

July 9, 2012

COMSECY-12-0016

MEMORANDUM TO: Chairman Macfarlane
Commissioner Svinicki
Commissioner Apostolakis
Commissioner Magwood
Commissioner Ostendorff

FROM: R. W. Borchardt /RA/
Executive Director for Operations

SUBJECT: APPROACH FOR ADDRESSING POLICY ISSUES RESULTING
FROM COURT DECISION TO VACATE WASTE CONFIDENCE
DECISION AND RULE

The purpose of this memorandum is to provide the Commission with the staff's preliminary assessment of the approach that the Commission could take to address policy issues resulting from the June 8, 2012 decision of the U.S. Court of Appeals for the District of Columbia Circuit (DC Circuit or the court) concerning the U.S. Nuclear Regulatory Commission's (NRC's) Waste Confidence Decision and Consideration of Environmental Impacts of Temporary Storage of Spent Fuel After Cessation of Reactor Operation Rule (Temporary Storage Rule).¹

Background

The 2010 Waste Confidence Decision was challenged by the states of New York, New Jersey, Connecticut, and Vermont; several environmental groups; and the Prairie Island Indian Community on grounds primarily relating to aspects of the National Environmental Policy Act (NEPA) analysis supporting the decision and rule. The court vacated the 2010 decision and rule, holding that (1) the Waste Confidence Decision rulemaking is a major Federal action necessitating either an environmental impact statement (EIS) or a finding of no significant environmental impact (FONSI), and (2) the Commission's evaluation of the risks of spent nuclear fuel for at least 60 years beyond the licensed life for reactor operation (60-year post-operating period) is deficient in two respects. First, related to Finding 2 of the Waste Confidence Decision (concluding that permanent storage will be available "when necessary"), the Commission did not evaluate the environmental effects of failing to secure permanent

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¹ In SRM-SECY-09-0090, "Final Update of the Commission's Waste Confidence Decision" (September 15, 2010), the Commission directed the staff to update 10 CFR § 51.23 and revise Findings 2 and 4 of the Waste Confidence decision. The NRC issued its revision of the decision and rule in the *Federal Register* (FR) on December 23, 2010 [75 FR 81037 (Waste Confidence Decision Update); 75 FR 81032 (Consideration of Environmental Impacts of Temporary Storage of Spent Fuel After Cessation of Reactor Operation (Final Rule))].

storage. Second, related to Finding 4 (determining that spent fuel can be stored safely on site at nuclear plants for 60 years after the expiration of a plant's license in a combination of spent fuel pool and onsite or offsite independent spent fuel storage installations (ISFSIs)), the court concluded that the Commission failed to properly examine future dangers and key consequences.

Policy Issues and Technical Deficiencies

Waste Confidence, though applicable only to the period after the licensed life of a reactor, undergirds agency licensing decisions on new reactor licensing, reactor license renewal, and ISFSI licensing (see generally 10 C.F.R. § 51.23). The DC Circuit's decision vacates the 2010 Waste Confidence Decision and the Temporary Storage Rule. As explained in more detail below, the court concluded that the Waste Confidence Decision, which served as the environmental assessment (EA) for the Temporary Storage Rule, violated NEPA in three ways, described below. Thus, with the NRC's Waste Confidence Decision and Temporary Storage Rule vacated, NRC will need to take further action in order to make licensing decisions that would have relied on Waste Confidence.²

The staff has informed the Commission of several legal and administrative courses of action for the Commission to consider in determining how to respond to the court's decision. Separately, the staff has informed the Commission of licensing actions potentially affected by the court's decision, including current actions and those for which applications are anticipated by 2018. The staff has considered the status of these various licensing actions in developing its proposal for addressing the court's ruling, discussed in the next section.

