



Health and Safety  
Executive



Environment  
Agency

## GENERIC DESIGN ASSESSMENT

### PROGRESS REPORT

REPORTING PERIOD 1 JANUARY 2010 – 31 MARCH 2010

#### FOREWORD

We present here our Generic Design Assessment (GDA) quarterly progress report. This summarises the progress, achievements, and issues arising from the last three months, and looks at the key challenges ahead.

The next GDA major milestone is the Environment Agency's consultation on its findings to date on environmental and radioactive waste matters. This is planned to start on the 28<sup>th</sup> of June with the publication of consultation documents on each design. Comments will be welcome throughout the consultation.

HSE's Step 4 assessment is now well underway and, with a near full complement of specialist assessors working on GDA, together with support from a number of contractors, the rate of work is increasing rapidly. We are making reasonable progress with our work to complete a meaningful assessment in June 2011, when we aim to publish a suite of progress reports, together with the Requesting Parties' Resolution Plans for any outstanding Issues relating to GDA. However, it is clear that the key to achieving this is the provision of quality information, by the Requesting Parties, to meet our programme.

A number of important technical issues are identified in detail in the Step 3 reports and these are now being further addressed during Step 4. In February, we raised one of these (civil engineering of the AP1000) to Regulatory Issue status. We raise Regulatory Issues when we have concerns that are sufficiently important that they may, if not addressed, prevent the successful completion of GDA. It remains possible that other issues might also be raised to Regulatory Issue status in the future.

Our previous quarterly reports have included a 'dashboard' of metrics to illustrate progress in the various technical areas. We have had much positive feedback about the usefulness of them and we have now extended the metrics in this report to include data for previous months so that trends can be followed more easily.

If you have comments on the metrics or on any aspect of this report then please send them to us at: [new.reactor.build@hse.gsi.gov.uk](mailto:new.reactor.build@hse.gsi.gov.uk).

**Kevin Allars**  
Director  
New Nuclear Build  
Generic Design Assessment  
Health and Safety Executive

**Joe McHugh**  
Head of Radioactive Substances Regulation  
Environment Agency

## **EXECUTIVE SUMMARY**

During this last quarter the Environment Agency has focused on completing its detailed assessment and on preparing consultation documents based on its' findings to date.

The focus for HSE has been on getting the Step 4 assessment fully underway. This has included completing the assessment plans and setting-to-work the Technical Support Contractors (TSCs) on Step 4 analysis. Our detailed assessment is progressing well, and we have not identified any showstoppers at this point in the assessment process.

With our resources, plans and TSCs now mainly in place, our interactions with the Requesting Parties (RPs) are accelerating rapidly. This is putting significant pressure on the RPs to gear up to respond to our requests for additional information and this will remain a significant challenge for them throughout Step 4, and potentially beyond Step 4 as any issues arising from the GDA assessment will require additional effort to clear them.

We have included additional metric information in this report to give improved visibility of the performance trends in each topic area. The technical issues on one topic, the civil engineering on the AP1000, are sufficiently significant for us to have raised them to Regulatory Issue (RI) status, and this is discussed further in the report.

The main risk to successfully completing a meaningful assessment by June 2011 is the amount of additional work that the RPs have to complete to ensure they deliver quality and timely information to respond to our technical challenges, not just on the RIs, but on all the ongoing technical issues. To minimise this risk we are working closely with them and are sharing our assessment programmes in order to make it very clear that if we are to keep to the original programme we require quality information delivered to strict timescales.

## **REPORT**

### **Programme**

- 1 Our detailed plans for further work are based on a Step 4 completion date of June 2011, when the outcome of the HSE and Environment Agency assessments will be published in a suite of reports. The HSE has commenced Step 4 of its assessment and is making progress in all of the technical areas. The Environment Agency is finalising its assessment and is preparing for consultation on its findings. The consultation is planned to start on 28 June, and is discussed further below.
- 2 The HSE Step 3 reports published in November 2009 identified that there are a number of significant technical issues that remain to be addressed and further developments on some of these are discussed in this quarterly progress report. However, we remain confident that both reactor designs should be able to be shown to be acceptable in the UK, subject to satisfactory progress being made on the technical issues we have raised.
- 3 In previous quarterly reports we have stated that a lack of design detail is hampering our assessment in some areas. This remains the case and it is particularly relevant to Step 4 in which we aim to examine the detailed evidence supporting the RPs' safety claims and arguments. In a significant number of technical areas, the detailed evidence we would require to resolve all our technical issues does not yet exist and this may result in issues that will not be fully closed-out by June 2011. However, as we have always said, for GDA to be successful our assessment must be meaningful, which means that the design companies must provide sufficient information for us to carry out a thorough and detailed assessment in all of the key technical topic areas.

