July 9, 2012

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE SECRETARY

In the Matter of	)	
	)	
PROGRESS ENERGY CAROLINAS, INC.	)	Docket Nos. 52-022 COL
	)	52-023 COL
(Shearon Harris Nuclear Power Plant,	)	
Units 2 and 3)	)	
	)	

NC WARN'S MOTION TO REOPEN THE RECORD AND ADMIT CONTENTION CONCERNING TEMPORARY STORAGE AND ULTIMATE DISPOSAL OF NUCLEAR WASTE AT THE SHEARON HARRIS NUCLEAR POWER PLANT

PURSUANT TO 10 C.F.R. §§ 2.309 and 2.326, now comes the North Carolina Waste Awareness and Reduction Network ("NC WARN"), by and through the undersigned counsel, to move to reopen the record in this proceeding to admit a new contention concerning temporary storage and ultimate disposal of nuclear waste at Shearon Harris Nuclear Power Plant Units 2 and 3 ("Shearon Harris") challenging the adequacy of the Environmental Report for the Combined Licenses (COLs) for Shearon Harris to address the environmental impacts of spent fuel pool leakage and fires as well as the environmental impacts that may occur if a spent fuel repository does not become available.

I. INTRODUCTION

The contention is based on the United States Court of Appeals for the District of Columbia Circuit's recent decision in *State of New York v. NRC*, No. 11-1045 (June 8, 2012) (ATTACHED) which invalidated the Nuclear Regulatory Commission's ("NRC") Waste Confidence Decision Update (75 Fed. Reg. 81,037 (Dec. 23, 2010)) ("WCD") and the NRC's final rule regarding Consideration of Environmental Impacts of Spent Fuel After Cessation of Reactor Operation (75 Fed. Reg. 81,032 (Dec. 23, 2010)) ("Temporary Storage Rule" or "TSR"). *State of New York* vacated the generic findings in 10 C.F.R. § 51.23(a) regarding the safety and environmental impacts of spent fuel storage. As a result, the NRC no longer has any legal basis for Section 51.23(b), which relies on those findings to exempt both the agency staff and license applicants from addressing long-term spent fuel storage impacts in individual licensing proceedings.

NC WARN recognizes that because the mandate has not yet issued in *State of New York*, this contention may be premature. Nevertheless, NC WARN is submitting the contention within 30 days of becoming aware of the Court's ruling, in light of Commission precedents judging the timeliness of motions and contentions according to when petitioners became aware of a decision's potential effect on their interests. *Duke Energy Corp*. (McGuire Nuclear Station, Units 1 and 2; Catawba Nuclear Station, Units 1 and 2), CLI-02-28, 56 NRC 373, 386 (2002). If the Commission determines that this contention is premature, Intervenors request that consideration of the contention be held in abeyance pending issuance of the mandate.

II. PROCEDURAL BACKGROUND

On August 8, 2008, NC WARN filed a Petition for Intervention and Request for Hearing in the Shearon Harris COL proceeding. An Atomic Safety and Licensing Board ("ASLB") granted the petition, and after numerous filings, the contents of which are not relevant to this Motion, the board dismissed the petition and closed the record. NC WARN appealed the licensing board's decisions to the Commission who upheld the ASLB's dismissal in its Memorandum and Order, CLI-10-09, March 11, 2010.

It is important to note that one of the contentions raised by NC WARN in its initial petition was

> Contention EC-5 (Waste disposal). The COLA fails to evaluate whether and in what time frame the irradiated "spent" fuel generated by the proposed Harris nuclear reactors can be safely disposed. The ER does not contain any discussion of the environmental implications of the lack of options for permanent disposal of the irradiated fuel to be generated by the Harris site.

The Commission in CLI-10-09, page 38, upheld the ASLB decision and summarily dismissed NC WARN's contention as an impermissible challenge to the WCD. To the extent the Commission determines it necessary to reconsider this earlier contention, the present motion to reopen includes a request for reconsideration of the dismissal of NC WARN Contention EC-5.

III. CONTENTION

A. Statement of the New Contention

> The Environmental Report for the Shearon Harris Nuclear Power Plants, Units 2 and 3, does not satisfy NEPA because it does not include a discussion of the environmental impacts of spent fuel storage after cessation of operation, including the impacts of spent fuel pool leakage,

spent fuel pool fires, and failing to establish a spent fuel repository, as required by the U.S. Court of Appeals in *State of New York v. NRC*, No. 11-1045 (June 8, 2012). Therefore, unless and until the NRC conducts such an analysis, no license may be issued.

