

**The Civil Nuclear Reactor New Build Programme
- Generic Design Assessment (GDA)-**

**Initial Report to
Her Majesty's Chief Inspector of Nuclear Installations**

**from
The GDA Process Review Board**

by
**David Hughes, John Raine,
Bernard Whittle and Phillip Woodward**

March 2008

About the Process Review Board

The Board consists of four members, chosen for their diverse and complementary skills and experience in aspects of governance and management in various contexts outside the nuclear industry, They are as follows:

Professor David Hughes

David runs a Consultancy specializing in innovation strategy and is a visiting Professor of Engineering Management at City University. Between 2002 and 2006 he was Chief Scientific Advisor to the DTI and Director General of the Innovation Group. During his industrial experience of over 30 years he has held senior executive positions with large international companies such as Ford, Lucas, GEC-Marconi and BAE Systems. He is a Fellow of the Royal Academy of Engineering and a Chartered Director.

Professor John Raine

John is Professor of Management in Criminal Justice in the School of Public Policy at the University of Birmingham. His teaching research and consultancy work is centred on governance arrangements within the public sector and he has a long track record of management and policy review work for organizations at national and local levels alike. He is a member of the national Criminal Justice Council; of West Mercia Courts Board, and of the External Reference Group for the Ministry of Justice. He is also an elected District Councillor in his home area of Malvern Hills.

Bernard Whittle

Bernard is Chairman of Springfield's Site Stakeholder Group and an elected member of Lancashire County Council. He has a long involvement in waste management and was a member of the National Waste Awareness Board and a founding member of the Natural Resources Initiative Group of the Local Government Association. Until taking early retirement he was Sales Director of a medium sized engineering company.

Phillip Woodward

Phillip is currently Chief Executive of Fylde Borough Council in Lancashire having been appointed as Director of Environmental Services with the Council in 2000. He has over 30 years of local government experience with councils across the country in the delivery and organization of community based services including housing, waste management, food safety and leisure services. He is a Chartered Environmentalist, holds membership of several professional bodies, including the Chartered Management Institute, and is a Fellow of the Royal Society of Health.

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Summary

This is the first report of the independent Process Review Board established by HSE to provide external scrutiny of the GDA process for assessing new nuclear reactor designs. The report follows a short review conducted in February 2008 with the particular aim of evaluating progress in Step 2 of the GDA process and identifying what, if anything, might need to be done differently to ensure success in Steps 3 and 4. In the course of our review we have consulted with various members of staff of the Nuclear Directorate, (particularly Division 6, which is responsible for the GDA and Division 5, the Office for Civil Nuclear Security (OCNS)) and also with the Environment Agency (EA). We have also examined various reports and other background documents. In general, this report refers to the functions addressed by the Nuclear Installations Inspectorate (NII) which makes up the largest part of the Nuclear Directorate. Our main findings and recommendations are as follows:

Main Findings

- The stakeholder engagement work has been carefully planned with a good blend of clarity and realism as to the purposes, and the limits, of the 'public involvement' policy. (paragraphs 2.4 & 2.10)
- The creation of the Joint Programme Office has been one of the significant early achievements of the programme and, in administrative terms, is working well for all concerned. There are positive and constructive relationships between the separate regulators (NII, OCNS and EA), respect for, and understanding of, each others' priorities and separate responsibilities. The framework of co-ordination and the underpinning Joint Programme Office appears to be providing an effective means for balancing out and resolving the different interests (paragraphs 2.23 and 2.24)
- More care and imagination could have been shown by the Requesting Parties in presenting their designs and safety cases on the web-pages (and CDs) in ways that the majority of members of the public could easily understand or find useful (paragraph 2.12)

- The GDA guidance presents itself as indicative of a well-thought through project, and, more tellingly, Step 2 has now almost been completed without particular difficulties. We have felt absolutely no sense of compromise on the high standards of professionalism that pervade in the Division and its commitment to safety (paragraph 3.2)
- The scale of the challenge that the GDA represents to the NII is such that it seems absolutely right to have adopted a distinct and purposeful ‘programme management’ approach (paragraph 3.4)
- A significant amount of ‘double and triple hatting’ is taking place among staff in various roles. The impact of this is that staff are unable to give sufficient attention to each of their functions because of competing demands of their different duties. This is particularly apparent in the Project Assurance role which we view as a key element of the GDA process as it moves into Step 3. (paragraphs 3.5 and 4.1)
- In summary, the GDA process (in Step 2) has generally progressed well. The organization has both adapted well to the new demands and developed its management and decision-making processes in new directions to good effect, particularly in bringing a much stronger dimension of stakeholder engagement and public input to the process. (paragraph 3.13)
- However, we anticipate that there will be much greater demands made of the organization in Steps 3 and 4 of GDA. In that respect, the risk is that the decision-making processes that have to date been appropriate to the end of Step 2 may quickly need to be made more robust (paragraph 3.13)

Main Recommendations

- That for the future, the phrase ‘*public input*’ is more aptly used to describe what is intended under the phrase ‘public involvement’ - this being about a) promoting public interest; b) welcoming and stimulating debate and; c) encouraging the submission of comments and questions from members of the public. (paragraph 2.8)
- That the NII should ask the Requesting Parties to do further work to their relevant web-pages to ensure that the presentations and explanations of their designs are as comprehensible as possible to non-experts as well as to the more technically-minded (paragraph 2.13)
- That the NII itself should enhance its public information on this project through website development and use this as the prime means for promoting public input. (paragraph 2.14)

