulatory regime. The industry observers, for example, would like to see NuSAC review NII Safety Assessment Principles (SAPs), and to check the regulatory impact assessments associated with this and other developments. The industry representatives clearly believe that the level of regulation is disproportionate to the risks, and that in the longer term this may have deleterious effects on the safety record, rather than positive. They also raised as potential issues the *life extension* of plant, and the potential future development licensing non-UK reactor designs.

Particular issues that I see NuSAC advising on include: the NII’s revised Safety Assessment Principles; a possible hazard index to help prioritise different types of nuclear plant for NII/NDA purposes; NII’s approach to licensing and inspection, particularly of shutdown plant. I would also expect NuSAC to continue to advise on scientific, technical and management issues arising from the continued operation of existing nuclear plants – and possibly new designs. NuSAC member.

What is clear from this long list of issues, is that NuSAC requires a clear process by which to evaluate each idea and to establish its relevance from a safety perspective

and its potential significance in terms of the nature and extent of the risks/uncertainties posed by it.

3.4.1 Development of the Work Plan

Commissioners and senior HSE officials expressed a degree of concern over the process by which the NuSAC work plan is developed, and in particular the tendency for the individual Review Groups to take a lead in drawing up a wide-ranging and comprehensive programme of visits and topics for review. The result was felt to be insufficiently strategic, while at the same time generating a substantial workload and forward commitment that may not be wholly justified in terms of either risks or value for money.

To recap, NuSAC's work plan is developed, in the autumn of each year, by consultation between the Chair, RG convenors, SCR Chair and the Secretariat. They may meet, if necessary, to discuss priorities. The work plan includes issues on which requests for advice have been received from the HSC, issues identified by the RGs or by the Committee (at site visits, for example) and issues on which advice has been sought by NSD or other Directorates/Divisions of HSE. The NII is asked to identify any anticipated issues or milestones. Requests from HSC and government ministers are given highest priority.

The HSC Chair is respectful of the wider process, and the care with which work is pursued and progress monitored, however he would like to see the issue-development process modified slightly, to involve a wider range of stakeholders in the generation of issues (perhaps an annual event, or horizon scanning exercise) and to invoke more stringent selection criteria to arrive at a slimmer work programme, that fits rather more closely with the strategic concerns of the Commission. The HSC Chair would like to agree the final plan.

3.5 Membership of NuSAC after reconstitution

3.5.1 Committee size

Membership ought to follow purpose, structure and working methods. The majority of NuSAC members and observers are content with the size and composition of the committee and see no pressing need to make it smaller or to change its balance.

Several respondents did express concern, however, over the size of the committee suggesting that it was perhaps too big to conduct its business in an efficient and measured fashion. Industry observers expressed concern that at recent meetings, the size of the committee and the scope of the agenda had led to a rather clipped approach to the presentations and discussions in the full meeting, with the result that people left feeling that issues had not been aired fully and, from an industry point of view, the regulator's view had prevailed.

The age profile of the committee was a source of concern for some commentators, with too many members being of retirement age. This causes two problems, the first, and most critical, is that NuSAC members may be somewhat out of date with respect to their detailed understanding of the industry, and secondly, retired individuals tend to have the time and space to pursue issues in detail, and pull the committee in general into the technical detail and away from the strategic issues.

The size of the committee should be determined by the range of strategic issues in play – and the competencies demanded – as well as the range of perspectives (stakeholders) one would wish to engage.

Members are not remunerated, which may be a limiting factor too as members have to balance the demands made upon their time by NuSAC with other commitments, which means that both the Committee and its Review Groups must be over-populated in one regard, such that they are able to function with the sub-set of members available to deal with a given issue or meeting. The majority of respondents believe that the pro bono nature of the work gives the committee extra credibility, and reinforces its perceived and real independence.

Commissioners and HSE senior officials see a case for adopting a more formal arrangement, with membership being advertised openly and remunerated in line with other advisory committees elsewhere in government. However, while an attractive idea in principle, the cost was thought to be prohibitive in the current circumstances, and especially as such a precedent could easily translate into a requirement to remunerate all advisory committees.

On balance it would appear to be worthwhile reducing the size of the committee to make it more manageable, taking advantage of the natural retirements that follow the invocation of Nolan principles.

There was a split in the opinions over length of service, with several members suggesting that it can take two or three years for people to become *productive* within the committee and that the longer-serving members can be the most effective at challenging the completeness and accuracy of the papers or other submissions made by either the regulator or the licensees.

The HSC Chair took an opposing view suggesting that a three-year term, renewable just once, was appropriate, with membership rejuvenated constantly, to ensure that knowledge of the industry and its risks remained up to date and that the Committee retained a critical ethos.

In addition to seeking views on the appropriate size of the Committee, the review has considered both the competencies likely to be needed by the Committee and as well as the balance of interests and perspectives that ought to be represented.

