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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-1115

Comment on FR Doc # 2013-26726

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Government Agency Type: State

Government Agency: California Energy Commission

General Comment

See attached file.

Attachments

2013-12-19 California Energy Commission Comments.NRC Waste Confidence GEIS

**CALIFORNIA ENERGY COMMISSION**

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December 18, 2013

Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
Attn: Rulemakings and Adjudications Staff

RE: U.S. Nuclear Regulatory Commission (NRC) Proposed Waste Confidence Decision and Rule for Continued Storage of Spent Nuclear Fuel – Draft Generic Environmental Impact Statement (Docket ID NRC-2012-0246)

Dear U.S. NRC Secretary:

California Energy Commission (Energy Commission) staff has reviewed the draft Waste Confidence Generic Environmental Impact Statement (draft GEIS) for the proposed update of the Waste Confidence Decision and Rule (Action), which has been prepared by the NRC to satisfy its National Environmental Policy Act (NEPA) obligations with respect to post-licensed-life storage of spent nuclear fuel (spent fuel) and to consider the environmental impacts of temporary storage of spent fuel after cessation of reactor operation.

The Energy Commission has prepared these comments as a state agency affected by the proposed Action. Until the United States, through its authorized agency, has approved a means for permanent and terminal disposition of high-level nuclear waste,¹ spent fuel will continue to be stored in California for many generations to come, if not indefinitely. Spent fuel is both generated and stored at Diablo Canyon Power Plant, and stored at San Onofre Nuclear Generating Station, Humboldt Bay Power Plant and Rancho Seco Nuclear Generating Station.

The stated intent of the draft GEIS is to improve the efficiency of the NRC's licensing process by:

- 1) providing an evaluation of the environmental impacts that may occur as a result of continuing to store spent fuel at at-reactor and away-from-reactor sites until a repository is available,
- 2) identifying the types and assessing the magnitude of environmental impacts where generic findings can be established, and

¹ In 1976, the California Legislature approved an amendment to the Warren-Alquist State Energy Resources and Development Act, Cal. Pub. Res. Code Section 25524.2, which conditions the certification of new nuclear power plants upon existence of a federally approved waste disposal technology for high-level nuclear waste.

- 3) providing the regulatory basis for the NRC's proposed amendments to regulations in Title 10 of the *Code of Federal Regulations* Part 51, "Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions."

We submit the following comments on the draft GEIS for your consideration:

Purpose and Need

The purpose and need of the draft GEIS is too narrowly focused on improving the efficiency of the NRC's licensing process. This is to the detriment of encouraging public involvement and effectively conveying environmental information to the public and decision makers about potential effects of continued storage of spent fuel. As such, the document fails to rigorously and objectively evaluate the no-action alternative, and other reasonable alternatives, and it undermines NEPA's purpose of promoting informed decision making and citizen involvement.

The draft GEIS recommends the proposed Action as the preferred alternative and rules out as inefficient² other alternatives that would enable parties in licensing proceedings to raise contentions challenging the conclusions in the draft GEIS. As a binding rule, the proposed Action places an unfair burden on the public to show special circumstances through the waiver process³ that the generic environmental determination doesn't adequately address impacts at a specific site. Important new information that could affect future NRC decisions may not be considered because of an inability of affected parties to meet this test.

As a result, the two major purposes of the NEPA process, creating the opportunity for better informed decisions and promoting citizen involvement, are thwarted by the preferred alternative. Council on Environmental Quality regulations⁴ state that EISs should highlight reasonable alternatives that would minimize adverse impacts and should be used to inform decisions – not to justify already-made decisions. Here, it appears that the presentation of alternatives is made solely to justify the preferred alternative.

The purpose and need of the draft GEIS should be expanded to give equal importance to facilitation of public involvement in decisions and to provide meaningful analysis and consideration of alternatives that do not include a binding rule.

² Based on a lesser level of efficiency than the NRC would gain through a binding generic analysis measured by Council on Environmental Quality guidance for achieving efficiency and timeliness under NEPA.

³ 10 CFR 2.335(b)

⁴ 40 CFR Sections 1500-1508

Environmental Consequences and Mitigating Actions

NEPA requires agencies to follow a particular process in making decisions and to disclose the information and data that was used to support those decisions. Tiering⁵ is appropriate when a sequence of EISs progresses from a general NEPA analysis to a site-specific NEPA analysis. Accordingly, the draft GEIS states that while some site-specific information is used in developing the generic impact determinations, the NRC does not intend for this draft GEIS to replace the NEPA analysis associated with any individual site licensing action.

