



# **Review of Radioactive Waste Management Policy**

**Final Conclusions**

Presented to Parliament by  
the Secretary of State for the Environment,  
the Secretary of State for Scotland and  
the Secretary of State for Wales  
by Command of Her Majesty  
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similar requirement to consult local authorities when disposal is proposed at private landfills, although in practice they are consulted, as are the landfill operators. The Government will issue formal guidance to the Environment Agencies and ARCI on the need to consult local authorities about authorisations for controlled burial.

## Decommissioning

120. The consultation document recognised the importance of decommissioning in relation to future waste management policy, noting that increasing amounts of waste will arise in future from the decommissioning of nuclear power stations and other nuclear facilities. Responses to the consultation document reflected a high level of interest in the subject. Two aspects are of particular importance—decommissioning strategies and financial provision.

### Decommissioning strategies

121. The UK's current strategy for decommissioning nuclear power stations is that it should be done in three stages—defuelling immediately on shutdown; dismantling buildings external to the reactor shield 5-10 years later; and demolishing the reactor itself 100 years after shutdown. As an alternative to this, NE and SNL have proposed a "safestore" strategy for their gas-cooled reactors (Magnox and AGRs). The first stage would be unchanged. The next stage would be to remove most inactive buildings, but prepare the active buildings for an extended period of care and maintenance. Around 30 years after shut-down, further work would be undertaken to secure the buildings by replacing exterior cladding with high-integrity materials and infilling unnecessary openings, such as doors and windows, to leave a structure which would require essentially no maintenance over a further period of around 100 years (safestore). Routine surveillance would be undertaken during that period, and at the end of it the buildings and their contents, including the reactor core, would be completely demolished. A variant which might be appropriate would be to proceed with the safestore stage without any delay.

122. Arguments in favour of the safestore proposal are that it would allow more time for radioactive decay and for further advances in technology, and that it would be more cost-effective. Some of those responding to the consultation document also considered that a stronger commitment to safestore would strengthen the UK's position in advising on and assisting with decommissioning internationally.

123. Other respondents, however, argued against safestore and in favour of decommissioning as early as possible on the grounds that this approach would be more in line with the concept of sustainable development. To defer action by implementing a strategy of safestore would leave the physical work of decommissioning to future generations. Making financial provision over a period of 100-135 years would also prevent future generations from taking earlier action if they wished, unless they were prepared to bear additional costs. Deferral ran the risk that plant would deteriorate, leading to leakage and hence more widespread radioactivity. Early decommissioning would be preferable and would enable use to be made of the knowledge and experience of those who had worked on particular sites.

124. The Government believes that, in general, the process of decommissioning nuclear plants should be undertaken as soon as it is reasonably practicable to do so, taking account of all relevant factors. In future, it will ask all nuclear operators to draw up strategies for decommissioning their redundant plant. These will need to include justification of the timetables proposed and demonstration of the adequacy of the financial provision being made to implement the strategies.

125. As with all other operations on nuclear sites, decommissioning will be undertaken in accordance with conditions attached to the nuclear site licence and subject to HSE/NII controls, in order to ensure the safety of the site, workers and the public. Disposal of wastes arising during decommissioning will be subject to regulation under RSA 93. In considering proposals for decommissioning nuclear plant put forward by the operators, HSE/NII will assess them to ensure that the proposals assure the safety of the site at all times, and that the hazards presented by the plant (or site in the case of nuclear power stations) are reduced in a systematic and progressive way. The expected outcome of such consideration will be a plan to remove and/or immobilise the most active and potentially mobile radioactivity on a relatively short timescale, with further actions following at appropriate intervals consistent with the hazards they seek to address. The rate at which the work proceeds will be determined by the potential hazards posed to the public, workers and the environment (recognising the benefits obtainable from radioactive decay), the availability of disposal routes for the wastes and—subject to ensuring public safety—the financial implications of proceeding on different timescales.

126. Given that regulatory approval for decommissioning is required on a case-by-case basis, the Government reaffirms the preliminary conclusions of the review that it would be unwise at present for the operators of nuclear power stations to take steps which would foreclose technically or economically the option of completing Stages II and III on an earlier timescale should that be required, and that they should recognise, when provisioning, the potential uncertainties regarding the timing of Stage II and Stage III decommissioning. Nevertheless, the Government also confirms its preliminary conclusion that there are a number of potentially feasible and acceptable decommissioning strategies for nuclear power stations available to the operator, including the safestore strategy proposed by NE and SNL. To ensure that operators' decommissioning strategies remain soundly based as circumstances change, they will be reviewed quinquennially by HSE, who will consult the Environment Agencies.

127. The Government recognises that, in addition to nuclear power stations, a variety of other nuclear facilities are in the process of being decommissioned, or are to be decommissioned in the future. As with power stations, decisions on decommissioning these facilities should be taken on a case-by-case basis and the same general principles apply in respect of timing. Proposals for dealing with such facilities will need to be included in the operators' decommissioning strategies.