- 4 The Joint Programme Office (JPO) is key to the success of GDA, and provision of sufficient trained administrative and business support resources remains a challenge that we are addressing. Recent challenges have been turnover of staff and experience loss due to promotions, maternity leave etc together with the training burden for new staff. At the same time, the JPO is dealing with a growth in the volume of work not only for GDA but also for Phase 2 (nuclear site licensing, construction and environmental permitting).
- 5 We recognise that GDA is running in parallel with some site specific projects, notably EDF's plan to build EPRs at Hinkley Point. With that in mind, our forward programme includes a number of key milestones, including:
  - Summer 2010 - meetings to discuss with EDF and AREVA key GDA issues on EPR, before significant contracts are potentially signed;
  - Autumn 2010 – identification of known key issues for both designs, together with identification of areas where work is still in progress and could potentially still lead to new generic issues requiring resolution;
  - June 2011 - reports at the end of Step 4, on each design, identifying: what we have accepted on the basis of the GDA work; together with, if appropriate, an interim Design Acceptance Confirmation (DAC) specifying any generic issues that still need resolution; and, in conjunction with the Requesting Parties, Resolution Plans for those issues still to be cleared before any nuclear island safety-related construction commences;
  - At a future date dependent on a programme for resolving outstanding issues – a final DAC, which would then allow consideration as to whether a Consent could be issued for starting nuclear island safety-related construction activity.
- 6 EDF's target date for starting nuclear construction activity at Hinkley Point is late 2012. Our milestone programme for Hinkley Point is being worked up, in conjunction with the Environment Agency, EDF and AREVA and DECC, into a fully integrated and agreed programme for the build of EPR. This should then become the basis of programmes for other future new build proposals for either an EPR or AP1000.
- 7 The above reinforces our policy of providing increased regulatory confidence, at the same time as continuing to be robust and independent as a regulator, open and transparent in our work, and ensuring that high standards of safety, security and environmental performance are realised in these new build projects.

### **Key Requesting Party (RP) Interactions**

- 8 The regular and routine interactions with EDF and AREVA, and Westinghouse have continued and have increased in frequency to reflect the increasing pace of our work (for example there were over 60% more meetings with Westinghouse this quarter compared to the previous quarter). The meetings are held in the UK, France and the USA and include routine technical and project progress meetings, and high-level meetings with RP senior managers. The pace at which we are now working is resulting in an increase in questions and demands for additional information, which is proving to be a challenge for the RPs.
- 9 Interactions with the RPs are good and their performance in responding to our questions is generally satisfactory. However, we are seeing some evidence where this is not being achieved. There continues also to be long delays in delivery of some of the technical information and some is of poor quality in terms of scope or detail. We are encouraging the RPs to improve their performance in these areas as delivery of

timely and quality information is crucial to completing a meaningful assessment by June 2011.

- 10 Our last quarterly report was critical of Westinghouse about late delivery of several key safety submissions, which in turn delayed our assessment. Over this last quarter we are pleased to have noted improvements in Westinghouse's performance in this respect.
- 11 In our last quarterly report we also said that Westinghouse had taken a number of robust steps to improve its input to the GDA process, including reorganising its project management arrangements, increasing its presence in the UK, and dedicating more technical resource to GDA technical topics. We are now seeing evidence that this is starting to be effective in enhancing our interactions with Westinghouse and in helping it to provide some of the information necessary for us to complete a meaningful GDA Step 4 assessment. We will continue to monitor progress to ensure that a sustained improvement is achieved.

### **HSE GDA Assessment**

- 12 HSE specialists have largely completed their plans for the detailed assessment in Step 4 and have commenced both the new work and the follow-up of the issues identified during Step 3. These individual topic area plans are being collated into our detailed assessment plans and these have been shared with the RPs so that they understand our programmes and recognise that their commitments for information delivery are crucial to our assessment being completed to programme. In turn, we are asking the RPs for greater visibility of their own schedules.
- 13 As foreseen in our last quarterly report, the pace of our assessment is accelerating and there has been a large increase in technical meetings and questions. This can be seen in the interaction metrics in Annex 1.
- 14 In addition to the work of our specialist inspectors, some of our assessment will also include consideration of the outputs of the work of our Technical Support Contractors. The support work commissioned has increased significantly during this last quarter as we have been putting in place the support we need to complete the detailed assessment of Step 4. HSE has now placed 90 support contracts (an increase of 73% this last quarter) with a value in excess of £10m.

### **Metrics**

- 15 The colour-coded performance metric 'dashboards' are intended to provide: a clearer picture of overall progress, an indication of those topics that are progressing well, and also those that are of current concern. Following positive feedback on the usefulness of these metrics we have in this report included more information on the trends in the topic areas by comparing this month's metrics with those of previous months. We think this is an improvement, and we will welcome comments on them. In addition, we have added information to our website to help explain the purpose and format of the metrics. <http://www.hse.gov.uk/newreactors/gda-metrics.pdf>
- 16 The current dashboard metrics are shown in Annex 2, from which it can be seen that many areas are progressing well. Notably for the AP1000 there has been improvement (from red) in Internal Hazards, External Hazards, and Structural Integrity and for EPR there has been improvement (from red) in Structural Integrity.

