

# Nuclear Information Service

Ibex House 85 Southampton Street  
Reading RG1 2QU United Kingdom

tel/fax: +44 (0)118 327 7489 e-mail: [office@nuclearinfo.org](mailto:office@nuclearinfo.org) <http://nuclearinfo.org>

## Long Term Plutonium Management: Key Factors Discussion Paper Comments from Nuclear Information Service

1. Nuclear Information Service (NIS) is a not-for-profit, independent information service which works to promote public awareness and debate on nuclear weapons and related safety and environmental issues (see <http://nuclearinfo.org> for more information). Our research work is supported by funding from the Joseph Rowntree Charitable Trust.
2. NIS welcomes the government's decision to develop a medium and long term strategy for plutonium management, and welcomes the government's commitment to consult on development of this strategy.

### Options for plutonium management

3. DECC's discussion paper identifies three credible options for the management of the UK's plutonium stockpile:
  - **Reuse.** NIS believes that the experience of the Sellafield MOX Plant shows that this would be a high risk option. A market for MOX fuel is not guaranteed and the economics of production are highly questionable. Perhaps more pertinently, this option avoids the issue that, eventually, at some time in the future either plutonium stocks themselves or the MOX fuel residues will have to be managed as waste. Conversion into MOX fuel does not solve this problem: it just defers addressing it.
  - **Treat as waste.** This option would be NIS's preferred option. Unwanted plutonium should be blended down or otherwise immobilised and managed as waste. The material should remain under international safeguards until it can be shown that it would be impossible to reuse it. We agree with the discussion paper's assessment of the difficulties in going down this route, but feel that the nettle must be grasped. Fundamentally, we do not consider that plutonium can be considered as an asset given the risks in retaining stocks and the availability of alternative, renewable options for achieving energy security. Plutonium should therefore be treated as a waste product. As yet a disposal route for this waste has not yet been identified: it should not necessarily be assumed that the most appropriate route would be burial in a geological disposal facility.

- **Indefinite storage.** NIS accepts that there will be a need to store plutonium stocks securely in the interim period before it can be treated as waste, and agrees with the discussion paper's assessment of the difficulties in doing this. However, we feel that indefinite storage is not suitable as a long term option. As with re-use, the storage option just postpones making a decision on the ultimate fate of plutonium stocks. Plutonium stocks should be placed beyond any possible future use, which could potentially include use as a fissile material in the production of nuclear weapons, but indefinite storage does not allow this condition to be met.
4. As well as managing existing stocks, it will be important not to produce further quantities of usable plutonium. DECC's discussion paper recognises that the UK separated plutonium stocks represent a 'security and proliferation risk' (page 3 para 1.1). It is therefore imperative that not only is the problem created by existing plutonium stocks addressed, but that further production of separated plutonium is ceased as quickly as possible.

### **DECC involvement with stakeholders**

5. NIS feels strongly that the government should not identify any lead or preferred option for future plutonium management in any forthcoming consultation. Such a step would give a strong impression that the government had already made up its mind on the issue, and that there would be little value to stakeholders in engaging in the consultation exercise. We would prefer to see a consultation process that leaves options open as far as possible.

### **Key factors in decision making**

6. NIS believes that, from the list presented in the discussion paper, the following key factors are the most important and should have the highest weighting in any future ranking process:
- Safety and hazard.
  - Security and proliferation resistance.
  - Environmental impact, and social impact on local communities at any sites affected by the management option selected.
  - Feasibility and technical viability.
7. In addition to the factors listed in the discussion paper, we think it is important to address the following factors when assessing options:
- **Intergenerational equity:** Any management option selected will have potential costs to future generations, who would not benefit from our generation's use of plutonium in the way that we might. As far as possible the legacy costs of managing plutonium should be paid up-front, rather than passed on to future generations.
  - **International safeguarding requirements:** It must be possible to demonstrate that the UK remains within its international obligations to have stocks of plutonium available for inspection to demonstrate that it is complying with safeguarding requirements until the material has been placed beyond use in such a way that satisfies international atomic regulators.

- **Military use of plutonium:** Depending on the progress of international disarmament negotiations, it will in due course be necessary to include defence stocks of plutonium within the scope of the UK's plutonium management strategy.

NIS is aware that defence plutonium stockpiles were reviewed following the 1998 Strategic Defence Review (SDR). Since then the government has announced that it intends to maintain a minimum deterrent capability of 160 nuclear warheads – less than that proposed at the time of the SDR. NIS believes that a further review of defence plutonium stocks should take place in order to assess the quantity of plutonium required to guarantee that a warhead stockpile of this size can be maintained. Any surplus in the defence stockpile above this minimum level should be transferred into the civilian stockpile and placed under international safeguards. The forthcoming plutonium strategy should not ignore or exclude the defence plutonium stockpile and should consider options for, in due course, bringing material held in the defence stockpile under international safeguards and eventual long term management alongside civilian stocks.

8. Finally, we note that many of the issues raised in the discussion paper have already been considered by the Committee for Radioactive Waste Management (CoRWM), and we recommend that the team responsible for development of a long term plutonium strategy should learn from and build on the work of CoRWM.
9. We should be grateful if DECC would keep us informed during future steps in development of the plutonium management strategy.

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