These are challenging and multifaceted issues, and the range of expertise required may not become fully apparent until the Committee has begun its work. Where a gap, or gaps, is observed the Chair of the Committee should raise the matter with the secretariat with a view to reviewing its options, whether that is to co-opt an appropriate expert or to call off advice from an authoritative on a fixed-term, commercial basis. The former approach is perhaps most appropriate where the *missing* competence is expected to be of importance to the Committee for an extended period and across several issues. The latter option is perhaps most fitting where the requirement is specific to a single issue, or task, and where the input is needed quickly. In both cases, the Chair and the secretariat would need to draw up a specification sufficient to use as the basis for either a person search (recruitment) or the purchase of the necessary professional services.

There was a view, articulated most strongly by the three Commissioners and all of the senior HSE officials, that in the future, advice on nuclear safety should be rather more issue driven and that, in some ideal sense, the question concerning the balance of expertise should be asked on every occasion advice is sought. While a totally ad hoc approach may yield advice that is complete and robust, it can be costly and slow to implement, and is rather impractical where, as with nuclear safety, there are a steady stream of issues to be resolved. In these circumstances, a standing committee is a better solution, wherein the Commission may anticipate timely and sound advice as issues arise or as the Committee discerns matters of possible concern for the future, as well as the benefits that derive from the partnership (credibility in the eyes of the informed public as well as confidence among the wider public).

In the case of NuSAC, a hybrid may be appropriate; a small Committee that expects to vary its geometry from time to time as its work unfolds and with it the need for particular competencies and perspectives. This ebb and flow may be addressed by the Committee co-opting additional members or by the creation of task groups, with a clearly defined goal and an end point.

3.5.2 Representation of interested parties

The tripartite structure generated mixed responses,⁷ with the majority being in favour of its continuation, although a good proportion of these individuals suggested that the membership ought to be extended, becoming multilateral rather than tripartite, to include people with an understanding of the values and concerns of stakeholders that have not been involved directly in the past. In practice, people expect the Committee to comprise experts with an appropriate mixture of stakeholder viewpoints. There was no great interest expressed in the absolute numbers of each affiliated group that were appointed to the committee, with most members and observers arguing that the Committee operates as a collective, drawing on a range of viewpoints and competence.

⁷ The membership of NuSAC reflects that of HSC in that it has members nominated by both the Confederation of British Industry (CBI) and the Trade Union Congress (TUC), although NuSAC has a majority of independent members and an independent Chair. Members generally bring to the Committee expertise relevant to nuclear safety.

Several respondents – the three Commissioners, senior HSE officers and senior officials at other government departments – see the notion of tripartism as being rather old fashioned; a legacy of the prevailing political conditions in the mid-1970s when the Commission was created. For this group of respondents, the issue on which advice is being sought should determine the composition of the committee, and the stakeholders included. In most cases, these advisory bodies will be multilateral with a membership that goes beyond the triptych of government, employers and employee representatives. Increasingly, advisory committees are expected to frame their advice to take account of social and ethical issues, as well as the concerns of the public and other stakeholders.

The majority of respondents had no strong views as to the precise number of members, nor to the allocation of appointments by representative group. For those few people that did express an opinion on this directly, it tended to be a suggestion that HSC/E reduce the proportion of appointments made by the CBI and TUC. Several commentators responded to the question indirectly, suggesting that the issuing of a public advert describing the role of the committee and the calibre of individual required, was a more appropriate, contemporary, approach to the identification of candidates and the constitution of a balanced committee.

The majority of respondents supported the proposal to include a new member on the reconstituted committee with a background in Non-Governmental Organisations, as this was felt to be an important group of opinion formers whose views on nuclear safety have a strong influence on public concerns better dealt with when framing advice rather than in defence of that advice. While the proposal was endorsed in principal, several NuSAC members, and NSD officials, signalled caution with respect to such an appointment and asked that the NuSAC Chair and secretariat monitor its impact on the work of the Committee. Two issues were raised as being worthy of further reflection and future monitoring:

- NuSAC is a collective, producing consensual advice and recommendations based on full and frank debate amongst its members; members do not *represent* their employer or its constituents in the manner of a delegate to an inter-governmental treaty. While members may hold a particular view out the outset, they have not been dogmatic, and tend not to block or obstruct the development of an argument and its resulting conclusions. These commentators suggested that the NGO appointment, and his or her employer, should be required to accept that they are there to offer a particular perspective on any given issue, and not to pursue a singular cause
- NuSAC has been characterised by full and frank debate. Certain members fear that pursuing greater openness and public scrutiny may compromise its high levels of disclosure as a result of the inclusion of an NGO member, many of which have a predominantly negative view of the nuclear industry and a track record in the dissemination and public trial of information regarding nuclear risks. Paradoxically, licensees were supportive of the proposal to appoint an NGO and did not foresee a risk of increased information management

The Commissioners suggested that the public interest ought to be strengthened. At present, there is only one member appointed specifically for her command of public interest issues, and it was felt that the contribution of lay members, based on long-standing experience of other advisory committees, tended to be better articulated and more fully appreciated where there were two or more. That said, a large number of respondents remarked on the consistent value of the interventions and contributions of Sheila Ashford.