- 17 Some other topics have moved, however, from amber to red. The present red indicators are:

For the Westinghouse AP1000

- Civil Engineering: Provision of evidence that the civil structure design is sufficiently robust remains an issue. We have raised a Regulatory Issue on this topic and this is discussed further below at para 21.
- Control & Instrumentation: Westinghouse has a considerable amount of work to do to produce an adequate safety case for the complex C&I systems proposed for the AP1000 and it needs to resource the UK project to address this as a matter of urgency. In addition, some detailed design information is unlikely to be available in time for Step 4 assessment. The impact of this is still unclear to us, and will depend on the level of detail that will be available, particularly for the safety demonstration for the main reactor protection system.
- Mechanical Engineering: There are a number of issues that contribute to making this a red metric.
  - i) On the novel fast-acting squib valves we had a further meeting with Westinghouse in the USA in February (jointly with the US regulator), in particular on the extensive design and development programme that is required to prove that they are suitable for their intended use on AP1000. Although Westinghouse is making progress, there is significant further work required on these key components to justify them to a standard commensurate with their safety importance.
  - ii) We consider it reasonably practicable to have additional filters on some parts of the building ventilation before the air is discharged to the environment, in particular to provide added protection in the unlikely event of incidents leading to potential radioactivity releases within the power station buildings. Westinghouse has now proposed some improvements to the design but we remain to be convinced that the proposals are sufficient.
  - iii) Westinghouse has, late in the GDA process, proposed a design change to the main reactor primary circuit cooling pumps. The proposal is for a different manufacturer to develop a modified design and this will require detailed design, development and substantiation. We have recently visited the new pump supplier and this has given us greater visibility and confidence in this area.
  - iv) Nuclear lifting equipment and the mechanical testing of Control Rod Drive Motors are other mechanical areas where we have required additional evidence and justification from Westinghouse.
- Reactor Chemistry: We have asked for additional information on a number of chemistry aspects (for example on how chemistry control affects radioactivity levels around the primary circuit) and the delivery dates currently proposed for this information threaten our ability to complete assessment within Step 4. We are therefore seeking accelerated delivery programmes from Westinghouse.

For the EDF and AREVA EPR

- Control & Instrumentation (C&I): Our questions on the C&I architecture were significant enough to be raised as a Regulatory Issue (RI) in April 2009 (see para 20 below). EDF and AREVA have proposed modifications and we anticipate that these will confirm that an acceptable position can be reached for GDA. Until we have received and had time to consider the details, the indicator will remain red. In March we had a senior level meeting with EDF and AREVA on this topic where we also

stressed the importance of them fully addressing the issues we have identified on other aspects of the C&I safety case.

- Human Factors: Although HSE assessment was limited during Step 3 due to our resource availability, we are now making good progress. However, we are being hampered by a lack of evidence to support claims made about the relative risk contribution from human actions. To help make up for this significant shortfall, we had hoped that information could be made available from EDF's work in France. A meeting is scheduled for April during which we expect EDF and AREVA to provide programmes for the evidence they can deliver within Step 4, and we will then consider the implications for our assessment process.

18 There are other topics where we have found shortfalls against our expectations and where we are discussing significant issues with the RPs. These are evident from the amber metrics, for example on Fault Studies, Fuel Design and Electrical Systems for the AP1000 and Mechanical Engineering, Environment and Fuel Design on the EPR. In some topics the outstanding issues are more challenging to resolve within Step 4 timescales and these include:

#### For both Reactor Designs

- Higher Active Waste and Spent Fuel Management: We are reviewing the Disposability Assessments undertaken for the RPs by the Nuclear Decommissioning Authority's Radioactive Waste Management Division (NDA/RWMD). We have also now received further information from the RPs to support the RWMD Assessments and to make a case for the disposability of spent fuel and Intermediate Level Waste to ensure it can be stored, transported and disposed of. Whilst this information will be acknowledged in the Environment Agency's forthcoming consultation documents, it was received too late to be reviewed and have the findings included.
- Structural Integrity: There remain issues relating to primary pressure circuit components where it is claimed that the likelihood of gross failure is so low that it can be discounted. We have asked both RPs to clearly identify for which components it is making this claim and we have also asked for an appropriate approach to achievement and demonstration of integrity for these components. This topic is also affected by proposed design changes on both reactors. Whilst progress is being made, the volume of work and technical issues are challenging.

