GEH response to Annex A - Catalogue of Consultation Questions

Question Number	Consultation Question
1.	**Do respondents agree with the Government's view that it is sensible to issue generic guidance for the reuse of plutonium? We welcome comments on this proposed approach.**
GEH Response	It is sensible and appropriate to issue generic guidance in lieu of specific guidance providing that this generic guidance does truly cover applications from a range of reuse technologies. Solutions that may be offered by respondents may be aimed at meeting the same objectives and criteria, but through different reuse technologies, and these must be capable of being covered by the generic guidance. Specific guidance/requirements could stifle innovation and discourage a respondent from proposing a unique 'best solution.' GEH has put forward a reuse solution involving its PRISM reactor technology and would envisage that the generic guidance would be able to accommodate this. GEH is pleased to read that the Government recognises that technologies other than MOX are available and is specifically not limiting the guidance to applications which are for reuse as MOX. However, this needs to be made very clear in the published guidance. GEH would be very concerned about any approach in establishing guidance for the justification process which in effect discriminates against particular technologies. GEH would like to suggest additional criteria that also determine (a) how much of the plutonium can be reused, (b) how long it will take, (c) whether other nuclear materials that government has in storage can also be included in the future, and what future technical capacity is afforded with the technology path.
2.	**Is the proposed application and decision-making process clear, appropriate and proportionate? If not, how can they be improved?**
GEH Response	As stated above, GEH strongly agrees with DECC's approach of providing generic guidance. The application and decision-making process can be further improved to support the generic approach by either avoiding specifying technologies such as MOX or by specifying all technologies that may be considered. Specifying some, but not all, reuse technologies in guidance documents, including the forthcoming consultation response, may be viewed as inconsistent with the generic justification approach. Specific wording suggestions to avoid this problem

	are provided below.
3.	**Is the indicative list of information in Table 3 sufficient and appropriate to assist in the making of justification applications and justification decisions? Does the indicative list omit any relevant information, or include any unnecessary information?**
GEH Response	With recent awareness of commercial fast reactor potential for value-added plutonium reuse, such as GEH's PRISM technology, , that option should be better incorporated within Table 3 metrics, viz.,it should not be solely based on the MOX reuse option. Please see the attached document with suggested additions to make the information provided sufficient, appropriate and relevant for the Government's decision-making with respect to allowing for a potential fast reactor option.
Q4	**Are there any other ways in which the draft justification process can be improved? If so, how?**
GEH Response	GEH understands that the justification process, as written, envisages a time frame that may last for more than two years. To better inform this justification process, the Government should consider actively providing support for starting the licensing process with the Office of Nuclear Regulation. These initial interactions would be informative, and would likewise provide an early indication of a technology/team/approach ability to make progress after the justification process. Actions today could provide an indication of tomorrow's performance. In this way, advances in the schedule to disposition plutonium would not be delayed as much following selection of the preferred option.

About GE Hitachi

GE Hitachi Nuclear Energy is a world-leading provider of advanced reactors and nuclear services. Established in June 2007 after several decades' partnership, GEH is a global nuclear alliance created by GE and Hitachi to serve the global nuclear industry. The alliance offers customers around the world the technological leadership required to effectively enhance reactor performance, power output and safety.

GE built the first commercial nuclear reactor over 55 years ago and together with Hitachi has been continuously building them ever since. GEH's current portfolio of reactor technology consists of 3 main designs: the Advanced Boiling Water reactor (ABWR), the Economic Simplified Boiling Water reactor (ESBWR) and the Power Reactor Innovative Small Modular (PRISM). All three of these reactors can be built using modular processes to improve build efficiency.

The ABWR is the world's first and only Generation III reactor with operating experience, based on a proven design that has been successfully built to time and to budget. The ESBWR builds on the ABWR's proven advanced technology and introduces passive safety systems which preclude the possibility of a loss of coolant accident. PRISM utilises evolutionary sodium-cooled technology, based on decades of US technology development and more than 30 years' operating experience. It incorporates advanced passive safety systems and is a simplified reactor design allowing modular construction and more efficient build. The PRISM design is ideal for plutonium reuse, recycling of used nuclear fuel and generating low carbon electricity.

General Electric is a global infrastructure and finance company. GE is proud of its presence in the UK since the 1930s. We currently employ over 18,000 people across the UK and have invested over £14 billion in our UK-based businesses since 2000.