- That in the spirit of ‘openness and transparency’, the NII should publish all the public comments received on the designs on its website (subject to individual agreement to such publication being given). (paragraph 2.14)
- That the key priority for the NII in relation to stakeholder engagement and the promotion of public input (involvement) in GDA should be about building confidence in the reputation of the organization for its independence, its expertise and its commitment above all else to public safety – which should be widely publicized and communicated (paragraph 2.16)
- That the message about the value the organisation now ascribes to stakeholder engagement and public input is routinely communicated and reinforced with staff in the Nuclear Directorate, to avoid any inconsistencies and miscommunications (paragraph 2.17)
- That the criteria, principles and standards for ‘new build’ by which the assessment work is undertaken by the NII should be set out as clearly and specifically as possible (on the website), and how these compare with those by which earlier installations in the UK were approved and built, and how they compare with the standards accepted by other regulators around the world. (paragraph 2.19)
- That in order to build greater public confidence the NII should clearly demonstrate how the ‘day to day’ reports from NII inspectors at existing sites are used to improve designs and raise standards. We think that much public reassurance is to be derived if there is better awareness of the rigor of current day-to-day enforcement work which goes on to ensure adherence to stringent safety standards. It is also important to give more thought to the best ways – and the most appropriate terminology – for communicating such messages to a largely non- technical public audience (paragraphs 2.20 and 2.21)
- That consideration be given to the further development of a single co-ordinated risk register rather than separate ones for NII, EA and OCNS respectively (paragraph 2.26)
- That consideration be given to further development of links and to extending the formal co-ordination with partners such as SEPA in Scotland, and that work continues in developing channels of communication with Scottish Ministers in the interests of public reassurance, given their role as representatives of the people of Scotland (paragraph 2.27)

- That greater attention be devoted to planning and decision-making about resource requirements to address the more demanding requirements of Steps 3 and 4. In particular, we recommend that priority be given to mapping out the precise staffing resource requirements for Steps 3 and 4 (e.g. succession-planning issues). (paragraphs 3.4, 3.6 and 3.7)
- That programme governance arrangements be reviewed at the end of Step 2 given the widely-recognized 'ramping up' of the workload that will be necessary for Steps 3 and 4. To this end, we recommend that the Office of Government Commerce (OGC) process for Programme Management be considered as an example of best practice. (paragraph 3.9)
- That actions are taken to strengthen the Programme Management team by the addition of generic project management expertise. (paragraph 3.10.1)
- As an immediate priority, we recommend that work be undertaken to chart-out a feasible project plan for Step 3, taking account of the resources likely to be available, the estimated workloads involved and the timings required to complete the various tasks relating to each design (paragraph 3.10.1)
- For Steps 3 and 4, we recommend some adjustment to the basic framework for governance and management of the programme to clarify functionality and relationships and to strengthen reporting lines.(paragraph 3.10.2)
- To be effective in future Steps, the organization, and main Board in particular, needs to be decisive and prompt in following up and mitigating risks, especially in relation to resourcing. For this reason we recommend a more 'hands-on' approach for the Programme Director convening a monthly 'control meeting' to give additional drive to the decision-making process and to sharpen accountability. (paragraph 3.15)

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March 2008

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1. Background

1.1 This is the first report of the independent Process Review Board established by HSE to provide external scrutiny of the GDA process for assessing new nuclear reactor designs. The report follows a short review conducted in February 2008 and which involved consultations with various members of staff of the Nuclear Directorate, (particularly Division 6, which is responsible for the GDA and Division 5, the Office for Civil Nuclear Security (OCNS)) and also with the Environment Agency (EA). We have also examined various reports and other background documents. In general, this report refers to the functions addressed by the Nuclear Installations Inspectorate (NII) which makes up the largest part of the Nuclear Directorate.

1.2 The terms of reference for our GDA Process Review Board are as follows:

To carry out periodic reviews of HSE's activities during the assessment of generic designs, as requested by the Chief Inspector of Nuclear Installations. Specifically the primary tasks we were asked to address were to:

- confirm that the public involvement process is operating effectively
- examine whether the arrangements made to co-ordinate the activities of the separate regulators are appropriate and effective
- consider whether the processes, practices and procedures associated with the Generic Design Assessment are appropriate
- consider whether the decision-making process is operating effectively
- determine the extent to which HSE is following the processes and procedures set out in its guidance and in agreements with requesting parties.

1.3 The Generic Design Assessment (GDA) process¹ has been developed as part of the decision-making process for the licensing of new nuclear power plants in response to the renewed interest in nuclear power in the UK. It particularly has the aim of reviewing the safety and acceptability of new nuclear reactor

¹ The GDA guidance notes and detail process description can be found at website <http://www.hse.gov.uk/nuclear/reactors/design.pdf>

designs. The GDA in fact represents a two phase process. Phase 1 specifically involves the assessment of the suitability of the designs in principle (and, if acceptable, culminates in the issuing of a statement of 'design acceptance'. Phase 2 focuses on the particular sites at which nuclear installations are envisaged to be sited and, again subject to acceptability, leads to the issuing of a Nuclear Site License.

1.4 The GDA phase 1 process itself involves four steps as follows:

- Step 1: Requesting Parties (the companies wishing to submit designs for assessment) will prepare their designs and submit them to HSE.
- Step 2: The Nuclear Directorate of HSE will conduct a fundamental safety overview of each design submitted for assessment
- Step 3: The Nuclear Directorate will complete an overall design safety assessment of each design (i.e. a more comprehensive and detailed review of safety in each case)
- Step 4: The Nuclear Directorate will carry out a detailed assessment for 'design acceptance' – leading, if acceptable, to the issuing of a Design Acceptance Confirmation.