#### For the Westinghouse AP1000

- Internal hazards: The original safety case provided by Westinghouse had significant shortfalls in comparison with our expectations. Additional information has now been provided but our assessment has identified areas where further supporting work is required by Westinghouse to improve the clarity of the safety arguments.
- Management for Safety / Quality Assurance / Cross Cutting issues:
  - i) The safety categorisation and classification system currently used by Westinghouse is not in accordance with international good practice, and we asked it to review this and address the implications. This is important as the Classification determines such things as the design standards, QA requirements, and subsequent maintenance. Westinghouse explained to us in March how it is planning to implement a revised safety categorisation and classification system. The basic proposals seemed acceptable apart from the intention not to apply nuclear codes and standards to 'Class 2' systems, which we challenged. We are now waiting to see the detailed implementation proposals and how these might affect the design.

- ii) The design reference point for GDA continues to be the subject of discussion with Westinghouse. It submitted proposals at the end of December, but we judged these not acceptable and they have been the subject of further discussion. The position is becoming critical as we progress through Step 4 without resolution. Westinghouse plans to provide revised proposals at the end of April.
  - iii) Metrication: Many of the GDA submissions for the AP1000 are in Imperial units. Discussions about metrication have been ongoing for some time and our position was summarised in our Step 3 report. We met with Westinghouse in February on this topic and we wrote in March to make our position clear that the design requires conversion to metric units at the earliest opportunity. Currently we await an acceptable forward programme for metrication and Westinghouse has committed to deliver further information at the end of April.
  - iv) Quality Assurance: We made a number of comments on this topic in our Step 3 report, primarily about needing to see the full breadth and depth of the Westinghouse quality management systems being applied to the UK project. This has been discussed further this quarter and Westinghouse has taken a number of steps, including reorganising its project management arrangements, improving its quality arrangements and making further submissions to us. This remains under discussion.
  - v) The AP1000 uses many SMART control devices (electrical and mechanical components with built-in computer processors). Many of these have functions that are important to safety and Westinghouse needs to update the safety case to justify how these are designed, built and maintained to standards commensurate with their importance.
- Probabilistic Safety Analysis: Recent interactions with Westinghouse have been aimed at trying to identify what work is being done within GDA to improve the scope and quality of the PSA. Westinghouse has indicated so far that significant elements would not be undertaken until a contract has been received to build an AP1000 in the UK. Our initial view is that Westinghouse is not doing sufficient work on the PSA within GDA and this may lead to HSE having difficulty in judging the acceptability of what Westinghouse has done. This remains under discussion.

#### For the EDF and AREVA EPR

- Civil Engineering: Within Step 4, a more detailed review of the application of the design codes has started. This includes discussions with the designers on key structural components. A number of detailed design documents have been supplied, and a further tranche requested. The response to our queries on the use of grouted in place tendons has fallen short of expectations in a number of areas and we have requested further clarity. The response on the reliability of the French civil engineering design codes (ETC-C) is late.
- External Hazards: Progress on aircraft impact has improved markedly following a number of recent meetings. The process for transfer of sensitive nuclear information has been rationalised which should aid future exchanges. The assessment of seismic analysis of the nuclear island structures has also started, and we have raised a large number of queries on detailed aspects of the analysis methodology.
- Fault Studies and Transient Analysis: This is a topic where our assessment was slow in starting due to our lack of resource, but where we have now allocated additional specialist inspectors. The volume of work and technical issues that need to be tackled by us and by EDF and AREVA during Step 4 are particularly challenging.

- Design changes: EDF and AREVA have advised us they wish to make changes to the UK EPR reference design. These will include changes to C&I architecture and fire barriers in a response to regulatory comments; a variant to the material of the Steam Generator that EDF and AREVA wish to offer as an option; and changes to the containment liner design following experience feedback from EPR construction sites. When we do receive the detailed proposals, we will have to consider the impact on GDA scope and on our assessment timescales.

### Regulatory Issues

- 19 We are continuing to progress many technical questions and issues on a variety of topics. Some of these are significant enough to be formalised as Regulatory Issues (RIs), i.e. where we judge that a particular feature of the design might not meet international standards of good practice and thus, if not satisfactorily addressed, may challenge the successful completion of GDA. Currently there are two extant RIs.
- 20 Control & Instrumentation of the EPR. As reported in earlier reports, our assessment identified significant concerns about the complexity of the architecture and on the very high reliabilities that EDF and AREVA were claiming. EDF and AREVA have given us a written commitment to undertake modifications which appear to address the issues we raised in the RI. We will need to see and assess the details, but we are hopeful that these will confirm that an acceptable position can be reached for GDA. We expect to receive a key submission on this RI in June 2010.
- 21 Civil Engineering of the AP1000. The RI relates to the proposed new steel-concrete-steel construction design for key structures within the “Nuclear Island” including the shield building. There is a lack of evidence to demonstrate that the structures would be sufficiently robust. We have therefore requested appropriate evidence to demonstrate that the strength and durability of the structures have been adequately justified. Westinghouse is considering a number of possible solutions, such as further analysis and testing, and possible changes to the design, and intends to provide detailed proposals and supporting evidence in stages up to the end of October 2010. The US regulator has raised a similar issue for the shield building alone and we are working closely with it to ensure maximum leverage and harmonisation of outcomes. Further information is available at: <http://www.hse.gov.uk/newreactors/news.htm>