The court held that the Waste Confidence rulemaking constitutes a major Federal action necessitating either an environmental assessment (EA) that supports a FONSI or an EIS. In finding that the Commission violated NEPA in issuing the Waste Confidence Decision and Temporary Storage Rule, the court identified three deficiencies and stated that these deficiencies may be addressed in a generic, rather than site-specific, analysis for the 60-year post-operating period (such as a rulemaking):

- Deficiency A: Consideration of environmental impacts if sufficient geologic repository capacity is not available "when necessary." The court stated that, in concluding that permanent storage will be available when necessary, the Commission did not calculate the environmental effects of failing to secure permanent storage—a possibility that the court stated cannot be ignored. The court further stated that the Commission can and must assess the potential environmental effects of such a failure.
- Deficiency B: Forward-looking analysis of environmental impacts from potential spent fuel pool leaks that might occur in the future. The court stated that because the Waste Confidence Decision seeks to extend the period of time for which pools are considered safe for storage, a proper analysis of the risks would need to look forward to examine the effects of the additional time in storage for the 60-year post-operating period, and to examine past leaks in a manner that would allow the Commission to rule out the possibility that those leaks were only harmless because of site-specific or other factors.

² This paper does not foreclose the Commission from pursuing other legal options in the courts.

- Deficiency C: Analysis of the probability and consequence of spent fuel pool fires. The court stated that the analysis for the 2010 update for the 60-year post-operating period does not examine the consequences of pool fires, in addition to their probabilities. Unless the risk is “remote and speculative,” the DC Circuit held that the Commission must consider both the impacts and probabilities of such an event before it can make a determination as to the overall consequences of pool fires.³

The following sections discuss options considered and the staff’s proposed approach for addressing the court decision that the Waste Confidence rulemaking is a major Federal action that requires further analysis under NEPA, as well as the three specific deficiencies.

Options for Addressing Deficiencies

The NRC can take various actions to address the gaps identified by the court in the NEPA analysis. The staff identified several options, which are described below.

- **Option 1:** Address the deficiencies through the rulemaking and EIS the staff is preparing regarding the environmental impacts of spent nuclear fuel storage beyond the 60-year post-operating period (current Long-Term Waste Confidence Update Project).⁴

This effort is currently predicated on the (vacated) 2010 Waste Confidence Decision and is not scheduled to be completed until 2019. The staff considered adjusting the scope and possibly accelerating the schedule for this project. This effort alone would not provide any immediate support for current and anticipated near-term licensing actions, which would remain subject to challenge in individual licensing proceedings on the issues identified by the court due to the invalidation of the Temporary Storage Rule. Additionally, it would be difficult to both expand the scope of the proposed EIS (to cover a broader time period and address the specific issues from the court) and appreciably accelerate the schedule, even if additional resources became available. In the staff’s opinion, an analysis that addresses the impacts beyond the 60-year post-operating period should not be the primary focus at this time, given that the long term effort was predicated upon the vacated rule. For these reasons, the staff does not recommend proceeding with this option.

- **Option 2:** Reissue the 2010 rule with a revised basis to address the court-identified deficiencies.

This option is incorporated as Track 2 in the following section addressing the staff’s recommended approach. Some minor modifications of Findings 2 and 4 in the Waste Confidence Decision may be needed. Like previous Waste Confidence decisions, the generic analysis would be adopted by rule and would not be subject to challenge in individual licensing proceedings without a waiver.

³ The 2010 Waste Confidence Update utilized studies of the catastrophic loss of spent fuel pool water, including fuel fires. Such studies also supported the previous 1990 Waste Confidence Decision (55 FR 38,511; September 18, 1990).

⁴ As described in “Annual Status Report: Activities Related to Extended Storage and Transportation and the Long-Term Waste Confidence Update” (May 31, 2012) and per Commission direction in SRM-SECY-09-0090, “Final Update of the Commission’s Waste Confidence Decision” (September 15, 2010).

- **Option 3:** Develop a general analysis that would address the deficiencies and use that analysis, tailored as necessary, in each NEPA document for affected NRC licensing actions issued between now and the time when the Waste Confidence update is completed. The analysis would be subject to challenge in individual licensing proceedings where it is used.

This option is incorporated as Track 1 in the following section addressing the staff's recommended approach.

- **Option 4:** Issue a policy statement indicating how the Commission plans to proceed in response to the court's decision. If the Commission issued a policy statement, near-term licensing actions could continue while the Commission undertakes a Waste Confidence Update. The Commission has previously taken a similar action for an analogous situation.⁵

This option may be feasible only if the Commission can obtain a stay of the court's mandate vacating and remanding the Waste Confidence Decision and Temporary Storage Rule. This paper does not address this option further.