1.5 The Process Review Board commenced its work during February 2008, towards the end of Step 2, with four designs having been submitted (in Step 1) and about the time that the Nuclear Directorate was completing its fundamental safety overview assessment of each. In the preceding month (January 2008), the Government published '*Meeting the Energy Challenge: A White Paper on Nuclear Power*' (CM 7296) in which commitment was made to developing a new generation of nuclear power plants. This has served to underline the importance of the GDA process that had already commenced in relation to the submitted designs. The White Paper also confirmed the Government's intention to reduce the number of designs to be further considered in Steps 3 and 4 of the GDA process from four to three at the end of Step 2. The decision on which particular design will be excluded from further consideration in Step 3 will be made by the Government.

1.6 In this the first report of the Process Review Board we have focused on two questions in particular:

1. *How successful has Step 2 of the GDA process been?*
2. *What, if anything, needs to be done differently to ensure success in Steps 3 and 4?*

These questions, and the five tasks forming our terms of reference, are addressed below in the following sections:

Section 2 Arrangements for Stakeholder Engagement, Public Involvement and Co-ordination between the Regulators

- How effective are the stakeholder engagement and public involvement arrangements operation (task 1)
- How appropriate and effective are the arrangements for co-ordinating the activities of the separate regulators? (task2)

Section 3 Procedures, Practices and Decision-Making Processes for the Generic Design Assessment

- How appropriate are the processes, practices and procedures associated with GDA? (Task 3)
- How effective is the decision-making process operating? (task 4)

Section 4 To what extent is HSE following the processes and procedures that it has established? (Task 5)

Section 5 Conclusions

Annex Glossary

2. Arrangements for Stakeholder Engagement/Public Involvement and Co-ordination Between the Regulators

2.1 Among the various arrangements that have been put in place and initiatives pursued by the Nuclear Installations Inspectorate (NII) over the past eighteen months or so to respond to and prepare for the new build programme, two, above all others, have been especially novel and, as such particularly significant for the organization. These respectively concern on the one hand the development of stakeholder engagement and public involvement, and on the other, the establishment of a framework for co-ordination with the other separate regulators. It makes sense to deal with these in close proximity to one another in this section in view of the common ground (i.e. other regulators as stakeholders and the establishment of a Joint Programme Office (JPO) involving the different regulators and providing a 'one-stop shop' for the public).

How effective are the stakeholder engagement and public involvement arrangements operating?

2.2 From the outset, a key element of the design approach to the GDA process has been to be open and transparent, to work with stakeholders and to welcome and support public interest/input into the generic design assessment process. This has been no small undertaking given that there is no great tradition of working in this way within the Nuclear Installations Inspectorate.

2.3 However, recognising the potentially high level of public interest in the new build programme, and also the strong expectations across government these days for more public engagement generally, the Nuclear Directorate's main Board (and the subsequently established New Build Programme Board) has been committed from the outset to ensuring a strong commitment to openness

(in relation to the safety cases) and transparency (of the decision-making process) and to working with stakeholders and the wider public as part of the GDA process.

Stakeholder Engagement

2.4 The stakeholder engagement work has been carefully planned – commencing with a ‘stakeholder analysis’ which identified some eighteen different groups – ranging from within the nuclear industry (manufacturers, constructors and operators of plant), through various governmental and regulatory organizations, to the media, campaigning groups, local communities (in potential areas where installations might be sited) and the public at large. For each of these, a number of possible engagement strategies and plans have been considered and with several actions and initiatives already implemented, for example, organizing several conferences and seminars (including events to introduce the GDA process to stakeholders, and to discuss issues with potential operators), establishing working relationships and agreeing protocols.

2.5 An early and particularly important initiative in this regard has concerned the relationship with Requesting Parties (companies whose designs the NII is being asked to assess). A co-operative framework (along the lines of the ‘compact’ that the government established with the voluntary sector) was agreed to set out the basic terms of an appropriate (open door) relationship between regulator and requesting parties/wider industry that is mutually beneficial. A specific element of this has involved the preparation (and agreement) of an Interface Protocol to guide and govern interaction.

2.6 Beyond the requesting parties, however, stakeholder engagement was launched with a major conference at Bootle in 2006 with good attendance from a diverse set of parties. Unfortunately, the NGOs (Greenpeace and other campaigning voluntary organizations opposed to nuclear power) subsequently decided formally to disengage from the process - as indeed they did in relation to the Department for Business, Enterprise and Regulatory Reform (BERR) also. However, we are aware that NII is keen to try and sustain relationships and the engagement of the voluntary sector and we agree that every opportunity should be taken to keep channels open and to encourage contact and dialogue.

Public involvement

2.7 Public involvement can of course be regarded as a subset of stakeholder engagement, although the task of engaging with the public at large would obviously be of a different magnitude from that of dealing with a relatively small and definable number of interested organizations and representative groups. Although the phrase ‘public involvement’ was chosen carefully (and consciously chosen in preference to the alternative of ‘public consultation’ because of the perceived importance of underlining that the key decisions would be taken by NII on the basis of professional and technical assessments, not on the basis of

consultative responses from the public and other stakeholders) we do question whether this phrase presents the reality of the situation any more clearly.