### **Working with Overseas Regulators**

- 22 Both the HSE and Environment Agency are continuing to work with overseas regulators, particularly those in the USA, France and Finland, which is where the two designs emanate from and/or are being constructed. As a significant new reactor build programme is well underway in China, we have increasingly also been talking to the Chinese regulators. We use these regulatory information exchanges both to inform our assessment (and theirs) to confirm that we are applying the best international standards, and to obtain knowledge of other countries assessment and construction experiences. By working together we can improve both the potential for international harmonisation of design proposals, and also the effectiveness of the vendor/operator/regulator interactions.
- 23 Significant among these this last quarter were discussions with the US regulator (NRC) on the AP1000 civil structures; and a review with the French regulator (ASN) on their plans for continued assessment of the EPR. We had originally hoped that the safety assessment of AP1000 and EPR by their ‘home’ regulators would be complete well before we completed GDA Step 4 in June 2011 so that we could fully consider their conclusions during our own assessment. However, we now understand that there is significant ongoing safety assessment by the home regulators for both AP1000 and EPR. This is a significant regulatory process concern for us, the implications of which



are being considered at present, together with ways of ensuring the best possible international cooperation on and harmonisation of assessment outcomes.

- 24 We have attended a number of MDEP (Multi National Design Evaluation Programme) meetings on EPR and AP1000, on a wide range of topics. In addition, we have had multinational discussions with the USA, French and Finnish regulators about the manufacture of EPR primary circuit pipework.
- 25 As part of this international cooperative working, this past quarter we have visited the EPR construction site at Flamanville in France and the AP1000 construction site at Sanmen in China.
- 26 We are being increasingly approached by regulators, Government Officials and contractors tasked with investigating how other countries presently without nuclear power could use the experience of GDA in their future regulatory work on new nuclear build. Whilst it is important that we show willing to the international community, we are having to restrict this activity in order to prioritise on the GDA process in this country.

### **Stakeholder Engagement**

- 27 We continue to see an increase in the number of visitors to our new reactors website. During 2010, the average number of 'hits' has increased to around 7000 per month, peaking at over 8000 in February. This coincided with the publication of our 4th Quarterly Report and the Regulatory Issue against the Westinghouse AP1000. This is a good indication that we are being effective in communicating about our work on new nuclear build, and that general interest in our work is increasing.
- 28 In February we published our joint HSE/Environment Agency Stakeholder Engagement Strategy and Action Plan. This sets out the overarching principles driving our approach to stakeholder engagement and the work we are doing to meet our objectives, namely: ensuring stakeholders have opportunities to be involved in the GDA process; actively engaging with stakeholders; and publishing relevant and timely information. The Environment Agency published its stakeholder engagement strategy for nuclear new-build and its national and local stakeholder engagement plans for GDA in May. These strategies and plans can be found on the new reactor website at: [www.hse.gov.uk/newreactors/publicinvolvement.htm](http://www.hse.gov.uk/newreactors/publicinvolvement.htm)
- 29 We gave presentations and attended a number of events to talk about GDA, including at a conference in January on New Nuclear Build Legal and Regulatory issues, and at a fringe meeting attended mostly by Site Stakeholder Groups at the Nuclear Decommissioning Authority (NDA) 'National Stakeholder Group' event on 16 March. Media interest in the GDA process remains high, and we gave a number of media interviews and produced a number of feature articles during the reporting period.
- 30 The reactor designs continue to be available for viewing via our website (or via hardcopy by contacting the Joint Programme Office at: [new.reactor.build@hse.gsi.gov.uk](mailto:new.reactor.build@hse.gsi.gov.uk)) and people can make comments/ask questions of the designers Westinghouse, EDF, and AREVA. The designers will respond directly and we will view questions and responses so that these can be taken into account in reaching our decisions.