3.5.3 Competencies

At present, NuSAC is dominated by experts with a scientific or technical background in the civil nuclear industry, with competence in each of the following broad fields:

- Radiation Protection
- Engineering and control
- Safety management, including management of contractors and emergency arrangements
- Operations, including decommissioning and new plant

Given the remit of the Committee, it includes members with experience of civil operations and defence. In addition, the Committee includes members with experience of safety management in other high-hazard industries (e.g. chemicals) as well as defence and a single member representing the public interest. The members made reference to a skills matrix prepared by the Chair and the Committee, presented in Exhibit 1 below, and which reveals the emphasis of the current membership on radiation protection and engineering.

We asked all respondents for their views on the Committee's blend of skills, and whether there were any additional competencies the Committee ought to have access too.

The Commissioners and HSE senior officials did not feel in a position to offer any comment on the balance of competencies, however none was aware of there having been any shortcomings in advice and reports, which could be attributed to gaps in skills or expertise. They did reiterate their concerns in principle as regards the number of members with a critical, non-nuclear perspective. Equally, competence was linked to length of service, with the Commissioners, and several observers, arguing that the Committee needs to be re-constituted regularly with members serving rather less than the Nolan maximum of 10 years.

The NuSAC members did comment and all expressed themselves as being broadly content with the range of competencies at the disposal of the Committee. One member pointed out that the retirement of certain members, following the implementation of the Nolan principles, was going to lead to a loss of important experience, which would need to be remedied in the reconstitution of the Committee.

In addition to these Nolan losses, individual members mentioned several skills gaps including a defence specialist and one or more people with experience of high-hazard process industries operated on a fully commercial basis.

While there are members from the defence nuclear industry contractors, and with considerable experience of observing the defence nuclear programmes, I note that there are no members with direct experience of managing the defence nuclear programmes. Such experience might be valuable, not only in considering the defence programmes, but also in reading experience across to the management of the civil nuclear programmes. The Chairman might wish to consider the appointment of such a member, perhaps a recently retired senior MoD official, either uniformed or civilian. NuSAC member.

With the introduction of the NDA, it would seem appropriate to appoint a person with large-scale industrial financial/project management skills. Another industry observer echoed these sentiments.

There should be more emphasis on the appointment of members with recent experience of working in high hazard industries that are operated on fully commercial lines. Such style of operation brings new challenges and opportunities, which need to be fully understood by NUSAC if it is to accurately review the safety of the nuclear industry. This aspect will be particularly relevant to the NDA and decommissioning programme, and in the event of any new build. NuSAC observer.

Observers were content too, in the main. Although the industrialists were somewhat disapproving of the academic-industry balance, arguing for a reduction in the former and an increase in the latter in the new Committee. Their argument hinged on the idea of proportionality, with the academic members having less of a grasp of the practical challenges and economic conditions within which the licensees manage risks. There was concern expressed too as regards the average age of the members of the Committee, which, when taken together, means that a good proportion of the members have no recent experience of safety management.

Overall, and in light of the likely future work programme, there would appear to be a case for replacing departing members with additional people with experience of:

- Industrial restructuring and privatisation in high-hazard industries
- The management of decommissioning
- Employment, skills and training
- Environmental issues

Exhibit 1 Person and Skill matrix

Expertise/disciplines	Name	Affn.
Radiation Protection		
• Radiochemistry	Wynne Davies	CBI
	Steve Napier	TUC
• Radiochemistry and Neutron Activation Analysis	Prof. Susan Parry	TUC
• Health physics	Barry Cripwell	TUC
Engineering		
• Chemical engineering	Bill Heafield	IND
	Dr Paul Haigh	IND
	Steve Vbranch	IND
• Control and instrumentation	Prof. David Owens	IND
	Prof. Robin Bloomfield	IND
• Metallurgy	Vacant/was J Knott	IND
Human factors		
• Industrial (Occupational) Health & Safety	Prof. Sue Cox	IND
• Ergonomics and cognitive factors	Prof. Neville Moray	IND
• Personnel training and selection		
• Human error and accidents		
• Risk management and estimation		
Safety management		
• Emergency arrangements	Dr Rod McKenzie	IND
• Chemical industry	Dr Jim Whiston	CBI
• Management of contractors		
• NII Assessment		
• Regulatory practice		
• Management of waste & spent fuel		
• Benchmarking		
Business Activities		
• Operations (reactors)	Andrew Clarke	CBI
• Operations (non-reactors)		
• New plant (reactors)		
• New plant (non-reactors)		
• Decommissioning	Bryan Edmondson	CBI
	Paul Haigh	
• Negotiations in Nuclear Industry	John Billard	TUC
Defence issues	Andrew Clarke	CBI
Public service	Sheila Ashford	IND
Environmental Issues	tbc	NGO

Exhibit 2 lists the possible members of the reconstituted Committee. It is a smaller group, which has been arrived at in two steps, beginning with a check on the current members' lengths of service, to establish those people that are eligible to continue to serve, and then augmenting the depleted group with new members where critical skills had been lost and with people nominated by NGOs. The two members whose names are shown in brackets have both served more than nine years, and in order to satisfy Nolan principles, will be required to leave the Committee during the course of its next three-year term.