Notwithstanding, as a programmatic environmental document, the draft GEIS would be more effective if it included a meaningful discussion of the means to mitigate adverse environmental impacts⁶ to ensure that the environmental effects of the proposed Action are fairly assessed, and if it provided a summary of mitigating actions relied upon from other NEPA documents to reach conclusions about the significance of environmental effects resulting from the proposed Action. NRC regulations⁷ describe what should be included in an environmental impact statement, including a discussion of environmental consequences and mitigating actions, and specifically, the means to mitigate adverse environmental impacts. Yet mitigating actions are not provided in the draft GEIS.

For example, Tables 8-1 through 8-3 summarize levels of environmental impacts, including unavoidable adverse impacts, for each resource area but the draft GEIS does not include any corresponding discussion of the means to reduce or avoid these impacts. The draft GEIS provides a figure illustrating a process for tiering off NEPA analyses for other NRC activities (Figure 1-2) and list of NEPA documents used in the draft GEIS preparation, but does not reference any mitigating actions from those documents. The draft GEIS states that it generically addresses the likely impacts of continued storage and that other aspects of spent fuel storage will either be addressed in site-specific analyses or are addressed generically elsewhere. However, it is unclear how the environmental consequences and mitigating actions from the draft GEIS are supported by the numerous other generic EISs that the draft GEIS tiers off of.

Under NEPA, environmental documents are provided to inform the public and other agencies who may be interested or affected by the proposed Action.⁸ The lead agency must determine the proposed Action's full extent and may not divide it into smaller

⁵ Tiering refers to the coverage of general matters in broader EISs with subsequent narrower environmental documents incorporating by reference the general discussions and concentrating solely on the issues specific to the subsequent project specific action. 40 C.F.R. Sections 1500 through 1508.28

⁶ 40 C.F.R. Section 1502.16 (h).

⁷ 10 C.F.R. Part 51 entitled "Environmental Protection and Regulations for Domestic Licensing and Related Regulatory Functions, Appendix A to Subpart A, Item 7.

⁸ 40 C.F.R. Section 1506.6(b).

segments to avoid presentation of its full environmental effects. The draft GEIS fails to disclose information about or adequately identify mitigating actions for the likely impacts of continued spent fuel storage by relying on unspecified mitigating actions addressed generically elsewhere or by deferring mitigating actions to assumed future activities which “may” require monitoring programs or mitigation measures (see Attachment A for examples).

In order to be an effective programmatic environmental document, the draft GEIS should be revised to:

- 1) fully disclose specific, tangible mitigating actions that reduce physical environmental effects to support conclusions about the significance of environmental effects resulting from the proposed Action,
- 2) clearly identify and summarize mitigating actions that are being relied upon through incorporation by reference from environmental documents, and,
- 3) specify and summarize those activities which would require further environmental evaluation in plant-specific supplemental EISs.

Analysis Assumptions

The assumptions on which the draft GEIS relies are problematic. Specifically, the draft GEIS assumes that “that all spent fuel is removed from the spent fuel pool and placed in dry cask storage in an ISFSI no later than 60 years after the end of the reactor’s licensed life for operation [i.e., within 120-140 years].” (1-14.) However, there are currently no rules requiring that spent fuel ever be stored in dry casks, much less within a certain time. The assumption should, at the very least, note that NRC regulations do not specify a maximum time for storing spent fuel in pool or cask. Additionally, the draft GEIS “assumes that the licensee uses a DTS [dry transfer system] during long-term and indefinite storage timeframes to move the spent fuel to a new dry cask every 100 years.” (1-14.) However, as the draft GEIS notes at 2-19, “there are no dry transfer systems (DTSs) at U.S. nuclear power plant sites today.” In the same way that the Court held that it is unreasonable to assume the existence of a permanent repository for purpose of NEPA analysis on the waste confidence rule,⁹ it is unreasonable to assume DTS exists for the purpose of analyzing impacts environmental impacts of long term storage. If nothing else, there should be analysis of impacts that does not assume the existence of DTS.