2.8 Having discussed and reflected carefully on what the priorities and realistic expectations here are, we suggest that for the future, the phrase '*public input*' would more aptly describe what is intended and sought in this context. We see this primarily in terms of:

- a) promoting public interest,
- b) welcoming and stimulating debate and
- c) encouraging the submission of comments and questions from members of the public

all with the aim of building public confidence and reassurance that the NII is indeed acting as 'the guardian of public safety' and communicating the message as to the very high standards of safety to which the NII works when undertaking its assessments and making its decisions (and likewise with the Environment Agency in relation to environmental protection and with OCNS in relation to matters of public security).

2.9 All that said, much thought has clearly been given to what 'public involvement' might appropriately mean (and where the boundaries might lie in this respect). Consideration has, for example, been given to the experiences of various other agencies in the arena of public involvement – notably the European Bank, NIREX and the Food Standards Agency. We understand that the Nuclear Civil Reactor Programme Board deliberated fully on the subject before making its decisions in this regard (including, the decision that comments submitted from the public on particular designs (or aspects of them) should be forwarded to the Requesting Parties for responses). The Board felt this was a key means to encourage the industry to be more open and responsive to public concerns.

2.10 Generally we have sensed a good blend of clarity and realism as to the purposes, and the limits, of the 'public involvement' policy here, especially given the position of NII as independent/expert regulator with a specific design certification role. The policy has, for example, been strongly based on a premise that, first and foremost, the purpose should be about giving reassurance and building confidence in the NII as to its independence and its expertise in assessing the designs and in deciding on the issuance of site licenses (and crucially, wanting to impress its neutrality both on nuclear policy issues and on commercial decisions related to the choice of supplier/ operator).

2.11 As indicated, a key component of 'public involvement' has been the development of arrangements that enable members of the public to raise questions or comment on the designs (or aspects of them), and to this end Requesting Parties have been expected to publish details of their designs and safety cases on their websites in an appropriately comprehensible and accessible manner for public information and scrutiny. At the same time the Joint Programme Office (JPO) has been established and organized to receive all such

'public comments', forward them to the relevant Requesting Parties for response and follow up as necessary to ensure this happens. The JPO team should be congratulated on having set up these new processes to handle this function and they appear to work well. We should perhaps just caution that the numbers of requests processed to date is quite small and the team should consider how they might handle much higher volumes of inputs in future steps of the programme.

2.12 In our view – and one we know to be shared within NII – more care and imagination could have been shown by the Requesting Parties in presenting their designs and safety cases on the web-pages (and CDs) in ways that the majority of members of the public would easily understand or find useful. Certainly more than one of safety cases appears to have been presented with very little thought or care in this respect – seemingly providing little more than an upload of existing specifications and other technical information, and in a manner that surely falls short of the spirit of the agreements made with NII (although we acknowledge that this may well be a reflection of the new territory they are entering as vendors, and the relatively short time they have had to prepare).

2.13 Accordingly we think the NII should ask the Requesting Parties to do further work to the web-pages to ensure that the presentations and explanations of their designs are as comprehensible as possible to non-experts as well as to the more technically-minded (and likewise on the CD versions)

2.14 We also think NII itself should enhance its public information on this project through website development and use this as the prime means for promoting public input. From now on, this seems a much more cost-effective approach than repeating the largely paper-based promotional work, e.g. with the publication and distribution to public places (e.g. libraries) of a leaflet on the process and placement of adverts in high circulation newspapers (undertaken by the requesting parties). Moreover, in the spirit of 'openness and transparency', we also think that it would be appropriate for NII to publish all the public comments received on the designs on its website (subject to individual agreement to such publication being given and assuming appropriate confidentiality).

2.15 We understand that a decision not to do this from the outset was taken largely because of concerns about the potential volume of comments and associated workload. However, although there have been some tens of thousands of visitors to the JPO/ Requesting Parties websites in the five months since going live in September 2007, public comments on the designs (as logged in the Joint Programme Office) have been relatively few in number (significantly less than expected, although of course it was always difficult to predict the response level). Moreover, most of the responses received so far have been requests for the CD versions of the designs. It seems likely that the publication of the comments will stimulate further reactions and would certainly be of additional public interest as the debate develops (and perhaps particularly when

the assessment reports are published and up-loaded on to the website – as we understand is the intention of NII).

2.16 More generally, we are sure that the key priority for NII in relation to stakeholder engagement and the promotion of public input (involvement) should be about building confidence in the reputation of the organization for its independence, its expertise and its commitment above all else to public safety. In this respect, the internationally-respected reputation of the Nuclear Installations Inspectorate is surely a particularly strong platform from which to build such confidence – and should assist in no small measure in the task of developing reassurance of the essentially safety-oriented criteria by which the NII exercises its regulatory function. Indeed, building on its excellent track-record, NII simply needs to take all opportunities in the current and emerging debate concerning ‘new build’ to emphasise its credentials and, perhaps above all, its independence from governmental decision-making.

2.17 Such reputation-building must, of course, be seen as a long-term and on-going project, not just as an immediate priority. The organization has already moved a long way from where it has traditionally been with regard to stakeholder engagement and public involvement, and in the next few months and years, as the work of the new build programme develops, there is much more to be done in this regard. It will be important at an early stage to review the impacts of the public awareness-raising initiatives already undertaken through market research on accessibility to, and value of, the information currently available – e.g. on the websites/CDs, in the public leaflet and newspaper adverts etc. to find out more about how access might be widened and more people engaged in ways that are of value to them. It will also be important to ensure that the message about the value the organisation now ascribes to stakeholder engagement and public input is understood and routinely supported by all staff in the Nuclear Directorate, to avoid any inconsistencies and miscommunications.