To reconcile the competing demands for a smaller Committee (c 15 members) and the addition of several new blocks of competence to better align with the future work

programme, it may make sense at this review point to consider seeking new members to replace all those that would reach their maximum term at some point within the life of the next Committee. In practical terms, this would mean losing four of the 15 people listed below, thereby making room for additional appointments with particular knowledge of say education and training, non-UK reactor technologies and the management of privatisation and industrial restructuring as experience in other high-hazard industries.

Exhibit 2 Members of the reconstituted Committee

	Name	Length of Service (years)	Nomination
1	NGO	New appointment	NGO
2	Sheila Ashford	3	Independent
3	John Billard	0.5	TUC
4	Robin Bloomfield	New appointment	Independent
5	Andrew Clarke	1	CBI
6	Barry Cripwell	4	TUC
7	(Sue Cox)	9	Independent
8	Wynne Davies	7	CBI
9	Bryan Edmondson	4	CBI
10	Paul Haigh	2	Independent
11	Bill Heafield	1	Independent
12	Rod McKenzie	7	Independent
13	Neville Moray	5	Independent
14	(David Owens)	9	Independent
15	Steve Vbranch	0.5	Independent

People may not wish to be re-appointed to the reconstituted Committee, where they have other pressing commitments. Several people indicated that they might decline the invitation, should the new Committee's terms of reference define their role as advising the Chair of the HSC and with no formal role in advising the Secretary of State with responsibility for sponsoring the nuclear industry.

3.6 Methods of Working

3.6.1 Main Committee

The Committee has a clearly developed modus operandi, which has been in operation for some time:

- **Dual meeting structure**, with a members-only meeting being followed by the main meeting which includes members, observers and other invited people. The members-only meetings provide members with the opportunity to discuss matters of policy in private. The Chief Inspector of Nuclear Installations is usually invited to attend part of this meeting. The members-only meeting is used to agree

a NuSAC position on each of the main items on the agenda in readiness for the main meeting following it including any detailed questions the Committee would wish to be asked

- **A fixed-schedule of meetings.** The Committee meets three times a year, normally spread over two days. After the members-only meeting, members and the Secretariat are joined for a main meeting by the Chief Inspector of Nuclear Installations, who has a standing invitation to attend, and by observers from relevant government departments and agencies and major nuclear site licensees, all of whom take part, as appropriate, in discussions
- **Site visits.** Two meetings each year are normally held at the headquarters of the HSC in London. The third meeting is normally held near one of the nuclear licensed sites and is combined with a site visit. The site visit is for members only supported by the Secretariat with any other persons whom the Chair and members may wish to invite.
- **A hierarchical structure,** in terms of the main Committee and its supporting Review Groups and Sub-Committee on Research (SCR)

The process is well regarded by most, however a number of criticisms were raised that are worthy of note.

There was a general concern among the stakeholders, other than the committee members, that the Committee's dual strategy of public and private meetings had run its course and that the main meeting had become somewhat perfunctory, with little opportunity for debate or dissent, at least as seen from the point of view of the observers. Furthermore, the industrial observers expressed concern as to the appropriateness of the relationship between NSD and the Committee, and specifically the private briefing provided to the members-only meeting by the Chief Inspector of Nuclear Installations. When pressed, most members agreed that the balance of effort had swung too far in favour of the members-only meeting, and that the situation ought to be reversed. However, the HSC Chair has asked that NuSAC should move away from this dual strategy and halt the members-only meetings in line with the Commission's more general concerns with regards to openness and transparency.

On a related matter, several commentators, members and observers, remarked on the growing volume of business in front of the Committee and suggested that over time this had led to a gradual weakening of debate. People suggested that the best solution to this *inundation* was greater selectivity, and referred back to their earlier remarks that the Committee ought to focus only on that sub-set of issues of strategic importance or policy relevance to the Commission.

Site visits were remarked upon by several respondents, with the majority of members and observers commending NuSAC for this hands-on approach arguing that visits provide members with first-hand knowledge of safety issues at a given site. Several others expressed mild concern that the site visits were tempting the Committee to review the detailed and operational work of the NII's site inspector, diverting attention from the primary purpose, which is formulating advice on matters of

strategic importance. In addition, the visits do appear to have the affect of producing a substantive programme of follow up work for the Committee, NII and licensees, the added value of which is not always clear to the HSC or senior HSE officials.

3.6.2 Review Groups

There was a range of opinion as regards the continuing need for and efficacy of the five NuSAC Review Groups. At one end of the spectrum, several Committee members, including the RG Convenors, argued for the retention of the RG system, saying that it has been a simple and efficient means by which to review issues and produce creditable technical assessments and advice.

