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Sent: Monday, January 06, 2014 2:11 PM
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Subject: PR-51 Waste Confidence
Attachments: 1266 curtis.pdf

DOCKETED BY USNRC—OFFICE OF THE SECRETARY
SECY-067

PR#: PR-51
FRN#: 78FR56775
NRC DOCKET#: NRC-2012-0246
SECY DOCKET DATE: 12/20/13
TITLE: Waste Confidence—Continued Storage of Spent Nuclear Fuel
COMMENT#: 00847

Hearing Identifier: Secy_RuleMaking_comments_Public
Email Number: 883

Mail Envelope Properties (377CB97DD54F0F4FAAC7E9FD88BCA6D0014435D730C1)

Subject: PR-51 Waste Confidence
Sent Date: 1/6/2014 2:10:42 PM
Received Date: 1/6/2014 2:10:43 PM
From: RulemakingComments Resource

Created By: RulemakingComments.Resource@nrc.gov

Recipients:
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Tracking Status: None
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Files	**Size**	**Date & Time**
MESSAGE	254	1/6/2014 2:10:43 PM
1266 curtis.pdf	219800	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

PUBLIC SUBMISSION

As of: January 02, 2014
Received: December 20, 2013
Status: Pending_Post
Tracking No. 1jx-89en-66to
Comments Due: December 20, 2013
Submission Type: Web

Docket: NRC-2012-0246
Consideration of Environmental Impacts on Temporary Storage of Spent Fuel After Cessation of Reactor Operation

Comment On: NRC-2012-0246-0456
Waste Confidence - Continued Storage of Spent Nuclear Fuel; Extension of Comment Period

Document: NRC-2012-0246-DRAFT-1266
Comment on FR Doc # 2013-26726

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General Comment

See attached file(s)

Attachments

Curtis Brinton 2013 Waste Confidence Comment

Select Comments on

NRC Proposed Rule: Waste Confidence - Continued Storage of Spent Nuclear Fuel

and

Draft Technical Document: Waste Confidence Generic Environmental Impact Statement NUREG-2157

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Introduction

It was recognized early in the development of civilian nuclear energy that the wastes generated from nuclear power plants and laboratories would require careful storage and disposal. The Nuclear Waste Policy Act of 1982 defined the framework under which a large federal repository should be developed to permanently store high level waste, and efforts continue to complete this work today. Recent court rulings [1] and Congressional inquiries [2] highlight the importance of finally establishing technically and politically feasible long-term plans for nuclear waste management. Updates to the Waste Confidence Rule play an important role in these long-term plans.

We support the proposed rule update and implementation of the associated Generic Environmental Impact Statement (GEIS). We believe it is essential to proceed on schedule with development and implementation of the updated Waste Confidence Rule system, so that applications for licenses for new nuclear power plants may proceed.

NRC proposed plans call for the movement of spent nuclear fuel to dry cask storage systems (DCSS) if storage is necessary for more than 60 years after the end of operating licenses. The long term safety and security of DCSS is therefore essential to the proposed rule system update. The response of new or mildly aged dry casks to a wide range of external events is very well understood [3, 4], and the best available technical analysis and experimental evidence indicate that continued storage of spent nuclear fuel can be made acceptably safe by use of dry cask storage systems and appropriate schedules of inspection, repair, and replacement (SIRR) [5]. **The proposed NRC updates accurately reflect this technical consensus that dry cask storage systems can be used to safely store spent nuclear fuel.**

Failure to Secure Permanent Storage

The nuclear engineering and geological engineering technical communities are ready to build a repository. Experts surveyed on geologic repositories for spent nuclear fuel demonstrate a consensus that the construction and safe operation of such a repository is completely technically feasible [6, 7]. Many design lessons were learned during the research and development effort at Yucca Mountain, but all issues raised

were resolved before the project was arbitrarily cancelled. The failure of the United States government to provide a permanent storage facility for spent nuclear fuel has been on overwhelmingly political failure, not a technical one.

Considering the political polarization connected with the disposition of spent nuclear fuel, it is essential to employ “Planning-in-Depth”. The goal of Planning-in-Depth is to guarantee the safety and security of the United States inventory of spent nuclear fuel regardless of any possible political developments, or the lack of political developments. Both the former and updated versions of the Waste Confidence rule successfully employ the principle of Planning-in-Depth.

Necessary Additional Research

Many uncertainties in the analysis of dry cask aging and lifetimes remain poorly quantified. The uncertainty on the overall safe lifetime of DCSS in different environments, or with different levels of stored fuel burnup, requires additional research to more effectively quantify. This research could make substantial strides in the short term, given currently available experimental results, technical analysis, and performance data. The results could be used to establish appropriate margins for schedules of inspection, repair, and replacement with greater confidence. Ongoing research is necessary to analyze dry cask system performance data over time and reduce the uncertainties described above. The Nuclear Waste Technical Review Board has already called for similar research in their recent technical basis evaluation [3].

Conclusions

We support the proposed rule update and implementation of the associated Generic Environmental Impact Statement. The proposed NRC updates accurately reflect the current technical consensus. Deep geologic disposal is technically feasible, but politically difficult, and regulatory planning must account for the overwhelming uncertainty over future political developments. And finally, ongoing research is needed to quantify and reduce the uncertainties associated with the lifetimes of dry cask storage systems.

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