The following discussion outlines the staff's plan for proceeding with the second and third options in parallel to address the court decision that the Waste Confidence rulemaking requires further analysis under NEPA.

Recommended Approach

The staff proposes to pursue both Options 2 and 3 simultaneously. The staff's proposal, discussed below, involves parallel tracks to address the deficiencies in the near term and longer term. The staff would supplement the affected NEPA analyses, as necessary, with a general analysis for ongoing and near-term licensing actions that rely on Waste Confidence (Option 3). The activities for Option 3 are categorized in this COMSECY as Track 1 activities. Simultaneously, the staff would develop a revised Waste Confidence Update (Option 2), categorized in this paper as Track 2 activities. Track 1 activities provide a means by which near-term licensing actions could continue while satisfying NEPA until a revised Waste Confidence Decision and Temporary Storage Rule are completed. Track 2 activities provide a means by which future licensing actions can use a revised Waste Confidence Decision and Temporary Storage Rule to satisfy NEPA. The proposed "revised Waste Confidence Update" discussed in Track 2 would be similar to the 2010 Decision and Rule, revised as necessary to allow preparation of an acceptable NEPA analysis.⁶

If directed to proceed with the proposed approach, staff would defer the current Long-Term Waste Confidence Update Project until the new work proposed in this paper is completed. At that time, if so directed, the staff would resume work on the long-term update. The long-term update would build upon the analyses and NEPA documents developed to address the current deficiencies. To the extent applicable, the staff would also utilize the work completed thus far for the Long-Term Waste Confidence Update Project in the Track 2 activities proposed here.

⁵ Three decades ago, the Commission issued a policy statement in the wake of an adverse court of appeals decision (see *Licensing and Regulatory Policy and Procedures for Environmental Protection; Uranium Fuel Cycle Impacts*, 47 Fed. Reg. 50591 (Nov. 8, 1982)).

⁶ At this point, the staff expects that in the revised Waste Confidence Decision, Finding 4 would consider a period of 60 years beyond the licensed life of the reactor, and Finding 2 would consider the availability of a repository for geologic disposal in somewhat more specific terms than in the vacated rule, without being explicit as to an expected date.

The following discussion explains how the proposed parallel tracks would address the three deficiencies.

Track 1: Supplementing Near-Term NEPA Analyses

For very near-term licensing needs, the staff would develop a general analysis to address each deficiency that could be incorporated in, and tailored to, the site-specific EISs or EAs developed for pending reactor or ISFSI licensing actions. The general analysis would be developed in coordination among Office of Nuclear Reactor Regulation, Office of New Reactors, Office of Federal and State Materials and Environmental Management Programs, Office of Nuclear Material Safety and Safeguards, Office of Nuclear Regulatory Research, and Office of General Council.

To address deficiency A (i.e., that repository capacity may not be available when necessary), this general analysis would account for the potential lack of a repository and the associated impacts (e.g., the analysis could assume that ISFSIs are continuously maintained and monitored, with major maintenance and replacement at regular intervals). The analysis would not be a stand-alone NEPA document but would provide the framework for the preparation of site-specific NEPA documents. The staff considers that adding this analysis to the NEPA document for each licensing action is the most efficient way to address the issue for near-term actions. To the extent that this is a generic issue that affects a class of licensing actions (e.g., all reactor license renewals), the analysis could eventually be incorporated into the generic EIS (GEIS) for the class of relevant actions. The staff will further investigate the most efficient method for addressing 60-year post-operating period environmental impacts for each current and upcoming licensing action if directed by the Commission to proceed.⁷

The staff proposes to make use of existing analyses of spent fuel pool leaks and fires to address deficiencies B (pool leaks) and C (pool fires) in site-specific NEPA reviews. These analyses would be bolstered, where needed, by ongoing and new analyses to sufficiently address the court's concerns about developing a forward-looking analysis that considers consequences. The staff analyses required to address these deficiencies in any site-specific licensing action will need to appropriately account for the applicant's proposed approach to manage spent fuel after cessation of reactor operations (e.g., pool versus dry storage).