Members argued that the Review Groups were a necessary mechanism given the Committee's reliance on part-time contributions. Certainly, the use of smaller, thematic groups means that the Committee is able to render advice on a larger number of diverse topics than would be possible if all matters had to be reviewed by the full Committee. In contrast to the opinions of members, several non-members suggested that the need for Review Groups was symptomatic of the Committee's concern with questions of detail rather than policy.

At the other end of the spectrum, a second group, predominantly Commissioners and senior officials, found the notion of sub-groups problematic, and especially where those groups had become standing committees in their own right, with an annual planning cycle driving the work programme of the Committee. This degree of self-tasking was deemed to be inappropriate for an Advisory Committee. This group of respondents suggested the Review Groups ought to be brought to a close at this time, as a matter of principle. Instead, where the Committee does have a need for a separate working group, for reasons of capacity or competence, it should be set up as a task group, with a clear, issue-specific brief to be executed in a fixed time period.

On a more practical level, several observers remarked that the detail work of the Committee – its consideration of the evidence, its handling of risk and uncertainty and treatment of dissent – is carried out within the Review Groups and that the observers and other Committee members not involved in a Review Group have to be content with what may be a rather short and summative statement. These individuals found, from time to time, that basis for advice could be somewhat opaque as a result of this division of labour. The volume of business transacted within the main Committee leaves little time to clarify matters and settle doubts regarding the work of the Review Groups. Specific concerns were raised with regard to the work of the emergency Review Group.

On balance, it would seem fitting to implement a revised strategy, enshrined in the Committee's terms of reference, wherein advice on particularly involved and complex issues may be arrived at through the support of task groups, working to a clear brief and with a fixed timetable. In practical terms, the five Review Groups should be reduced to two Task Groups, focusing on those issues where there is clear agreement as regards future challenges and uncertainty, namely:

- The regulations for decommissioning
- Safety management and performance

For each Task Group, the NuSAC Chair should define clear objectives and a concise programme of work, with the support of the Committee, and in negotiation with the Chair of the Commission. In addition to these two groups, the Committee may choose to launch other task-orientated groups subsequently to carry out specific projects reporting back to the committee as appropriate.

The Review Groups have been the backbone of the Committee. This is where the in-depth analysis is carried out, with members continuing to research and debate topics in between the meetings, by telephone and email correspondence.

The NuSAC process can be protracted, with several reviews having taken a year or more to conclude, with few exercises being carried out at the kind of tempo more typical of a policy environment. A bimodal approach may be preferable, with the Committee offering preliminary advice to the HSC in the first instance, and within a month of a question being put to it, exploiting IT to conduct a virtual debate among the members. If that advice is to investigate the issue thoroughly, then HSC should be asked to consider launching a more intensive review, to be conducted with all necessary haste, commissioned through its own policy-support research programme from an independent and authoritative contractor, here or overseas. Where that happens, NuSAC should advise on the research specification and be invited to offer separate, revised advice to the HSC following the conclusion of the review.

The resource implications of such a brief would be managed in the first instance by interaction between the Committee and the HSE Secretariat, perhaps advised by HSE research coordinators, to exploit the corporate knowledge of commissioning value-for-money studies in support of policy. Equally, an insistence on the formulation of answerable research questions, and tight research management, should ensure scarce funds are used wisely with a higher proportion of studies likely to yield definitive advice.

3.6.3 Research Committee of NuSAC

The NuSAC sub-committee on research (SCR) operates as a semi-autonomous group, reporting directly to the Chair of the Commission. Its work is not especially visible to NuSAC, and few respondents had very much to say as regards the continuing need for such a committee. For those that did have a view, several were in favour of its continuation, arguing that its ability to compel operators to fund basic research would be more important in an increasingly privatised industry. Others argued that the SCR was of little value, in that it had oversight of only a fraction of the total research effort relevant to nuclear safety, and that its scrutiny of this small part was disproportionate. The HSE Chief Scientist is strongly in favour of the research committee.

For the four or five people who felt able to comment, NuSAC's formal responsibility for monitoring the balance of nuclear safety research was considered to be of growing importance. The increasing role of the private sector, and the switch to a customer contractor structure, is likely to mean licensee's research programmes are subjected to stringent commercial tests, with the total volume of research likely to reduce and for such rationalisation to fall most heavily on those areas of the historical portfolio concerned with public good (basic) research. At the same time, we may see an increase in the practical challenge of monitoring licensees' research portfolios as the number of licensees – contractors – increases with the switch to the NDA. This kind of restructuring has been seen elsewhere in the UK economy, for example when the power and water utilities transferred to the private sector. There are other threats too. At the same time as we see the balance of operations moving towards decommissioning, and an ageing workforce, support for research infrastructure is weakening in the higher education and research institute sectors, as newer topics and disciplines come to the fore. Respondents argued that the SCR was an important bulwark against these wider tendencies and its success or otherwise may become a matter of grave concern within the next 3-5 years, should the government of the day choose to commit to a new build programme.

