



Head of EDF EPR UK Licensing Team
EDF Energy
1 Bedford Street
London
WC2E 9HG

**Joint Programme Office
Nuclear Reactor Generic Design
Assessment**

4N2 Redgrave Court
Merton Road
Bootle
Merseyside
L20 7HS

Tel: 0151 951 5702
Fax: 0151 951 3732

new.reactor.build@hse.gsi.gov.uk

Date 1 February 2008

Your ref:

Unique No: EPR70021R

TRIM ref: 5.1.3.571. 2008/43418

GENERIC DESIGN ASSESSMENT – REGULATORY ISSUE RI-EPR-0001 REV 0

From ongoing dialogue between EDF and AREVA NP and the Environment Agency, you will be aware that we have a number of concerns regarding the lack of information in your submission received to date, in particular in the following areas:

- Waste Strategy
- Generic Site Description
- Dose Assessment
- Impact on non-human species
- Demonstration of Best Available Techniques (BAT)

The deficiencies were further discussed during the face-to-face meeting between the Regulators and EDF and AREVA NP held at Redgrave Court on 9 and 10 January 2008. Based on the information received to date, and in accordance with the agreed Interface Protocol, we enclose a Regulatory Issue (RI) as we are of the opinion that you have not demonstrated (or may not be able to demonstrate):

- I. that our regulatory requirements are met; or
- II. that the Best Available Techniques will be used to minimise the arisings and impact of conventional and radioactive wastes.

These issues are of sufficient importance that they would prevent progression to the next step of Generic Design Assessment.

Both our requirements (in our P&I document) and your submission are in the public domain, and as we aim to conduct our assessment in an open and transparent manner, the concerns identified in the RI will be presented in the Public Statement of the findings from our preliminary assessment.

We expect you to respond with a Commitment (as defined in the Interface Protocol section 3.4.3) to address our concerns and set out a timetable for submission of the required additional information. Assuming we are content with your response, we would reflect this ongoing programme of work in our Public Statement. This would

also justify our progressing to the detailed assessment stage (assuming that you are successful in the forthcoming prioritisation exercise).

While we are issuing an RI because of lack of information, at this stage we are not aware of any fundamental concerns relating to the EPR design.

The RI addresses significant issues but there are also observations and recommendations from the joint inspections that you need to consider and provide a response.

Yours sincerely

Nuclear New Build Team

GDA Regulatory Issue	Unique No.:	RI-EPR-0001
	Rev. No.:	0
	Date raised:	1 February 2008
	Reply required by:	15 February 2008
	TRIM Ref.:	5.1.3.802. 2008/43275
Raised by (Inspector / Regulator):	Environment Agency	
Authorised by (Inspector / Regulator):	Environment Agency	
Main Topic:	Generic Design Assessment	
Title:	Information required by the Environment Agency for the detailed assessment stage	
Description of Issue:		
<p>We published our “Process and information document for generic assessment of candidate nuclear power plant designs” (P&ID), version 1, on 10 January 2007.</p> <p>The P&ID described our process for generic assessment and, in particular, listed in Table 1 the information to be provided.</p> <p>We have completed our preliminary assessment (see P&ID paragraph 3.3) of your submission provided in August 2007.</p> <p>We have found that the submission failed to provide information in a number of areas as referenced in Table 1 of the P&ID. Where information was provided, in some areas this lacked detail, in particular in terms of options appraisals to enable us to determine whether the Best Available Techniques would be used.</p> <p>We consider that the lack of information prevents us from proceeding to our detailed assessment (see P&ID paragraph 3.4) without your Commitment (as defined in the Interface Protocol section 3.4.3) to address the deficiencies of information.</p> <p>We have attached a Schedule to this Regulatory Issue that identifies where information is missing or deficient against the references in Table 1 of the P&ID. You should refer in the first case to the information requirements specified in Table 1 to define the additional information required. We have provided some comments to assist your understanding of our requirements and we will be available to answer any queries you may have.</p> <p>We request your Commitment to provide additional information with a timetable listing each reference in the Schedule. We suggest you provide each part of information as soon as available to reduce delay to our public consultation proposal (see P&ID paragraph 3.5), and not later than end December 2008.</p> <p>We request that further information provided is clearly signposted against the P&ID detailed references to facilitate our assessment.</p>		
Requesting Party Response:		
Requesting Party responsible person (name / position / organisation):		
Respondee (if different to above):		
Full / part response:		
Response number:	1	
Response date:		