⁷ An alternate approach is immediate revision of each GEIS to incorporate the analysis. Given the additional process time to effect a set of GEIS revisions (including public comment), the staff sees this alternative as potentially having undesirable schedule impacts on licensing actions as compared to using the action-specific NEPA documents, particularly for very near-term actions. The action-specific approach would provide public participation opportunity through the ordinary NEPA process. Thus, the staff does not recommend adding any additional analyses of extended storage of spent nuclear fuel at this time to the revised License Renewal GEIS or draft final rule. See SECY-12-0063, "Final Rule: Revisions to Environmental Review for Renewal of Nuclear Power Plant Operating Licenses." The staff believes that the revised reactor license renewal GEIS and rulemaking package, both currently before the Commission, can be issued with minimal revisions limited to removing references to the 2010 Waste Confidence update, thereby allowing the staff to consider this as a site-specific issue in license renewal EISs.

Additional considerations for this track:

- This track requires resources for each affected licensing action to modify the general assessment for site-specific concerns and to address any resulting consultation (e.g., with state or tribal governments) that might be needed under NEPA.
- Addressing the issues in site-specific licensing proceedings will likely increase the time and resources needed to complete each proceeding due to the possibility of legal challenges in each proceeding. The greatest burden will likely fall on the first licensing actions of each type that occur.
- The resolution of issues arising in site-specific licensing actions would inform and strengthen any revisions to applicable GEISs, as well as the revised Waste Confidence Update, which is discussed below in Track 2.
- This track would end when the revised Waste Confidence Update is complete and can be referenced in licensing and generic NEPA documents.

The staff's initial estimate is that this track may add a few months to two years to the affected licensing action and hearing time, depending on the complexity of the proceeding, site-specific considerations, the state of the NEPA document (already issued or still in preparation), and the level of public comments to be addressed.

Track 2: Revised Waste Confidence Update

In parallel with Track 1, the staff would develop a NEPA analysis to support a revised Waste Confidence Update and address the three deficiencies. The analysis could be developed as an EA that leads to a FONSI, or the agency can prepare an EIS. Both methods are described below.

EIS Method: The staff would redirect its current work on a long-term update of the vacated Temporary Storage Rule to address a revised Waste Confidence Update like that in the 2010 Waste Confidence Decision and Temporary Storage Rule. The principal focus of the EIS would be a detailed analysis of impacts of storage, addressing the three deficiencies for a period of 60 years beyond a reactor's licensed life (which includes the period for any renewals). This EIS would be initiated under the Commission's discretion in 10 CFR § 51.20(a)(2), and is not a finding that the Waste Confidence Update requires an EIS.

Beyond this period, the analysis would assess the longer-term impacts for two scenarios: the availability of a repository (consistent with national policy in the Nuclear Waste Policy Act) and the non-availability of a repository (consistent with deficiency A). The methodology used in the beyond-60-years section of the EIS can be more general than that used for the analysis of storage for the 60-year period, since it considers impacts further in the future that would require additional assumptions, while still satisfying the NEPA standard of a "hard look" at potential impacts. To the extent that this is a generic issue that affects a class of licensing actions (e.g., all operating reactor license renewals), the relevant GEIS could eventually be updated to contain a reference to the rule update. Staff estimates that the earliest the revised Waste Confidence Update for this proposed scope could be completed is calendar year 2017, primarily because of the need for extensive stakeholder interaction and developing the analyses for the EIS.

Additional considerations for the EIS method:

- Some impacts of the non-availability of a repository are likely to be significant if no short-term endpoint is established for the analysis. Thus, developing an EIS at the outset reduces the risk of needing to start the process again if, alternatively, the staff were to begin preparing an EA and subsequently determine that an EIS is required.
- An EIS would require more time and total resources to complete than an EA that results in a FONSI; however, the resources needed for public involvement could be similar for the two methods.

EA Method: The staff would redirect its current efforts on the long-term update to develop a revised Waste Confidence Update supported by an EA with the scope and elements of the EIS described above. This document would provide a level of detail in the analysis commensurate with an EA. At this point, the staff cannot determine whether a FONSI is supportable for deficiency A. If reaching a FONSI is determined to be feasible, the staff estimates that the earliest the final EA for this proposed scope could be completed is calendar year 2015, depending on the level of public involvement. The staff expects that if work on an EA is initiated, the determination of whether a FONSI can be supported would be established fairly early in the development process, and the Commission could redirect staff efforts as appropriate.