At a more general level, a larger number of respondents suggested, from their rather distant vantage point, that it appeared to be an exemplary committee, with an impressive chair and an admirable reputation among stakeholders, and especially licensees.

Three respondents were sceptical as to the value added of such a committee, although one of the Deputy Chief Inspectors was rather forthright arguing that there was no good case for the sub-committee on research. His challenge related to the scope of its work, arguing that it had oversight of only a fraction of the total research effort relevant to nuclear safety, and that its scrutiny of this small part was disproportionate when compared with the monitoring effort seen elsewhere. The scope of its remit means that it can make only the smallest difference to improving the balance and impact of nuclear safety research. Furthermore, the SCR operates in a congested area with:

- NSD taking an active interest in industry research on nuclear safety
- NDA research programme
- The fission part of the EU RTD Framework Programme
- Work done elsewhere in Europe and in North America
- Work done through the auspices of international bodies such as the IAEA

The Chair of the Commission and the Chair of NuSAC wish the committee to continue its work, and are content to see NuSAC retain its second and much more specific remit, as compared with its primary role, which is to advise on the balance of nuclear safety research.

In light of the changing landscape, and the mixed views as regards the added value of SCR, there is a case to re-integrate the research remit within the main committee. HSE will no doubt support the NDA Research Board in carrying out its overseeing function on waste, cleanup and decommissioning research, and some formal link with NuSAC would seem appropriate. As a minimum, this should involve a full exchange of information on an annual basis, perhaps augmented by observers: an NDA observer to NuSAC and an HSE observer at the NuSAC Research Board.

3.7 Openness and transparency

There was a vigorous response from all respondents when quizzed about the need for greater openness, with almost everyone agreeing that some improvement in the transparency of the work of the Committee would be desirable, however there was a spectrum of opinion as to what might be the practical solution. Debate revolved around discussions of increased input from members representing the public, the publishing of more information in a timely fashion and the opening of the Committee's meetings to the press and the public. The question of public representation is dealt with in an earlier sub-section, and is not repeated here.

3.7.1 Information dissemination

Several members and observers hope that NuSAC will see the implementation of the Freedom of Information (FOI) guidelines, from January 2005, as an opportunity to build the profile of the industry, and make a concerted effort to overcome an industry-wide culture of secrecy.

The nuclear industry has always been notoriously secretive, and many of its problems of public perception have stemmed from this secrecy. NuSAC seems, for no good reason, to have inherited this tendency to err on the side of confidentiality: "we'll talk to senior chaps so the public does not need to concern itself with these issues – they wouldn't understand anyway, and the Press would just sensationalise everything". There have been some laudable high-level exceptions to this, e.g. the 'Tolerability of Risks' document which (I believe) came about because the Chair/Inspector at the Hinkley Inquiry said that the basic issues ought to be accessible to an average reasonably-well-educated person, but none of this has rubbed off on NuSAC.

There was universal agreement that NuSAC would benefit from increasing its visibility among the informed public through more concerted dissemination and promotion of its outputs:

- Re-introduce a previous procedure and issue an Annual Report towards the end of the year, to recap on advice and achievements. It would be the culmination of a process by which the Chair, with the support of the Committee, could take stock of performance and, in discussion with the Chair of the HSC, present the more detailed work programme for the coming year. It would be an opportunity to say thank you to the Committee members and other contributors that input on a goodwill basis

- The NuSAC web page needs to be upgraded and updated (it has the old terms of reference, for example, and as of January 2005, the most up to date minutes were from October 2003). A slight modification to the web site would permit NuSAC to establish its own site, just two layers below the HSC/E home page, and with a commitment to issue agendas, papers and minutes in short order and notes of discussions where those are of deemed to be of general interest. Links to and from other sites (NDA, CoRWM) would be worthwhile too

These are simple improvements, however they would have implications for resources in the both the Committee and the secretariat. The re-organisation of the web site should be possible with a 5-10 person day input, called off from one of the ICT Framework Contractors. Managing the content of the new outward facing NuSAC web site however will be more challenging, as that may require a more intensive process for preparing and issuing outputs and there will be further demands placed on members and the secretariat as one commits to more regular and much more immediate publication of outputs. Indeed, with such a commitment the burden on the NuSAC Chair could be increased to a level that is unsustainable for a position that is part-time and unremunerated.

However, this whole issue of transparency may point to the need for the creation of a new role within the Committee, to work with the Chair to oversee the management of its external relations with parties other than the Commission. A Deputy Chair could take the lead in the processing of NuSAC output for publication and the more general promotion of the work of the Committee. In addition, the creation of a deputy Chair could be an opportunity to give greater prominence to matters of public concern more generally, with this post being filled by a lay member rather than a nuclear specialist of scientist.

3.7.2 Annual Report to the Commission

We have mentioned the commitment to issue a NuSAC Annual Report at several places above, however it should be noted that this is not something the Commission is actively seeking. Rather the Commission is seeking to reduce the volume of routine information presented to it, concentrating on only those items of importance and in particular matters relating to progress against its new 10-year strategy. Of course, the Commission would expect NuSAC, as with any Advisory Committee, to submit ad hoc reports on specific work items where it has been agreed between the two chairs that it is essential to keep the Commission properly informed.