## Environment Agency Consultation

- 31 On the 28<sup>th</sup> of June, the Environment Agency plans to consult on its initial view on the acceptability of the two reactor designs. We will produce a consultation document which will ask general and technical questions, explain our view, and our conclusions on whether to issue a statement of design acceptability for each design. We want to ensure that stakeholders:
- understand (i) how the assessment of the reactor designs has been done and (ii) our findings;
  - have an opportunity to give us their views (especially in response to key consultation questions);
  - know what will happen next; and,
  - help us ensure that our final decisions on the acceptability of the reactor designs are as robust as possible.
- 32 Following the consultation, we will:
- record and respond to all views received that are relevant to our roles;
  - publish a summary of stakeholder input and our response in the Environment Agency's consultation response on our websites and produce hardcopy reports on request, demonstrating clearly where stakeholder input has been taken into account; and,
  - communicate progress on GDA and our final decision via our websites, email, our e-bulletin, and future issues of these quarterly reports.
- 33 Please contact the Environment Agency and ask for your details to be included on the Environment Agency's GDA stakeholder database so that we automatically keep you up to date. Tel: 08708 506 506, Email [gda@environment-agency.gov.uk](mailto:gda@environment-agency.gov.uk). Our Stakeholder Engagement Plan is published on our website at [www.hse.gov.uk/newreactors/publicinvolvement.htm](http://www.hse.gov.uk/newreactors/publicinvolvement.htm).

## WORKING WITH DEPARTMENT OF ENERGY AND CLIMATE CHANGE (DECC)

- 34 We continue to provide expert advice to DECC's Office for Nuclear Development (OND), the sponsoring Government Department for new nuclear development. OND is leading on topics such as siting, regulatory justification, waste and decommissioning costs, and the nuclear National Policy Statement. For more information go to: <http://www.decc.gov.uk>.
- 35 On 25 March we updated the Nuclear Development Forum, chaired by the DECC Secretary of State, on the progress with GDA.
- 36 In February, HSE and the Environment Agency both provided responses to the DECC Consultations on the draft National Nuclear Policy Statement and on the Secretary of State's draft Decisions on the Regulatory Justification of the AP1000 and EPR reactor designs. HSE and the Environment Agency also provided evidence to the Energy and Climate Change Select Committee's inquiry into the Government's suite of energy National Policy Statements.

## CONCLUSIONS

- 37 HSE's Step 4 detailed assessment is well under way and the pace of our work is accelerating. We continue to make good progress on GDA and in identifying technical issues and the RPs are making progress in addressing them. As HSE is only part way through GDA, many issues remain open and require further work, and some of these are significant.
- 38 The Environment Agency has completed the detailed assessment and is preparing for consultation on its findings, which it plans to start on the 28<sup>th</sup> June.
- 39 Despite having now raised a Regulatory Issue on both designs, we have not identified any GDA showstoppers to date. The HSE and the Environment Agency are confident, subject to high quality and timely safety submissions from the RPs, that we will complete a meaningful assessment of the generic design proposals by June 2011.
- 40 The main risk to this is the amount of additional work that the RPs have to complete to ensure they deliver quality and timely information to respond to our technical issues. To minimise this risk we are working closely with them and are sharing our assessment programmes in order to make it very clear that if we are to keep to the original programme, we require that quality information is delivered to strict timescales.
- 41 While our programmes will provide increased regulatory confidence, we will continue to be robust and independent as a regulator, and open and transparent in our work, and ensure that high standards of safety, security and environmental performance will be realised in these new build projects.

To find out more about Generic Design Assessment (GDA) - log onto:

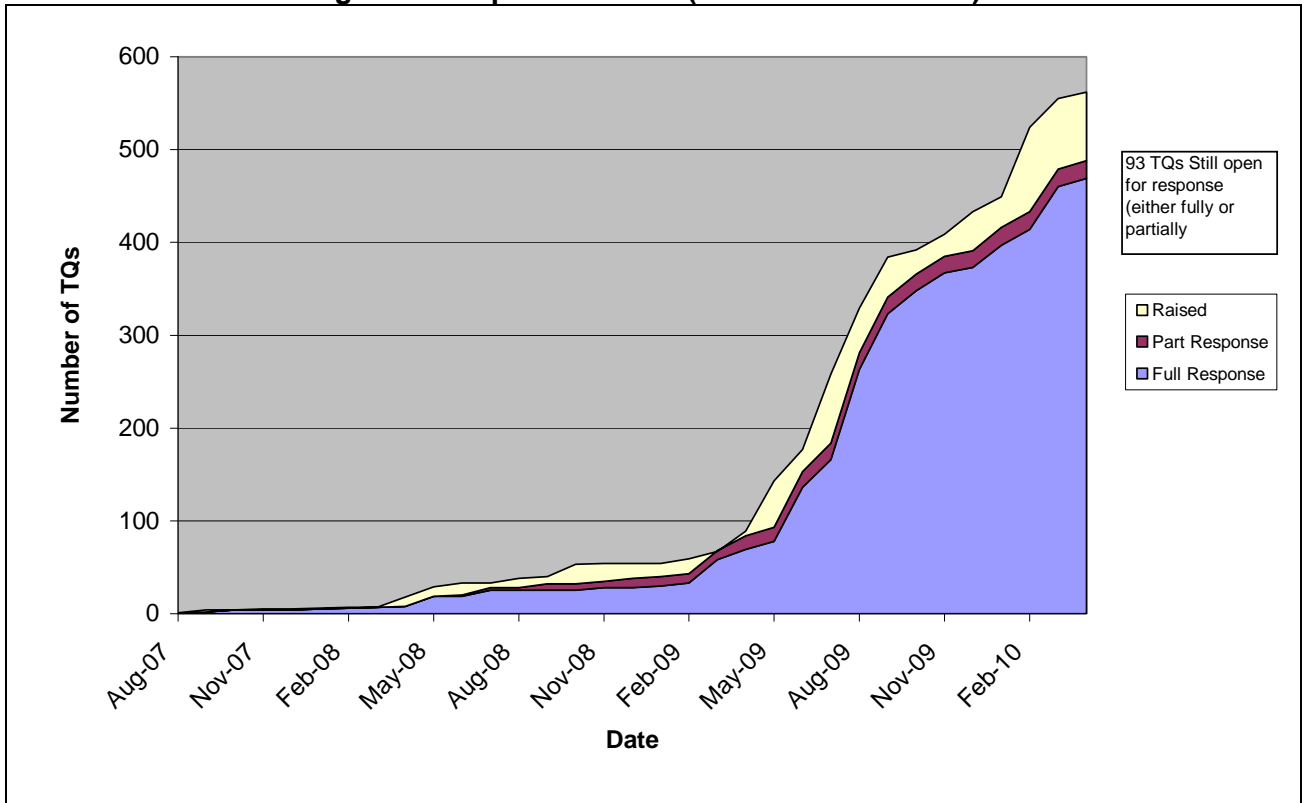
<http://www.hse.gov.uk/newreactors/index.htm>