2.18 This work must, of course, be on-going; and there is always more to be done in developing and sustaining the reputation of the Nuclear Installations Inspectorate as the ‘guardian of public safety’ in its field and as an organization in which the public can have full confidence as to its independent status and its world-renowned technical expertise. While far from complete, we have a few suggestions of areas that could be built upon to reinforce that public reputation.

2.19 First, in the design evaluations being carried out, we think it is important to be open in publicising (on the website) the criteria and principles by which the assessment work is undertaken by NII – not least to avoid any public misperception that ‘wheels are being reinvented’ or that the organization will necessarily approve designs that happen to have previously been approved elsewhere by other (international) regulators. To that end, NII should set out as clearly and specifically as possible what its standards for ‘new build’ are, how these compare with those by which earlier installations in the UK were approved

and built and, perhaps ideally, how they compare with the standards accepted by other regulators around the world (e.g. the differences between the assessment processes operating in the UK and those used in other countries need to be clearly set out to avoid any accusations that the UK is asking for more than other regulators).

2.20. Second, building public confidence in the NII could be enhanced by demonstrating openly how the 'day to day' reports from NII inspectors at existing sites are used to improve designs and raise standards, i.e. how lessons learned are continually leading to improved standards and developing best practices. In this regard, we think that much public reassurance is to be derived if there is better awareness of the rigor of current day-to-day enforcement work which goes on to ensure adherence to stringent safety standards.

2.21 Third, and finally, we think it is important to give more thought to the best ways – and the most appropriate terminology – for communicating with a largely non- technical public audience. For example, the public will benefit from understanding what the NII means by terms like "adequate" (which, while perhaps sounding less-than-reassuring to many lay minds, in fact means 'conformance with high levels of safety in the design' to inspectors). Similarly, we are sure that it will be helpful for the key concepts (such as *criticality, containment and cooling; and ALARP (the principle that the residual risk shall be 'As Low As Reasonably Practicable'). and diversity and segregation*) to be presented and explained on the website and for caution to be used in relation to terms like 'redundant' (that tend to convey somewhat negative overtones).

How appropriate and effective are the arrangements for co-ordinating the activities of the separate regulators?

2.22 A key part of the arrangements for stakeholder engagement and public input is the Joint Programme Office that was established to co-ordinate the work of the NII with that of the other independent regulators involved with the 'New Build' programme – notably the Environment Agency (EA) and the Office for Civil Nuclear Security (OCNS) – and to provide a 'one-stop-shop' for the public in this regard.

2.23 The creation of the Joint Programme Office has undoubtedly been one of the significant early achievements of the programme and, in administrative terms, seems to be working very well for all concerned. More than this, there are very positive and constructive relationships between the separate regulators (NII, OCNS and EA), and respect for and understanding of each others' priorities and separate responsibilities (which, very properly should lead to separately published reports, whatever the common ground within them). There also appears to be a strongly supportive climate among the respective professional staff and keen participation in the various Boards, panels and other fora where interactivity and sharing of ideas is needed.

2.24 The relationship with OCNS is assisted by the fact that it is also part of the same Nuclear Directorate, although the security perspective (and in particular the responsibility for ensuring that the designs serve national security interests) is quite distinct from, and may indeed at times create complications for, the safety priorities of NII. Indeed, in certain situations, NII's policy of openness and transparency may of course be at odds with the security interests of OCNS, and such tensions are only likely to increase in Steps 3 and 4 of the GDA process as the focus of concern become more specific. This is one of the reasons why building public confidence in the NII is so critical. Similarly, the interests of the Environment Agency, as a separate regulator, may not always be in accordance with those of the NII. However, the framework of co-ordination and the underpinning Joint Programme Office appears to be providing as effective a means as might be imagined for balancing out and resolving such different interests

2.25 The 'New Build' programme and the associated co-ordination work, and perhaps particularly the establishment of the Joint Programme Office is likely to have other indirect benefits for NII, not least in opening up and developing the skill-mix and diversity more generally within and around the organization. And of course there is the potential for valuable inter-organizational learning, for example NII and the Environment Agency' learning from each other's respective experiences of public involvement initiatives and in media relations more generally.

2.26 One particular area that would perhaps benefit from further joint work concerns risk registers. Here we think that there is much to be gained through the development of a single co-ordinated risk register rather than separate ones for each organizational unit (NII, EA and OCNS). Indeed, with regard to the risk register of the NII, we were doubtful as to whether all the specified mitigations would indeed achieve the desired outcomes – particularly in relation to some of the programme management issues (see later). Moreover, and linking back to issues discussed in earlier paragraphs, a key concern we felt needed considering was the 'risk to reputation' as a result of being caught up in the politics that inevitably associate with the nuclear programme. While in a number of instances 'risk to reputation' has been identified as a possible consequence of other risks (e.g. if the assessments do not meet public expectations), we tend to take the view that 'loss of reputation' is a risk in itself because of the implications for loss of public reassurance – and one to be managed by all the regulators, both separately and together, over the next few years.

2.27 From all that we have heard and seen of the co-ordination arrangements and joint working, we are sure this will be an increasingly important and valuable component of NII's work on 'new build' – and with valuable 'spill-overs' to other divisions of the Nuclear Directorate and the wider remits of the HSE. NII has long engaged in excellent professional working relationships with others in the

sector, and maintains a high profile in international nuclear circles, where its contribution is highly respected. Certainly we would encourage the further development of links, and seeking to extend the formal co-ordination with partners such as SEPA in Scotland – which, whatever the political position of MSPs on nuclear power, really ought, at a professional level, to be part of the joint-working framework for regulation – not least for what this would represent in relation to public reassurance. More than that, however, it would seem entirely appropriate for NII to continue to work at developing its channels of communication with Scottish Ministers as well, again in the interests of public reassurance, given their role as representatives of the people of Scotland.