⁹ New York v. NRC, 681 F.3d 471 (D.C. Cir. 2012)

Environmental Justice

The Environmental Justice (EJ) analysis highlights the limits of a generic EIS, and provides insufficient basis to support the findings that there would be “no disproportionately high and adverse impacts” on EJ communities (see, e.g., 8-2). The draft GEIS admits that “Demographic characteristics *vary* in the region around each nuclear power plant site and may be affected by the remoteness of the nuclear plant to regional population centers (NRC 2013a). Nuclear power plants located in both rural and semi-urban areas can have *varying* concentrations of minority and low-income communities. (3-10 [emphasis added].) It is therefore unreasonable for the NRC to claim that a survey of effects on a “generic” minority and low-income community provides the level of analysis that satisfies NEPA. The NRC acknowledges this in its discussion of effects on EJ communities. By way of example, in the section regarding “at-reactor continued storage” it states: “the site-specific NEPA analysis that is required prior to an NRC licensing action will include a discussion of the impacts on minority and low income populations, and will appropriately focus on the NRC decision directly related to specific licensing actions.” (4-11). Similarly, in the EJ analysis for long-term storage, which necessarily includes dry transfer systems (that don’t yet exist), the draft GEIS states, “DTS license reviews would not rely on the analysis in this draft GEIS, because the site-specific NEPA analysis would consider the site-specific impacts on minority and low-income populations.” (4-12.) These amount to admissions that no EJ analysis in a generic EIS is sufficient for NEPA purposes; yet they still form part of the rationale for a finding in a generic document that there would be “no disproportionately high and adverse impacts” on EJ communities (see, e.g., 8-2). The analysis does not support the finding made, and the discrepancy should be corrected.

Design Basis Threats

The draft GEIS contains unsatisfactory analysis regarding threats posed by climate change. The draft GEIS states that “[r]ise in sea level is controlled by complex processes, and it is estimated to rise less than 1 m by 2100 (75 FR 81037). Based on this projected change, none of the U.S. nuclear power plants (operational or decommissioned) will be under water or threatened by water levels by 2050 (75 FR 81037).” (4-75.) Confidence based on the year 2050 does not address the time-spans at issue with the waste confidence rule, which extend beyond that date. Furthermore, new information¹⁰ provides estimates of sea level rise 1 ½ to 2 times higher than those

¹⁰ Global Sea Level Rise Scenarios for the United States National Climate Assessment, December 2012
http://cpo.noaa.gov/sites/cpo/Reports/2012/NOAA_SLR_r3.pdf

analyzed in draft GEIS, with some experts estimating an upper bound as high as 3 meters by the year 2300.¹¹

The NRC's analysis of a design basis event in dry cask storage fails to consider at least one foreseeable event, and provides no rationale as to why the two accidents that it does consider are representative. It examines only two scenarios involving a DTS: rods getting stuck and a loss of the air filtration system while a cask is open. (4-77 to 4-78.) It calls these "representative" of types of events that could impact the environment, but it provides no basis or reason for this. (4-77.) The draft GEIS also states that the accident with highest consequences is a canister being dropped during cask loading when an earthquake happens. (4-82.) Consequently, it would be reasonable to expect analysis of the effects of an earthquake occurring while a cask is open; but it does not appear that the NRC considered this.


The NRC did not provide any basis for its conclusion that the environmental risks due to increased intensity of thunderstorms is low for the short-term duration, despite the fact that as it states "climate models predict thunderstorms will intensify." (4-82.) Again, "short-term" could be well over half a century, or even longer for a new plant. This is an example of analysis where it would be reasonable and appropriate for the NRC to include a pledge to reevaluate as more information comes to light.

The draft GEIS is intended to provide an evaluation of the environmental impacts that may occur as a result of continued storage of spent fuel at or away from reactors, including the possibility that spent fuel may be stored for 60 years, 100 years or indefinitely. Because these time frames contemplate continued storage for generations to come, the NRC should seriously consider alternatives to the proposed Action that do not include a binding rule, which potentially serves to limit public involvement and the introduction of new information in future decisions. The draft GEIS should fully disclose mitigating actions that support conclusions about the significance of environmental effects resulting from the proposed Action, identify mitigating actions relied upon through incorporation by reference, and specify activities that will require further site-specific environmental evaluation. Finally, analysis in the draft GEIS should be strengthened to address unsupported assumptions, discrepancies and omissions as identified above.