Receive the latest news and information on GDA - subscribe to our free e:mail bulletin -

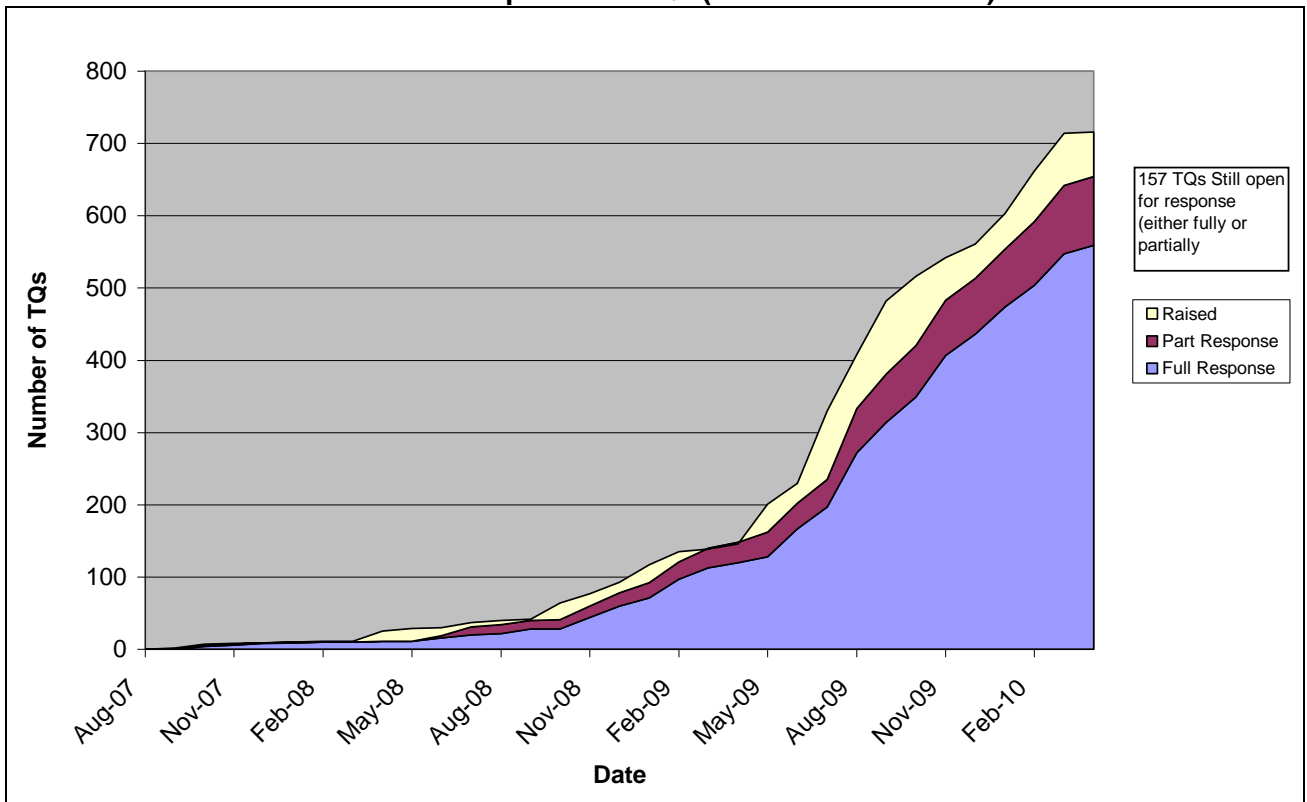
<http://www.hse.gov.uk/newreactors/ebulletin.htm>