Early in 2003 HSC decided that there was no longer a need for its Advisory Committees to provide it with separate progress reports. Instead, HSE's Openness and Communications Branch will prepare a short report drawing out major achievements and common themes across the full range of Advisory Committees. The NuSAC Secretary (in consultation with the Chair) will be asked to provide material for inclusion in the consolidated report, organised around the Commission's strategic plan primarily, but also flagging any other major achievements over the past year.

This may amount to a simple listing of advice given, papers taken, reports issued, sites visited, responses to consultations, et cetera.

We would recommend that an Annual Report is prepared for submission to the Chair of the HSC, and that this would be used, in its draft form, to steer the work of the Committee in the coming 12 months and to ensure its focus is on matters of strategic concern. The NuSAC Annual Report would be digested separately by the HSE Communications Branch, and only the highlights presented to the wider Commission in a consolidated report for all Advisory Committees, as well as being publicised more widely through the NuSAC web site and contacts databases.

There was a consensus among Commissioners and members that more should be done in future to ensure a good and bidirectional flow of information across the interface between the Commission and the Committee. As a minimum, the Chairs of the Commission and NuSAC need to meet periodically, which may be two or three times a year depending on the programme of work in hand, to ensure the Commission is kept informed of progress on key questions and to ensure the Committee is kept up to date with the evolving priorities of the Commission and the HSE.

3.7.3 Open meeting

While all respondents are keen to see increased transparency, there is a difference of opinion between Commissioners and senior HSE officials on the one hand (the advised) and the Committee members and observers on the other hand as regards the merits of conducting the day-to-day business of NuSAC in the public eye. Others close to the Committee, in particular NSD senior staff, are dubious as to the value of making meetings public.

For the Commissioners and senior officials, openness should be a founding principle and there is an expectation on the part of the Chair of the HSC that in future all HSC advisory committees will hold at least one meeting in public each year. For others, the case for public meetings is less clear-cut.

According to NuSAC members and observers, the efficacy of the Committee is due in large part to the credibility of the members across licensees and regulator, and the willingness of these two parties to be open in their briefings to NuSAC and, equally, candid in their responses to challenges from the Committee. The following excerpts reveal the kinds of doubts expressed:

I'm not in favour. This will inhibit working, especially as licensees currently reveal, through RGs, commercially-sensitive information, which could be of value to competitors. (This will also become politically sensitive once NDA starts withholding funds from key safety-related programmes). NuSAC member

The idea of 'open meetings' (like CoRWM) fills me with horror, quite apart from considerations of the sensitivity of some subjects we discuss in 'closed' meetings! I have no objection (in the main) to our products being fully open to scrutiny, but not our minute-by-minute discussions and decision making processes. NuSAC member

... the business of NuSAC has a Defence component. The current membership takes this in its stride, with great care for the sensitivities and after full blown security vetting. However it would I think be wrong to involve anyone affiliated to NGO bodies known to be equivocal on such matters. It would be unfair to him (sic), as he could find himself, perhaps frequently, in a position of divided loyalties. Also the inclusion of such a member would make the inhibition of NuSAC's proceedings much more serious whenever Defence aspects were on the agenda. I feel strongly that it would simply be too difficult to identify with confidence a suitable individual with a suitable NGO affiliation. NuSAC member

I don't think the regular meetings can usefully be opened. The success of members only meetings, for example, came largely from the willingness of members to speak more freely in this restricted audience. There will always be things that we can only discuss in confidence. So I think special meetings are needed for the public. Whether these will attract an audience is moot. If they were tied to topical issues they might, e.g. new build, if it is ever announced. NuSAC member

I think that we should be cautious, and hold one open Main meeting per annum in London. CoRWM is perhaps a useful example. The major problem is that the raw information, protracted nature, and emotional impact of nuclear safety problems can generate serious, usually unnecessary, public concern. NuSAC member

In addition to expressing concern over the potentially negative impact open meetings may have on *openness*, members foresee several practical difficulties. The complexity of the issues under review demands a degree of literacy that the general public and press may not possess, and simplification would increase the burden of preparation and slow down the process of debate still further. There will be resource implications too, for members and for the HSE, or the Committee will need to conduct rather less business than it has done hitherto, perhaps focusing on only the most critical and strategic issues.

Not all members took this view, although most did, with the Chair and two other members taking the view that public meetings would not be problematic, and that where there were issues that needed to be dealt with in confidence, for legal or security reasons, then these items could be flagged and handled separately. Equally, several NuSAC observers, including two industrialists, were content for the meetings to be held in public and saw no particular risk to the Committee and its advice as a result of this more open method of debate.

If open meetings are to be instituted, the members are supportive of the proposal made by the HSC Chair to move to a situation where one meeting each year is conducted in public, with the session held at Rose Court.