3. Procedures, Practices and Decision-Making Processes for the Generic Design Assessment

3.1 In this section we focus on the process of the GDA itself and on the governance and management arrangements in place to ensure the effectiveness and quality of decision-making in this context. First we review progress and prospects for the GDA - the achievements to date and the challenges on the next steps. We then consider the processes for decision-making, the reporting lines that link the various functional responsibilities together and the framework of accountabilities and their appropriateness for the purpose.

How appropriate are the processes, practices and procedures associated with GDA?

3.2 From our review of the documentation and discussions with various personnel, we have been impressed by the thoroughness and thoughtful approach that has been followed in designing and developing the programme (building on the NII's well-established assessment approaches and standards, but adapting and developing them into the rather different context of a new-build project). The guidance we have read certainly presents itself as indicative of a well-thought through project, and, more tellingly, step 2 has now almost been completed without particular difficulties. As we have discussed, effective working relationships have been forged with the other regulatory bodies (EA and OCNS) and the successful establishment of the Joint Programme Office is widely, and rightly, perceived to have been a considerable achievement in its own right. And despite the inevitable sense of time pressure that accompanies the new-build programme, we have felt absolutely no sense of compromise on the high standards of professionalism that pervade in the Directorate and its commitment to safety. Indeed, we have been immediately conscious of the level of commitment through the organization to operate a rigorous assessment process and fulfill expectations in this regard, despite the undoubted challenges that the new-build programme represents, especially in terms of the pressure of available resources and the on-going requirements of all the Directorate's other commitments.

3.3 In this situation, the Directorate has recognised the need to approach the new-build programme as a 'project' to be directed and managed in its own right, and has established a 'Programme Board' specifically to steer and oversee the initiative, as well as assigning a number of staff to undertake distinct roles for the project and establishing various special working groups and other fora to exercise leadership and take responsibility for different aspects of the work.

3.4 The scale of the challenge that the GDA represents to NII is such that it seems absolutely right to have adopted a distinct and purposeful 'programme management' approach and the arrangements put in place so far appear to have been sufficient for delivery of the Step 2 output. But that said, in a number of respects the arrangements that we have encountered here during Step 2 will need to be enhanced for the more demanding requirements ahead in Steps 3 and 4. In this regard, the Office for Government Commerce (OGC) has developed a very clear programme management process that might usefully provide the template for NII. While some aspects of the OGC's framework seem to be in place here, others are not. In particular, we think that the project planning and reporting arrangements will need to be strengthened for Steps 3 and 4 as they do not currently differentiate sufficiently clearly what should happen at different levels in the structure – e.g. what the Programme Board (the New Civil Reactor Programme Board (NCRPB) should be addressing; what the Regulators Assessment Coordination Board (RACB) should be addressing (that is different from the NCRPB); what the Joint Regulators Coordination Team (JPCT) should be addressing (that is different from the RACB) and how these different fora should interface with one another. While we have noted that the NCRPB (Programme Board) has a standing item on its agendas which is 'matters referred from RACB/JPCT', this seems to be about the only clear indication of specific reporting and co-ordination between the various groups undertaking responsibilities in the management of the programme.

How effective is the decision-making process operating?

3.5 A further area of concern we have going forward is about management arrangements for the programme. Although the official 'organogram' for the programme generally conveys reasonable compliance with expected good practice in project management, i.e. concerning the key roles and responsibilities to be undertaken, in practice we have encountered a significant amount of 'double and triple hatting' of roles and a number of staff unable to give sufficient attention to their assigned functions because of the requirements of other duties. Recently the problem with this pattern has been further highlighted by the absence from work of one of the key role holders for project planning.

3.6 This brings us to our key concern about the arrangements for programme management, where we believe that much more attention now needs to be devoted to planning and decision-making about resource requirements to address the increased demands of Steps 3 and 4. A particular priority should be

to map out the precise staffing resource requirements for Steps 3 and 4 – as with any effective project plan or Project Initiation Document (PID). While many staff raised their concerns about looming resourcing problems in general, and about the need for considerable assistance from TSOs (Technical Support Organizations); about capacity issues within the external consultancy marketplace, and about the urgency of much of the work to be undertaken (internally) in preparing and updating the TAGs (Technical Assessment Guides), we think what is urgently needed is a thorough and detailed assessment of needs (and with an evaluation of options for meeting them).

3.7 The step-up in resources required for Steps 3 and 4 will be exacerbated by the aging demographic profile of the NII staff and of the problems both for overall numbers and for the level of expertise in the organization that a series of imminent retirements are likely to create. These succession-planning issues, too, require more detailed attention and a longer term perspective to ensure that the organization does not have to be so reliant on the goodwill of would-be-retiring staff agreeing to stay on for a while longer (at least on a part-time basis).