**Annex 1  
GDA Interaction Metrics**

**Westinghouse response to TQs (as at 31 March 2010)**



**EDF and AREVA response to TQs (as at 31 March 2010)**



**Annex 1**  
**GDA Interaction Metrics**

**MEETING SUMMARY DURING Jan – Mar 2010**

Westinghouse            80, of which 75 were in the UK, and 5 in the USA

EDF and AREVA        56, of which 36 were in the UK, and 20 in France

Overseas regulators meetings: France (2); USA (2); Finland (1); Multi-National (5);

**REGULATORY COSTS CHARGED TO RPs to end Dec 2009**

**(one quarter behind the rest of this report):**

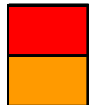
Westinghouse: £8.1m; EDF and AREVA: £8.7m

## Annex 2 GDA Metrics Dashboard

### EDF and AREVA Metrics

		Internal Hazards	Civil Engineering	External Hazards	Probabilistic Safety Analysis	Fault Studies	Control and Instrumentation	Electrical Power Systems	Fuel Design	Reactor Chemistry
GDA on track?		Green	Green	Green	Green	Green	Green	Green	Green	Green
EDF/Areva submission quality and schedules	To Date	Green	Green	Green	Green	Green	Green	Green	Green	Green
	Predicted	Green	Green	Green	Green	Green	Green	Green	Green	Green
Exclusions	Potential	Green	Green	Green	Green	Green	Green	Green	Green	Green
	Resolution Difficulty	Green	Green	Green	Green	Green	Green	Green	Green	Green
		O N D J F M	O N D J F M	O N D J F M	O N D J F M	O N D J F M	O N D J F M	O N D J F M	O N D J F M	O N D J F M

		Radiation Protection	Mechanical Engineering	Structural Integrity	Human Factors	Management for Safety and Quality Assurance	Rad Waste and Decommissioning	Environmental	Security
GDA on track?		Green	Green	Green	Green	Green	Green	Green	Green
EDF/Areva submission quality and schedules	To Date	Green	Green	Green	Green	Green	Green	Green	Green
	Predicted	Green	Green	Green	Green	Green	Green	Green	Green
Exclusions	Potential	Green	Green	Green	Green	Green	Green	Green	Green
	Resolution Difficulty	Green	Green	Green	Green	Green	Green	Green	Green
		O N D J F M	O N D J F M	O N D J F M	O N D J F M	O N D J F M	O N D J F M	O N D J F M	O N D J F M



Significant shortfall against regulator expectations

Shortfall against regulator expectations



Meets regulators expectations

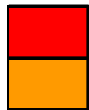
Insufficient information or assessment to be able to form a judgement

## Annex 2 GDA Metrics Dashboard

### Westinghouse Metrics

		Internal Hazards	Civil Engineering	External Hazards	Probabilistic Safety Analysis	Fault Studies	Control and Instrumentation	Electrical Power Systems	Fuel Design	Reactor Chemistry
GDA on track?		Red	Red	Red	Green	Green	Green	Green	Green	Green
WEC submission quality and schedules	To Date	Red	Red	Red	Green	Green	Green	Green	Green	Green
	Predicted	Red	Red	Red	Green	Green	Green	Green	Green	Green
Exclusions	Potential	Red	Red	Red	Grey	Green	Green	Green	Green	Green
	Resolution Difficulty	Red	Red	Red	Green	Green	Green	Green	Green	Green
		O N D J F M	O N D J F M	O N D J F M	O N D J F M	O N D J F M	O N D J F M	O N D J F M	O N D J F M	O N D J F M

		Radiation Protection	Mechanical Engineering	Structural Integrity	Human Factors	Management for Safety and Quality Assurance	Rad Waste and Decommissioning	Environmental	Security
GDA on track?		Green	Red	Green	Green	Green	Green	Green	Green
WEC submission quality and schedules	To Date	Green	Red	Green	Red	Green	Green	Green	Grey
	Predicted	Green	Red	Green	Green	Green	Green	Green	Green
Exclusions	Potential	Grey	Red	Red	Green	Green	Green	Green	Grey
	Resolution Difficulty	Grey	Red	Green	Green	Green	Green	Green	Green
		O N D J F M	O N D J F M	O N D J F M	O N D J F M	O N D J F M	O N D J F M	O N D J F M	O N D J F M



Significant shortfall against regulator expectations

Shortfall against regulator expectations



Meets regulators expectations

Insufficient information or assessment to be able to form a judgement