128. For decommissioned nuclear-powered submarines, MOD's current policy is that they should be stored afloat in safe and secure facilities at the naval bases at Devonport and Rosyth. HMS Dreadnought has been stored at Rosyth since 1982; six others have been similarly stored, the first having been taken out of service in 1991. Two more nuclear-powered submarines have been withdrawn from service and will undergo their decommissioning process in due course. MOD has based its long-term plans for the disposal of radioactive

wastes arising from the reactor compartments on the availability of the Nirex repository in about 2010. However, this policy is kept under review.

### **Financial provision**

129. The consultation document recognised the importance of ensuring that appropriate financial arrangements are put in place to cover the costs of decommissioning civil nuclear plant, and noted that the nuclear companies already make full provision for this in their accounts. At the same time, the document noted that considerable uncertainties exist about the likely costs of decommissioning and about whether current provisioning arrangements would be sufficient to meet future requirements. In conclusion, however, the Government said that it should continue to be for the industry to make its own provisioning arrangements.

130. In responses to the document, the nuclear industry welcomed this approach, and reiterated its commitment to structured provisioning. Other respondents, however, argued in favour of the introduction of external, segregated funds, and of ensuring that these were built up during the operation of a power station to allow decommissioning to begin as soon as possible. These funds should be managed by independent trustees and should be invested in safe securities such as Government bonds rather than being reinvested in the nuclear industry. Some argued that a larger share of the estimated costs should be set aside in the early years of provisioning to allow for earlier than expected decommissioning.

131. The Government has given careful consideration to the question of provisioning, in the light both of the responses to the review and of the conclusions of the nuclear review regarding privatisation. The Government believes that it is right that, for those parts of the industry which are privatised, segregated funds for decommissioning should be established. In addition, the Government will examine what improvements can be made in the way in which the unprivatised sections of the industry report on their progress towards decommissioning and on their provisioning policies. The periodic reviews by the regulators (see paragraph 126) should provide the right focus for improved reporting of this kind.

### **Contaminated Land**

132. Last year, the DOE and Welsh Office carried out a review of contaminated land and liabilities, the results of which were published in a policy paper, *Framework for Contaminated Land*, in November 1994. (A similar but separate review was conducted by the Scottish Office.) In order to make the powers to deal with contaminated land clearer and more consistent, the Environment Bill contains a new contaminated land regime, which provides for the definition, inspection and remediation of such land. Regulation will primarily be the responsibility of local authorities, but the Environment Agencies will have responsibility for designated categories of special sites, and will provide advice in respect of other sites.

133. Although the provisions were not developed to deal specifically with land contaminated by radioactivity, such as the sites of old luminising works, they provide a suitable overall framework for this purpose. However, there are a number of issues which need to be addressed, such as the appropriate enforcing authorities and the levels at which radioactivity—which is also a



## ***Decommissioning of Nuclear Power Reactors - Final Rule***

- *Proposed rule issued July 20, 1995 (60 FR 37374)*
- *Incorporated SRMS of January 14 and June 30, 1993*
- *Incorporated draft policy statement on use of decommissioning trust funds before decommissioning plan approval (59 FR 5216; FEB. 3 1994)*



## ***Proposed Rule Requirements***

- *Eliminated need for decommissioning plan approval*
- *Before decommissioning activities could begin, licensees would submit:*
  - (1) Certifications of permanent cessation of operations and*
  - (2) Permanent removal of fuel from reactor vessel*
- *Prohibited operation of reactor and extended certain Part 50 requirements to decommissioning activities*





***(Proposed rule continued)***

- *Imposed 90 day waiting period before major decommissioning (defined in rule) could occur - included public information meeting in vicinity of site*
- *Allowed use of § 50.59 to dismantle facility with addition of 4 criteria*
- *Written notification required for any activities inconsistent with PSDAR or a significant schedule change from PSDAR*
- *FSAR updating required*



*(Proposed rule continued)*

*License termination process -*

- *Submittal of license termination plan and supplement to ER*
- *Public information meeting held*
- *License amendment process including opportunity for hearing under subpart L (or*

*G if fuel onsite)*





***(Proposed rule continued)***

***Financial assurance -***

- *Continued to require preliminary cost estimate at 5 years prior to license expiration*
- *Allowed staged use of decommissioning funds (based on draft policy statement)*
- *Permitted use of 3% of generic amount prior to cessation of operations, 20% - 90 days after PSDAR submittal, and remainder after site-specific cost estimate received*



*(Proposed rule continued)*

*Grandfathering-*

- *Permitted licensee with approved plan option of continuing as in current rule or switching to new process*

*License extension -*

- *Clarified that license does not terminate until Commission decision*



## *Public comments*

- *34 comment letters received*
- *Comments addressed all aspects of proposed rule plus court's decision on Yankee Rowe. No comments on non-power reactor amendments*
- *Commenters (24) generally in favor of the proposed rule consisted of power reactor licensees, reactor industry groups and consultants, government agencies, and an Agreement State*



***(Comments continued)***

- *Commenters (10) generally opposed consisted of citizen' groups, individuals, and an Agreement State*
- *Many commenters in favor of the rule wanted less restrictions than offered by the proposed rule*
- *Many commenters opposed preferred the status quo - several favored greater restrictions than the current rule requires*



### ***Final Rule Schedule***

- *Staff analysis of comments completed, draft final rule undergoing staff review*
- *Final Rule due to Commission in early April, 1996*

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