B. Brief Explanation of the Contention

The contention is based on the United States Court of Appeals for the District of Columbia Circuit's decision in *State of New York v. NRC*, which invalidated the NRC's generic findings in 10 C.F.R. § 51.23(a) regarding the safety and environmental impacts of spent fuel storage after cessation of reactor operation with respect to spent fuel pool leakage, pool fires, and the environmental impacts of failing to establish a repository. As a result, the NRC no longer has any legal basis for Section 51.23(b), which relies on those findings to exempt both the agency staff and license applicants from addressing spent fuel storage impacts in individual licensing proceedings. To the extent that the Environmental Report for Shearon Harris addresses spent fuel storage impacts, it does not address the concerns raised by the Court in *State of New York*. Therefore, before Shearon Harris can be licensed, those impacts must be addressed.

NC WARN does not currently take a position on the question of whether the environmental impacts of post-operational spent fuel storage should be discussed in an individual EIS or environmental assessment for this facility or a generic EIS or environmental assessment. That question must be decided by the NRC in the first instance. *Baltimore Gas and Electric Co. v. NRDC*, 462 U.S. 87 (1983). NC WARN reserves the right to challenge the adequacy of any generic analysis the NRC may prepare in the future to address the site-specific environmental conditions at Shearon Harris. The current circumstances, however, are such that the NRC has no valid

environmental analysis, either generic or site-specific, on which to base the issuance of a license for this facility.

C. Additional Basis for Contention

In 1984, the NRC issued its first WCD, making findings regarding the safety of spent fuel disposal and the safety and environmental impacts of spent fuel storage. Over the several decades that have passed since then, the NRC has updated the WCD. The latest update was issued in December 2010. On June 8, 2012, the U.S. Court of Appeals for the D.C. Circuit took review of the NRC's 2010 WCD Update and TSR and vacated those rules in their entirety. In the course of reviewing the WCD Update, the Court found that the WCD is a "major federal action" under the National Environmental Policy Act ("NEPA"), therefore requiring either a finding of no significant impact ("FONSI") or an environmental impact statement ("EIS"). Id., slip op. at 8. The Court also found it was "eminently clear that the WCD will be used to enable licensing decisions based on its findings" because the WCD "renders uncontestable general conclusions about the environmental effect of plant licensure that will apply in every licensing decision." Id., slip op. at 9 (citing 10 C.F.R. § 51.23(b)).

With respect to the WCD's conclusions regarding spent fuel disposal, the Court observed that the NRC has "no long-term plan other than hoping for a geologic repository" and that spent reactor fuel "will seemingly be stored on site at nuclear plants on a permanent basis" if the government "continues to fail in its quest" to site a permanent repository. Id., slip op. at 13. Thus, the Court concluded that the WCD "must be vacated" with respect to its conclusion in Finding 2 that a suitable spent fuel

repository will be available "when necessary." Id., slip op. at 11. In order to comply with NEPA, the Court found that the NRC must "examine the environmental effects of failing to establish a repository." Id., slip op. at 12.

With respect to the TSR's conclusions regarding the environmental impacts of temporary storage of spent reactor fuel at reactor sites, the Court concluded that the NRC's environmental assessment ("EA") and FONSI issued as part of the TSR "are not supported by substantial evidence on the record" in two respects. First, the NRC had reached a conclusion that the environmental impacts of spent fuel pool leaks will be insignificant, based on an evaluation of past leakage. The Court concluded that the past incidence of leaks was not an adequate predictor of leakage thirty years hence, and therefore ordered the NRC to examine the risks of spent fuel pool leaks "in a forward-looking fashion." Id., slip op. at 14. In addition, the Court found that the NRC's analysis of the environmental impacts of pool fires was deficient because it examined only the probability of spent fuel pool fires and not their consequences. Id., slip op. at 18-19. "Depending on the weighing of the probability and the consequences," the Court observed, "an EIS may or may not be required." Id., slip op. at 19.

In remanding the WCD Update and the TSR to the NRC, the Court purposely did not express an opinion regarding whether an EIS would be required or an EA would be sufficient. Instead, it left that determination up to the discretion of the NRC. Id., slip op. at 12, 20.

