

Nuclear Industry Perspectives on Waste Confidence

Briefing on Waste Confidence Rulemaking
March 21, 2014

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Background

- **Waste Confidence Decision:**
 - A generic determination that used fuel can be stored at nuclear power plant sites or at offsite consolidated storage facilities— safely and without significant environmental impact – between the end of the license term and the time it is shipped for disposal.
- **D.C. Circuit Decision Required Further *Environmental* Review Under NEPA:**
 - Environmental impacts of a hypothetical federal failure to establish a high level waste repository (as required by statute)
 - Risks of spent fuel pool leaks
 - Risks of spent fuel pool fires, considering probability and consequences
- **NRC's Draft Environmental Impact Statement (DGEIS) comprehensively addresses the remanded issues *and more***

The Major Federal Action

- **Question:** Did the NRC appropriately define the proposed action as a rulemaking rather than a licensing action?
- **Response:** The D.C. Circuit stated that the "*rulemaking* at issue here constitutes a major federal action"
 - NRC evaluated appropriate alternatives to a Waste Confidence *rulemaking* – (1) no action/site specific consideration; (2) GEIS-only; and (3) policy statement.
 - NRC considers the alternatives to *licensing* in connection with individual licensing decisions – including no action and project alternatives.
 - Regardless of whether Waste Confidence is a rule or a licensing action, NRC took the required "hard look" at the issues involved – impacts of continued storage and a lack of a repository.

Assessment of the No Repository Scenario

- **Question:** Did the NRC adequately examine the impacts of no repository?
- **Response:** DGEIS examines the reasonably foreseeable consequences of a (highly unlikely) failure to provide a repository, as required by the D.C. Circuit.
 - DGEIS provides ample basis to conclude that a repository will be available within the 60-year timeframe: NEI considers this the most likely scenario.
 - Consistent with statutory obligations, technical feasibility, and international experience.
 - DGEIS considers the impacts for 60-year and 160-year timeframes – based on reasonable assumptions regarding the control of the spent fuel.
 - It is not reasonable to assume a gross and permanent failure to develop a repository – the D.C. Circuit did not reverse longstanding NEPA law: NEPA does not require analysis of the consequences "remote and speculative scenarios."
 - But the NRC still considered the indefinite storage scenario.
 - By any reasonable measure, the DGEIS meets the NEPA "hard look" standard.

Assumptions of Institutional Controls

- **Question:** Did the NRC "arbitrarily" rely on continued institutional controls?
- **Response:** NEPA does not require assessment of "remote and speculative" "worst case" scenarios; NRC's assumptions regarding institutional controls are reasonable.
 - The DGEIS reasonably assumes institutional controls during the short-term (60-year) and long-term (160 years) scenarios; fuel can be managed onsite by licensees who will remain subject to NRC jurisdiction.
 - DGEIS (at 1-14) references federal precedent under NEPA for institutional controls, even in perpetuity.
 - The *indefinite* "no repository" scenario remains highly speculative and highly unlikely; the DGEIS appropriately does not layer an additional conservatism of a loss of institutional controls – this would exceed what is required by NEPA.
 - In connection with the proposed repository, DOE did consider a loss of institutional controls after 100 years – this is an unnecessary "worst case" analysis
 - But the DOE analysis can be referenced in the NRC's GEIS.

Analysis of Spent Fuel Pool Leaks

- **Question:** Did the NRC sufficiently analyze the significance of past spent fuel pool leaks and, further, inappropriately rely on the regulatory structure to prevent leaks?
- **Response:** DGEIS includes a conservative, bounding assessment of the risk of spent fuel pool leaks that fully meets NEPA and the D.C. Circuit remand.
 - The regulatory regime in the future is a fact; the Court of Appeals did not mandate that NRC ignore the regulatory regime.
 - Industry will maintain the ability to prevent, detect and mitigate leaks – as required by the NRC.
 - Designs are robust, detection capability exists, and mitigation can and will be taken.
 - DGEIS (Appendix E) compiles an ample record *including but not limited to past operating experience* to establish the low likelihood of leaks and assesses the potential consequences of leaks.
 - Past experience has in fact been considered in a reasonable, technically-informed way.
 - There is ample support for the conclusions in the DGEIS that impacts of future leaks would be small.

Generic Analysis of Fires

- **Question:** Must the NRC conduct site-specific impact analyses of spent fuel pool fires, including terrorist attacks?
- **Response:** NRC has thoroughly evaluated the *risks* of spent fuel pool fires, consistent with the D.C. Circuit remand and the standard in *Carolina Environmental Study Group v. United States*.
 - Risk analysis includes probability and consequences: Environmental impacts are small based on probability weighted consequences.
 - DGEIS (Appendix F) references a substantial body of technical research on the remote probability and potentially severe consequences of a spent fuel fire.
 - Consequence assessments include health effects and economic consequences.
 - NUREG-1738 shows that the likelihood of spent fuel pool fires diminishes to zero as fuel cools.
 - This issue therefore applies only at the very early stages of the short-term timeframe.
 - DGEIS is consistent with the results of the NRC's recent Consequences Study.
 - NRC has accurately characterized the very low probability of a successful terrorist attack; NEI's comments also cite extensive safety analyses and testing that establish the robust nature of storage systems that would be used for long term storage.

Incorporation of Impacts Into Site-Specific Analyses

- **Question:** Must the GEIS incorporate impacts into site-specific cost-benefit analyses?
- **Response:** There is no evidence that either the costs or environmental impacts of spent fuel storage will "tip the balance" of a NEPA cost-benefit analysis for an individual project.
 - Environmental impacts of continued spent fuel storage in the short and longer term are small.
 - Specific projects costs-benefits are addressed in individual licensing reviews (without re-litigation of the issues addressed in the Waste Confidence rule).

Reasonable Assurance Finding

- **Question:** Does the proposed rule violate the Atomic Energy Act (AEA) by eliminating essential reasonable assurance findings?
- **Response:** The NRC has an ample record to conclude that there is *reasonable assurance* that a repository can be available when needed and fuel can be stored safely until then.
 - 2nd Circuit has rejected an argument that AEA requires a definitive finding on disposal in *NRDC v. NRC*, 582 F. 2d 166,170 (2d Cir. 1978).
 - The NRC's prior Waste Confidence findings made *reasonable assurance* findings; the DC Circuit did not invalidate any aspect of the prior decisions under the AEA.
 - The DGEIS further supports reasonable assurance findings.
 - The rule language should reflect "reasonable assurance" findings which are supported by the record and consistent with the NRC's traditional findings and case law.

Proposed Revision to Proposed 51.23 (a) and (b)

- (a) The Commission has developed a generic environmental impact statement (NUREG-2157) analyzing the environmental impacts of storage of spent nuclear fuel beyond the licensed life for operation of a reactor.
- (b) The Commission has reasonable assurance that: (i) sufficient mined geologic repository capacity to dispose of spent nuclear fuel generated in any reactor can be available when necessary, and (ii) spent nuclear fuel can be safely stored until that time.

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