¹¹ Expert Assessment of Sea-level Rise by AD 2100 and AD 2300
<http://www.sciencedirect.com/science/article/pii/S0277379113004381>

We appreciate the opportunity to comment on the draft GEIS and request that you consider these comments prior to taking final action. Please send any future Waste Confidence Decision and Rule-related NEPA notices and documents to Joan Walter, Senior Nuclear Policy Advisor, MS 36, 1516 Ninth Street, Sacramento, CA 95814-5512 or via email at joan.walter@energy.ca.gov.

Sincerely,

A handwritten signature in dark ink, appearing to read "Robert B. Weisenmiller". The signature is fluid and cursive, with the first name "Robert" and last name "Weisenmiller" clearly distinguishable.

ROBERT B. WEISENMILLER
Chair and State Liaison Officer to the NRC

Cc:

Joan Walter, California Energy Commission
Brian Hembacher, California Department of Justice
Megan Hey, California Department of Justice
Jim Williams, Western Interstate Energy Board

Attachment:

1. Examples of Unspecified and Deferred Mitigating Actions

Examples of Unspecified and Deferred Mitigating Actions

Examples of unspecified or deferred mitigating actions from NUREG-1437¹² that are relied upon by the draft GEIS:

- *“While the NRC cannot impose mitigation measures that are not related to public health and safety from radiological hazards or common defense and security, mitigation measures can be implemented to avoid, minimize or mitigate any adverse effects to historic properties. Other consulting parties...can provide information to assist in these determinations”,*¹³
- *“The NRC cannot impose water quality mitigation requirements on licensees”*¹⁴
- *“The NRC requires nuclear power plants to operate in compliance with all of its permits, thereby minimizing adverse impacts to the environment and on workers and the public. It is anticipated that all plants will continue to operate in compliance with all applicable permits”,*¹⁵
- *“The NRC has considered mitigation and concludes that no additional measures are likely to be sufficiently beneficial to be warranted”,*¹⁶
- *“Many of these unavoidable impacts are being mitigated by incorporating safety features and/or applying operational procedures at the plants and are monitored by the plant owners and state agencies”,*¹⁷
- *“Unavoidable adverse impacts would vary among the nuclear power plants, and the scale of the impact would depend on the specific characteristics of each power plant and its interaction with the environment. These unavoidable adverse impacts are evaluated in plant-specific SEISs”.*¹⁸

¹² Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Rev. 1, NRC, May 2013.

¹³ NUREG-1437, Affected Environment, Page 3-84.

¹⁴ NUREG-1437, Environmental Consequences and Mitigating Actions, Page 4-91.

¹⁵ NUREG-1437, Environmental Consequences and Mitigating Actions, Page 4-148.

¹⁶ NUREG-1437, Environmental Consequences and Mitigating Actions, Page 4-220.

¹⁷ NUREG-1437, Environmental Consequences and Mitigating Actions, Page 4-250.

¹⁸ NUREG-1437, Environmental Consequences and Mitigating Actions, Page 4-251.

Examples of deferred mitigating actions and assumed future activities from the impact identification sections of the draft GEIS:

- *Biological opinions and consultation/coordination with federal and state agencies which may require mitigation for impacts to special status species and habitats (4-43 through 4-45, 5-30 through 5-32, 6-32, 6-35 through 6-36),*
- *Section 106 consultations which can develop mitigation for impacts to historic and cultural resources (4-48, 5-34, 6-38),*
- *In the event of impacts induced by climate change, such as sea-level rise, the NRC regulations (e.g. 10 CFR 72.172, "Corrective action") require licensees to implement corrective actions to identify and correct or mitigate conditions adverse to safety (4-79),*
- *Site-specific permits which the NRC assumes would include mitigation for impacts to air quality (5-15),*
- *National Pollutant Discharge Elimination System (NPDES) or other permits which could require mitigation for impacts to aquatic resources, contamination of underlying groundwater systems, inadvertent changes to site hydrogeology and potential seawater intrusion (5-29, 6-29, 6-32, 6-35),*
- *Dredging or filling permits which could require additional mitigation or best management practices to minimize impacts to surface-water quality from erosion, sedimentation, runoff, spills, or leaks (6-27), and*
- *Local ordinances that may require mitigation measures for impacts from noise-producing activities disruptive to human activity (6-41).*