GDA Regulatory Issue		Unique No.:	RI-EPR-0001
		Rev. No.:	0
		Date raised:	1 February 2008
		Reply required by:	15 February 2008
		TRIM Ref.:	5.1.3.802. 2008/43275
Raised by (Inspector / Regulator):	Environment Agency		
Authorised by (Inspector / Regulator):	Environment Agency		
Main Topic:	Generic Design Assessment		
Title:	Information required by the Environment Agency for the detailed assessment stage		
List of all attached documents (include a filename for each attached document that uniquely identify each document by name and revision):			
Requesting Party Contact information:			

Regulatory Issue RI-EPR-0001 REV 0
Schedule of further information required for detailed assessment stage

P & I D Reference¹	Preliminary Assessment/ Information required²
1.3	<p>Information lacking</p> <p>1. The characteristics of the environs of the site/sites that are used to assess the environmental impact of the design. A critical group/groups should be defined with its habits. A sensitive habitat should be defined for non-human species. The Environment Agency report “Initial Radiological Assessment Method SC030162” should be referenced. Examples of recent assessments are given in “Decision on the future regulation of disposals of radioactive waste from British Energy Generation Limited’s Nuclear Power Stations in England” published March 2007.</p>
1.4	<p>Information provided as an overview, lacking in detail</p> <p>1. A definitive strategy shall be proposed for both radioactive and non-radioactive wastes.</p> <p>2. Information provided to support the strategy will need to include design information for the ancillary facilities required ie waste treatment or storage.</p> <p>3. A review of the strategy shall be provided to demonstrate that the strategy has encompassed relevant UK requirements, as listed in the P & I D.</p> <p>4. The strategy for non-radioactive wastes will need to demonstrate that the Waste Framework Directive, Waste Management Licensing Regulations 1994, Pollution Prevention and Control Regulations and Duty of Care requirements have been considered and will be satisfied.</p>
1.5	<p>Information on proposed techniques provided but no BAT assessment</p> <p>1. A formal BAT assessment is required for each significant waste stream: an options appraisal for prevention or, if prevention not possible, reduction to the minimum emission. The appraisal should then be used to justify the chosen technique. The Environment Agency PPC guidance note H1 “Environmental Appraisal and Assessment of BAT” provides an indication of the approach we would prefer.</p> <p>2. Design features that facilitate decommissioning and minimise arisings of decommissioning wastes are an important consideration for us and need consideration in detail.</p> <p>3. The P&ID indicates a number of issues “that reference should be made to”. It is not clear these that issues have been addressed, you should ensure that further information does address these issues and is clearly signposted to facilitate assessment against each issue.</p>
2.1	<p>Information provided but additional detail required</p> <p>1. An assessment of waste arisings during decommissioning phase to be included.</p> <p>2. A single gaseous discharge stack is proposed, information on this stack, ie height, diameter, flows etc is lacking.</p> <p>3. Detail on the management, handling and disposal of solid wastes is required – this supports the strategy provided in 1.4 above and should answer 1.4.2 above.</p>
2.2	<p>No information provided</p> <p>1. The monthly profile of emissions over longer periods including operating cycles is important for our assessment. It enables us to assess short term impacts for any peak emissions. It enables us to compare the design with current operating power stations across the world.</p>