Additional considerations for the EA method:

- Typically, the EA process provides less opportunity for public engagement (e.g., no public scoping is required), although the staff would like to increase the level of public participation given the level of public interest regarding this issue.
- An EA may be completed more rapidly than the EIS described previously, depending on the level of public involvement.
- An EA likely requires less total resources than an EIS, although per year costs may be comparable. In addition, the resources needed for public involvement could be similar for the two methods.
- An EA may not support a FONSI, in which case an EIS would still be necessary.

Summary of Recommended Approach

The staff would proceed with the parallel, two-track approach to support both near-term licensing actions (Option 3 – Track 1) and a revised Waste Confidence Decision and Temporary Storage Rule (Option 2 – Track 2).

Track 1: For near-term licensing actions, the staff recommends that additional analyses be included in individual (i.e., site-specific) NEPA documents to address the three deficiencies, along with the use of other licensing tools, as appropriate. Other than potential relief from the court in conjunction with a policy statement, the staff has not identified any other feasible approach that will allow near-term licensing actions to proceed without more significant interruptions.

Track 2: To support a revised Waste Confidence Update (addressing the 60-year post-operating period), the NRC must develop appropriate NEPA analyses to address the three deficiencies. As discussed in the preceding section, the staff could develop an EIS or an EA. The staff is presently assessing these methods to determine which should be pursued and will inform the Commission of its preferred approach.

Resources

This enclosure presents the staff's preliminary estimate of the total resources needed to complete the proposed, two-track approach to address the issues resulting from the court decision to vacate the 2010 Waste Confidence Decision and Rule. The estimates are organized by business line and the two tracks (Track 1: Supplementing Near-Term NEPA Analyses; Track 2: Revised Waste Confidence Update). Projected resources include both full-time equivalents (FTE) and contract funds. Resource estimates are for the duration of the Waste Confidence effort. Upon Commission approval, resources for fiscal year (FY) 2012 - 2014 will be funded through reprogramming requests and reprioritization of lower priority work. Resources for FY 2015 and beyond will be requested through the Agency's Planning, Budgeting, and Performance Monitoring process. Staff will inform the Commission of estimated resource needs by fiscal years after the Waste Confidence plan is finalized.

Track 1 estimates include supplementation of NEPA documents and support for potential hearings. These projections encompass anticipated licensing activities through FY 2018, for renewals and applications for reactors (combined operating licenses, operating licenses, and early site permits) and ISFSIs. Projections for the numbers of new applications follow the assumptions in the FY 2013 Congressional Budget Justification. These estimates include resources in multiple offices (principally NRR, NRO, NMSS, FSME, RES, and OGC). Resource needs are expected to be greater for the earlier actions, and decrease in later actions as the approach is refined. None of the Track 1 resources are included in current budget requests.

Track 2 estimates include development of a revised Waste Confidence Decision and Temporary Storage Rule, with supporting NEPA documents. Separate estimates are provided for the methods discussed in the paper: an EIS or an EA, if a FONSI can be supported. These estimates include resources in multiple offices (principally NMSS and OGC). Annual resource needs are expected to be distributed relatively evenly over the duration of the work. Resources currently budgeted for FY 2013 for the Long-Term Waste Confidence Update Project in the Spent Fuel Storage and Transportation Business Line could be redirected to begin the Track 2 activities.

Business Line	Track 1 Complete in FY 2018		Track 2			
			EIS Complete in CY 2017 (FY 2018)		EA Complete in CY 2015 (FY 2016)	
	FTE	\$K	FTE	\$K	FTE	\$K
Operating Reactors	33	--	--	--	--	--
New Reactors	30	4,200	--	--	--	--
Spent Fuel Storage and Transportation	10	2,400	24	4,000	15	2,400
Total	73	6,600	24	4,000	15	2,400

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Business Line	Track 1 Complete in FY 2018		Track 2			
			EIS Complete in CY 2017 (FY 2018)		EA Complete in CY 2015 (FY 2016)	
	FTE	\$K	FTE	\$K	FTE	\$K
Operating Reactors	33	--	--	--	--	--
New Reactors	30	4,200	--	--	--	--
Spent Fuel Storage and Transportation	10	2,400	24	4,000	15	2,400
Total	73	6,600	24	4,000	15	2,400

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