GEH COMMENTS and SUGGESTIONS
for modifications to the
MANAGEMENT OF THE UK'S PLUTONIUM STOCK, *A consultation on the proposed justification process for the reuse of plutonium*
[URN 12D/075 – 28th May 2012]

GEH has reviewed the Consultation and, per Annex - 1 Question 3, submits the following suggestions of wording changes for use in the consultation response to be more consistent with DECC's desire for generic guidance rather than limiting guidance to the consideration of applications for reuse of plutonium as MOX as expressed on page 12: (Suggested deletions are ~~struck through~~, suggested additions are **bolded**)

CHAPTER ONE
Background

Revise Item 3 on page 7 as follows: "The Government's response to its consultation on the long-term management of UK owned separated civil plutonium1 identified reuse of plutonium as ~~mixed oxide (MOX) fuel as~~ the preferred option for the long-term management of UK owned separated civil plutonium."
Reason: The expression of preferences for specific technologies is unnecessary and fundamentally inconsistent with the approach of providing generic guidance for justification.

Revise Item 4 on page 7 as follows: "While the Government has set out a preferred policy, there is not yet sufficient information to decide whether to proceed with procuring a new ~~MOX~~ plant. The Government is now undertaking the next phase of work, which will provide the information required to make such a decision. Only when the Government is confident that its preferred option could be implemented safely and securely, that it is affordable, deliverable, and offers value for money, will it be in a position to proceed with a new ~~MOX~~ plant."
Reason: The expression of preferences for specific technologies is unnecessary and fundamentally inconsistent with the approach of providing generic guidance for justification.

Revise Item 5 on page 7 as follows: "In addition, before procuring a ~~MOX~~ plant, the Government needs to be satisfied that the whole ~~MOX~~ path from fabrication through to disposal is found to be justified, in that it must be shown that the net-benefits associated with the practice outweigh the health detriments."

[1] A consultation response on the long-term management of UK-owned separated civil plutonium, http://www.decc.gov.uk/assets/decc/Consultations/plutonium-stocks/3694-govt-resp-mgmt-of-uk-plutonium-stocks.pdf

Reason: The expression of preferences for specific technologies is unnecessary and fundamentally inconsistent with the approach of providing generic guidance for justification.

Introduction

Add new **number 7 (and renumber subsequent items)** (pg. 8) as follows: **"Subsequent to the NDA 13th April declaration of intention, the potential for reuse of plutonium in a specific type of fast reactor was considered and incorporated as a result of the consultation process. The benefits to non-proliferation by reduction of nuclear materials, the direct generation of electricity, and reduced fuel production process waste (volume and toxicity) are recognized as potential benefits. The option for reuse in a fast reactor has been added for evaluation for a justification decision.**
Reason: This addition helps to explain the basis and need for a generic justification process.

The Justification Process – Proposed Next Steps

Item 27 **(renumber to conform to prior additions)** (pgs. 12/13)
Add new bullet:
- **Following an open process that allows options other than MOX to be objectively evaluated as a part of the justification process.**

Reason: Reinforces DECC's desire to support a generic process.

CHAPTER THREE
The Proposed Decision-making Process
How will the Government Consider Applications?

Item 31 **(renumber to conform to prior additions)** (pg. 14) Change to read: "… it contains sensitive **or proprietary** information, although it is the Government's intention to limit the need for this. **It is recognized that failure to protect high value private sector information may impact the availability of detailed information especially for technological innovations with the most potential to provide value.**
Reason: Recognize and mitigate a potential applicant's concern that proprietary information remains secure.

Table 2 – List of Indicative Information to be Provided
Economic, Societal or other benefits and detriments

Revise as follows:

"Radioactive waste**, process waste** and decommissioning" ['Information Requirement block'] (pg. 17)
Change second bullet to read "The nature and volume of radioactive waste**, hazardous process waste,** and spent fuel that could be expected to be produced at each stage."
Reason: Ensure that hazardous liquid wastes with concerns other than radiological (e.g., acidic) are captured.

"Environmental" ['Information Requirement' block] (pg. 18)
Change third bullet to read "Non-radiological effects on people and the environment (**process waste**, water, air, chemicals, light, thermal, noise, landscape animal health, flora, fauna, etc.) **t**hroughout construction, operation and decommissioning."
Reason: Ensure that hazardous liquid wastes with concerns other than radiological (e.g., acidic) are captured.