3.8 One further issue relates to the important interface between the GDA process and the Government-led policy process for expanded nuclear power capacity. While it is surely right for the NII to seek to protect its reputation for independence, for example, by not including on its main programme board representation from the particular government department responsible for energy policy – i.e. the Department for Business, Enterprise and Regulatory Reform (BERR), there is inevitably much important liaison work to be undertaken here – and not least because so many of the resourcing issues for NII depend on decisions in BERR (notably the decision to reduce from four to three designs to go forward into Step 3 of GDA). While we are aware that that this has been discussed in various meetings with BERR officials, to our knowledge, the precise process and timing for prioritization has neither been announced to the Requesting Parties nor, we think, have the full implications of this uncertainty been given full consideration at the Programme Board (where, for example, we might expect some important decisions to have to be taken about how best to manage any further (and unplanned) workload pressures in the event of delay in the timing of BERR decision-making).

3.9 For all these reasons, and given all the inevitable uncertainties that accompany a programme of this scale and innovative nature, and particularly in view of the widely-recognised ‘ramping up’ of the workload that will be necessary for Steps 3 and 4, it seems vital to us that the programme is governed and managed in as tight a manner as possible.

3.10 In this respect we have identified two particular areas where we would recommend strengthening actions:

Investing in project management expertise

3.10.1 First, we recommend that the OGC process for Programme Management should be adopted for future Steps. Furthermore, we recommend that actions are taken as quickly as possible to strengthen the programme management team by the addition of generic project management expertise (ideally of personnel with prior experience of the OGC process). An immediate priority, we suggest, is to develop the work of charting out a feasible project plan for Step 3, taking account of the resources likely to be available, the estimated workloads involved and the timings required to complete the various tasks relating to each design. Happily in this regard, generic project management skills are in relatively good supply in the market place (at least when compared with those required for civil nuclear inspection) and so investing in project management expertise should prove fairly straightforward for the NII once the relevant budgetary provision is established. This approach should also be helpful in enabling more of the scarce NII technical skills to be focused on the professional tasks, rather than, as at present, divided between technical and project management functions.

Refining the governance and management framework

3.10.2 Second, for Steps 3 and 4, we think it would be beneficial to make some adjustment to the basic framework for governance and management of the programme to clarify functionality and relationships and to strengthen reporting lines. As indicated, the current framework involves three key fora – the New Civil Reactor Board (NCRB or the Programme Board) with quarterly meetings; the Regulators Assessment Co-ordination Board (RACB) also with quarterly meetings; and the Joint Regulators Co-ordination team (JPTC) which meets on a monthly basis. However, we do not think the roles and linkages between these bodies are sufficiently well defined to ensure effective programme management for the challenges of the next Steps.

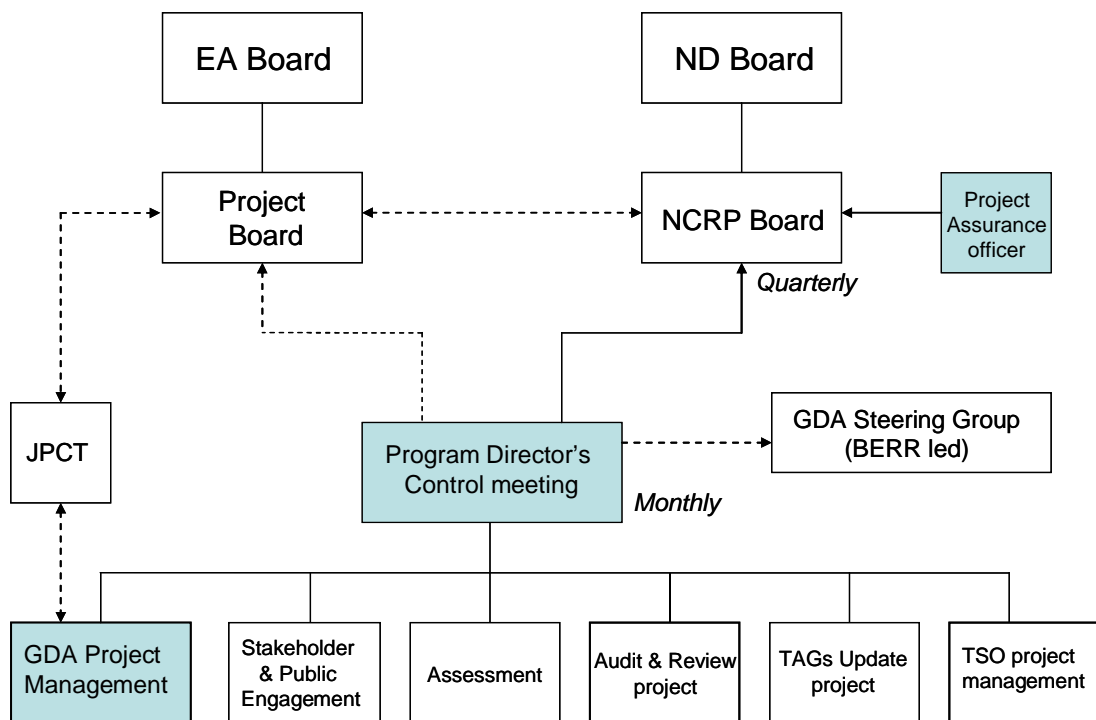
3.11 While it seems realistic for the main Programme Board (the New Civil Reactor Board or NCRB) to continue to meet on a quarterly basis, we consider that it would be helpful to strengthen the directorial role beneath it. One way to do this would be to establish a monthly meeting forum under the chair of the Programme Director to ensure closer oversight of all the project activity and to ensure both longer range programme-planning and management and to ensure early warning of issues is given to the Programme Board. In addition, this forum (which we suggest might be titled the ‘Program Director’s Control Meeting’) could provide a suitably high level forum to ensure the important interface with BERR is also managed effectively (as discussed above). In turn this Program Director’s Control Meeting could be the body to which not only the Programme Manager would be directly accountable, but also the various other personnel and groups responsible for different functions and aspects of the programme’s development and delivery (e.g. the existing Stakeholder Engagement & Public Involvement Group, or others that we expect will be needed in the near future, e.g. a technical assessors group; a group to co-ordinate TAGs work; a group to oversee TSO commissioning; and an audit group to provide an important internal audit role).