... consider holding one open meeting per year, to coincide with the publication of its Annual Report and future work plan. Alternatively, it might consider having an open session towards the end of some or all of its regular meetings – though the logistical problems would be considerable (sizing the meeting room, arranging security clearance, et cetera.). NuSAC member.

One open main meeting per year – associated with the publishing of a report - would be worth trying. The members-only meeting should certainly continue in private so that we can have a frank discussion of our concerns. The main meetings also need to be private so that we can at least try to get answers to our questions from the industry and government representatives who attend. NuSAC member.

The Chair of NuSAC has suggested, as a practical way forward, that the Committee begin with one public meeting in 2005, perhaps an Annual General Meeting, where the Committee would present its work and advice given in the past 12 months. The experience should be monitored by the Chair and the secretariat with a view to fine-tuning the arrangements and gradually increasing the number of meetings that are held in public.

Appendix 1 Contributors

HSC/E	Mr Kevin Allars
HSC/E	Ms Margaret Burns
HSC/E	Ms Sandra Caldwell
HSC/E	Mr Bill Callaghan
HSC/E	Dr Paul Davies
HSC/E	Ms Judith Hackitt
HSC/E	Mr Justin McCracken
HSC/E	Dr Colin Potter
HSC/E	Ms Eve Quist-Therson
HSC/E	Mr Nick Starling
Nuclear Safety Directorate	Mr Robbie Gray
Nuclear Safety Directorate	Dr Andy Hall
Nuclear Safety Directorate	Dr Peter Storey
Nuclear Safety Directorate	Dr Mike Weightman
Nuclear Safety Directorate	Mr Laurence Williams
Nuclear Safety Directorate	Mr Alun Williams
NuSAC Member	Mrs Sheila Ashford
NuSAC Member	Mr John Billard
NuSAC Member	Mr Andrew Clarke OBE
NuSAC Member	Mr Barry Cripwell
NuSAC Member	Dr Bryan Edmondson
NuSAC Member	Dr Paul Haigh
NuSAC Member	Mr Bill Heafield
NuSAC Member	Professor Bev Littlewood
NuSAC Member	Dr Rod McKenzie
NuSAC Member	Professor Neville Moray
NuSAC Member	Mr Steve Napier
NuSAC Member	Professor David Owens
NuSAC Member	Mr Stephen Vbranch
NuSAC Member	Dr Jim Whiston
NuSAC Observer	Mr Alan Brandwood
NuSAC Observer	Mr Charles Bridge
NuSAC Observer	Mr Andrew Clark OBE
NuSAC Observer	Mr David Mason
NuSAC Observer	Mr Richard Mayson
NuSAC Observer	Commodore Andrew McFarlane
NuSAC Observer	Dr Joe McHugh
NuSAC Observer	Mrs Mary Morrey
Other	Mr Jim Furness
Other	Dr Sam Harbison
Other	Professor John Head CBE
Other	Mr Terry Selby

Appendix 2 Interview Checklist

NuSAC Terms of reference

- 1 Do you see a continued need for NuSAC? What for you is the principal rationale for its continued existence?
- 2 Are there any aspects of the Committee's terms of reference that you would wish to see changed?
- 3 Are there additional functions the Committee might usefully perform?

Future Work programme

- 4 How can the work programme be fully aligned with HSC/E's strategic aims and the desire of the HSC and NuSAC Chairs to be strategic and less detailed?
- 5 What do you see as the core elements of the work programme for the Committee during the next five years?

Membership

- 6 Do you have any general view on the membership of the Committee, in terms of its size and proposed balance?
- 7 Should the tripartite structure of the committee continue?
- 8 If you are content to see the tripartite structure remain, what do you believe to be the most appropriate number or proportion of each group: at present, 12 of the 20 members are independents (60%), while four are nominated by the TUC (20%) and four by the CBI (20%)?
- 9 Is there a role for a new member nominated by a non-governmental organisation (NGO), such as Friends of the Earth? How would this be best achieved?
- 10 Are there models from other HSC advisory committees or external expert bodies that might be useful?
- 11 Does the Committee have the right blend of skills? Are there any additional competencies that you believe the Committee ought to have access to?

Working structure of NuSAC

- 12 Are there any aspects of the working structure of the Committee (main committee, review groups, study groups, joint reviews with other Advisory Committees) that you believe should be changed in some way?
- 13 Are there any aspects of the main Committee's working methods that you would wish to see changed?
- 14 How do you feel the Committee should deal with the idea of greater openness and transparency? How could the Committee open its meetings to the public?
- 15 Is there a continued need for Review Groups? What should they be?
- 16 Are there any aspects of the Review Groups' working methods that you would wish to see changed?
- 17 Is a sub-committee of NuSAC the best means of advising HSC on the adequacy and balance of nuclear research?
- 18 Is there a need for the Sub-Committee on Research (SCR) to change?
- 19 Are there any aspects of the SCR's working methods that you would wish to see changed?

Other views

- 20 Please include here any other views that you would wish to submit to the review for consideration by the NuSAC Chair and the HSC/E?