P& ID Reference¹	Preliminary Assessment/ Information required²
2.3	<p>Information provided – more detail required</p> <ol style="list-style-type: none"> 1. You have provided maximum emissions and we have taken these, at this stage, as proposed annual limits. You will need to justify these against your “realistic” emissions using the Environment Agency report referenced in the P&ID. 2. The derivation of emissions with supporting data will need to be audited by us, this could be met in part by inspection at offices/stations.
2.4	<p>Some information provided as an overview – more detail required</p> <ol style="list-style-type: none"> 1. Wastes arising during decommissioning need to be assessed as well as during operation. 2. The physico-chemical characteristics of wastes are important to us so that we can assess the suitability of your proposed treatment, storage and disposal proposals. 3. Quantification of radionuclides within wastes are again important to us for the same reasons as 2. above. 4. You are strongly recommended to approach the Nuclear Decommissioning Authority regarding your disposal proposals and provide us with their views.
2.5	<p>Some information provided as an overview – more detail required</p> <ol style="list-style-type: none"> 1. Quantities of spent fuel over the station lifetime and estimates of short term storage quantities in the cooling ponds are required. 2. Longer term spent fuel management plans need to be detailed and supported with design of any storage facility. 3. Your plan for final disposal are required. As with 2.4 above you are recommended to approach the Nuclear Decommissioning Authority regarding your disposal proposals and provide us with their views.
2.6	<p>Some information provided as an overview – more detail required</p> <ol style="list-style-type: none"> 1. General arrangements for monitoring have been described but lack consideration of the issues raised by the P&ID: <ol style="list-style-type: none"> 1.1 adequacy against EU Commission Recommendation 2004/2/Euratom; 1.2 how a decision on adequacy of arrangements has been reached; 1.3 justification that the monitoring represents the Best Available Techniques. 2. Design details of monitoring points and the specific radionuclides to be measured at each should be included. 3. Accurate flow monitoring is considered to be good practice. Refer to the Environment Agency standard for measuring flow (MCERTs): M18. 4. Compare your proposals to our guidance on monitoring: M11 and M12.
2.7	<p>Initial information provided – detailed assessment required</p> <ol style="list-style-type: none"> 1. Information using our screening methodology was requested by our TQ EPR000008. This will need to be developed by a detailed assessment to answer issues in the P&ID, in particular: <ol style="list-style-type: none"> 1.1 annual dose from direct radiation; 1.2 short term doses – will need to relate to 2.2 above; and 1.3 build-up of radionuclides in the environment including at sensitive non-human habitats. 2. The methodology used for detailed assessment needs to be defined and proposals given for how this methodology will be expanded for specific site assessments in the future. Computer models used will need full definition so that we may assess whether appropriate for use in England and Wales.
2.8	<p>No information provided</p> <ol style="list-style-type: none"> 1. Refer to P&ID and complete all requirements.
2.9	<p>Some information provided – some P&ID issues not addressed</p> <ol style="list-style-type: none"> 1. Refer to P&ID and tabulate all assumed data to enable independent dose assessments to be made.

P& ID Reference¹	Preliminary Assessment/ Information required²
2.10	<p>Information provided as an overview, lacking quantitative assessment</p> <p>1. We will need to assess impact to flora and fauna within any sensitive habitat (Habitats Directive). Detailed quantitative assessment will be needed for us to carry out our own appropriate assessment.</p>
3.1	<p>Information provided as an overview – more detail required</p> <p>1. You will be using seawater cooling and have provided an estimate of flow required and return temperature. We need further information:</p> <ul style="list-style-type: none"> 1.1 on inlet fish deterrent schemes; 1.2 options for beneficial use of waste heat; 1.3 example assessment of heat impact for typical UK coastal scenario; 1.4 as noted in 2.10 above the impact on sensitive habitats is an important part of our assessment and we will need quantitative data against typical UK sea species.
3.2	<p>Basic information provided but more detail needed against UK regulatory requirements</p> <p>1. Provide information on the presence on site of List 1 and List 2 substances defined in the Groundwater Regulations; and</p> <p>2. Demonstrate that BAT is used to prevent direct or indirect discharges of these to groundwater.</p> <p>3. Define ground information to be gathered before construction, the use of a Conceptual Site Model is recommended.</p> <p>4. Specify in general terms a monitoring programme for the life of the installation including use of boreholes.</p> <p>5. Provide information on the discharge of listed dangerous substances and their concentrations in the receiving waters, required by the Environment Agency to assess whether Environmental Quality Standards could be exceeded.</p> <p>6. Present an options appraisal to demonstrate that BAT has been used to prevent or minimise emissions of pollutants from each significant effluent stream.</p> <p>7. Detail measures to contain unplanned emissions of effluents, spillages, firewater and localised floodwaters.</p>
3.3	<p>Assessment against PPC not provided</p> <p>The preliminary submission indicates that a PPC combustion activity permit will be required.</p> <p>1. Provide relevant application information to enable the Environment Agency to assess whether a permit could be issued for the generic site.</p> <p>See “Applying for a PPC permit” on our web site.</p>
3.4	<p>Assessment against COMAH not provided</p> <p>1. List all relevant COMAH materials with their maximum installation storage quantities and compare with COMAH qualifying thresholds.</p> <p>2. State whether COMAH will apply and, if so, how compliance with the COMAH Regulations will be achieved, eg. provide a draft Major Accident Prevention Policy (MAPP).</p> <p>Materials may include: Hydrogen, Hydrazine, Fuel Oil etc.</p>

¹ Environment Agency “Process and information document for generic assessment of candidate nuclear power plant designs”, Version1 issued 10/01/07, Table 1.

² Where no comments provided refer only to P&ID