On this basis we do not see a need for the RACB as well. On the other hand, we are sure that the Project Assurance Officer role, devised to provide the main Programme Board with an independent assessment of progress, needs to be given more prominence, perhaps as a full-time appointment, rather than the very limited amount of time it is currently afforded. The enhanced Programme Management team would be responsible for bringing all these elements into a co-ordinated plan.

3.12 Based on the comments in paragraphs 3.10 and 3.11 our thoughts in this regard are summarised in Figure 1 below.

Figure 1

Possible change to Programme control/ reporting



3.13 As we have indicated, the GDA process to date (in Step 2) has generally progressed well and the organization has both adapted well to the new demands and developed its management and decision-making processes in new directions to good effect, and particularly in bringing a much stronger dimension of stakeholder engagement and public input into the process. But as we have also made clear, we do not think the organization has, as yet sufficiently prepared for the much greater demands of Steps 3 and 4 of GDA and in that respect, the risk is that the decision-making processes that have to date seemed appropriate for the purpose may quickly become noticeably inadequate.

3.14 A number of issues that are up and coming will be especially critical in this respect – particularly the issues of when and whether the Government will decide to reduce the number of designs to be subject to further assessment under GDA from four to three, and when and whether the additional staff required to operate Steps 3 and 4 will be recruited and in post.

3.15 To be effective in this uncertain context, the organization, and main Board in particular, needs to be decisive and prompt in following up on problems, especially the resourcing ones, as they are raised or become apparent. This, indeed, is the key reason why we have suggested a more ‘hands-on’ approach with the Programme Director convening a monthly ‘control meeting’ to give additional drive to the decision-making process and sharpen accountability in relation to overall project management and the tasks of the different sub-projects and working groups.

4. To what extent is HSE following the processes and procedures that it has established?

4.1 This question focuses particularly on the last of our five terms of reference for this review, and one that we interpret as being essentially about ‘compliance’. In many respects, this is likely to become a more important question at future stages, as the GDA work augments and as the pressures to complete the assessments mount. Meanwhile, at this particular juncture, we are confident that the established processes and procedures are being neither compromised nor neglected, other than in one important respect. This refers to the provision of the internal audit and assurance roles. Here we must repeat our concern that the Project Assurance role is barely being given any weighting at present, with the office-holder working only part-time and having a range of other duties to perform that account for the vast majority of his time – including some important corporate finance and special project assignments. Quite apart from the risks this under-attention to assurance raises, it could also be seen to reflect a shortcoming in compliance with HSE’s Business Management System, in which project management and assurance are described as key components.

4.2 That said, the Programme Board has given approval to the addition of an internal audit and review function as part of the project team and we are sure this will be helpful. Indeed, we think it will be very useful to commence this work with a full ‘lessons learned from Step 2’ review and with the aim of refining the processes for the subsequent Steps. This internal control seems essential in seeking to ensure confidence in the reputation of the organization, both on the part of the Requesting Parties, the wider industry and the general public.

5. Conclusions

5.1 Our first key message as a result of our review is that Step 2 of the GDA process has generally proceeded well and, indeed represents a considerable achievement. It is important to acknowledge and recognize just how much new work this has involved for the Nuclear Directorate – not least the development of a more outward-facing culture for the organization and a very significant gearing-up and refashioning of the organizational structure to oversee and manage the assessment process.

5.2 The second key message is that there is much more to be done in developing the management processes for Steps 3 and 4 if the impetus now established is to be successfully sustained. Preparation of, and management control by, a much more detailed project management plan, plus continuous and closer monitoring of progress, will be essential if the GDA process is to be effectively completed as intended.

5.3 The next six months will be a critical period in determining how well the project progresses. We believe it will be appropriate for the Process Review Board to undertake a further review in the autumn of 2008 (to evaluate performance against the plan and reassess capability for completion of Steps 3 & 4 as intended). By that time, we would expect that some current key uncertainties (e.g. the scale-down from four to three designs) would have been resolved and the capacity of the organization will have grown to levels commensurate with the demands of Step 3.

5.4 Meanwhile, we wish the organization well during the next few months, and hope that this report proves helpful in stimulating further reflection both on what has gone well, what has gone less well (and why), and on what now needs to happen to ensure continued success.

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Glossary

ALARP	<i>the principle that the residual risk shall be 'As Low As Reasonably Practicable'</i>
BERR	Department for Business, Enterprise and Regulatory Reform
CD	Compact Disc
EA	Environment Agency
GDA	Generic Design Assessment
HSE	Health & Safety Executive
JPCT	Joint (Regulators) Programme Coordination Team
JPO	Joint Programme Office
MSP	Member of the Scottish Parliament
NCRPB	New Civil Reactor Programme Board
ND	Nuclear Directorate
NGO	Non-Governmental Organization
NII	Nuclear Installations Inspectorate
OCNS	Office of Civil Nuclear Security
OGC	Office of Government Commerce
PID	Programme Initiation Document
RACB	Regulators Assessment Coordination Board
RP	Requesting Parties
SEPA	Scottish Environment Protection Agency
TAG	Technical Assessment Guide
TSO	Technical Support Organization