IV. DISCUSSION OF LEGAL ISSUES

Until a COL has been issued, the Commission retains jurisdiction to reopen the record

for consideration of a new contention. *Private Fuel Storage*, L.L.C. (Independent Fuel Storage Installation), CLI-06-3, 63 NRC 19, 24 (2006). Nineteen overlapping factors, set forth in three regulations, govern motions to reopen and admit new contentions. See 10 C.F.R. §§ 2.309(c), 2.309(f), and 2.326; see also *Entergy Nuclear Vermont Yankee, L.L.C. and Entergy Nuclear Operations, Inc*. (Vermont Yankee Nuclear Power Station), __ NRC __ at Attachment A (Oct. 28, 2010). This Motion and the accompanying new contention satisfy each of these factors.

In addition to satisfying the requirements for a Motion to Reopen, to be admitted for hearing, a new contention must also satisfy the six general requirements set forth in 10 C.F.R. § 2.309(f)(1), and the timeliness requirements set forth in either 10 C.F.R. § 2.309(f)(2) (governing timely contentions) or 10 C.F.R. § 2.309(c) (governing non-timely contentions). As provided in the accompanying contention, each of the requirements set forth in 10 C.F.R. § 2.309(f)(1) is satisfied. Furthermore, NC WARN maintains that this Motion and accompanying contention are timely, and the requirements of 10 C.F.R. § 2.309(f)(2) are also satisfied. In the event the Commission determines that this Motion and the accompanying contention are not timely, NC WARN maintains that the requirements of 10 C.F.R. § 2.309(c) are satisfied.

A. This Motion Satisfies the Standards For Reopening a Closed Hearing Record Set Forth in 10 C.F.R. § 2.326.

Pursuant to 10 C.F.R. § 2.326, a motion to reopen a closed record must be timely, address a significant environmental issue, demonstrate that a materially different result would have been likely had the newly proffered evidence been considered initially,

and be accompanied by an expert declaration. This Motion satisfies the requirements of 10 C.F.R. § 2.326.

1. The Motion is Timely.

The NRC has adopted a three-part standard for assessing timeliness. See 10 C.F.R. § 2.309(f)(2). The Motion and accompanying contention are timely as the information upon which the Motion and accompanying contention are based was not previously available. The availability of material information "is a significant factor in a Board's determination of whether a motion based on such information is timely filed." *Houston Lighting & Power Co.* (South Texas Project, Units 1 & 2), LBP-85-19, 21 NRC 1707, 1723 (1985) (internal citations omitted). This Motion and the accompanying contention are based on the D.C. Circuit Court's decision in *State of New York*, issued on June 8, 2012. Before issuance of the decision, the information material to the contention was simply unavailable. The information upon which the Motion and accompanying contention are based is materially different than information previously available.

NC WARN has submitted this Motion and accompanying contention in a timely fashion. The NRC customarily recognizes as timely contentions that are submitted within thirty (30) days of the occurrence of the triggering event. *Shaw Areva MOX Services, Inc*. (Mixed Oxide Fuel Fabrication Facility), LBP-08-10, 67 NRC 460, 493 (2008). Because they were filed within thirty (30) days of publication of the issuance of the Court's decision on the WCD, this Motion and accompanying contention are timely.

2. The Motion Addresses a Significant Environmental Issue.

As noted in the Court's decision on the WCD and as discussed in the present

motion, the ability of the NRC to guarantee the safe disposal of spent nuclear fuel is essential to protecting public health and safety and the environment. As noted above, the NRC in its rulemaking proceedings on the WCD described this issue as significant. There is no doubt that the environmental impacts of spent fuel storage must be addressed in all NRC reactor licensing decisions. *State of New York*, slip op. at 8 (holding that the WCD is a "predicate" to every licensing decision); *Minnesota v. NRC*, 602 F.2d 412 (D.C. Cir. 1979).

3. The Motion Demonstrates That a Materially Different Result Would Be Likely Had the Newly Proffered Evidence Been Considered Initially.

A materially different result would be likely had the NRC considered the new and significant information set forth in the proffered contention in developing the Environmental Report for Shearon Harris. In particular, if severe accident mitigation alternatives ("SAMAs") were imposed as mandatory measures to manage and store the spent fuel at the Shearon Harris site, the outcome of the Environmental Report could be affected in three major respects. First, the environmental analysis would have to consider the implication of the Court's holding that compliance with current NRC safety requirements does not adequately protect public health and safety from severe accidents and their environmental effects. Second, if the reactors were unable to comply with new mandatory requirements for the safe management and storage of spent fuel, it could result in the denial of the COL. Third, the cost of adopting mandatory measures necessary to significantly improve the safety of the proposed new reactor is likely to be significant.

4. The Contention Sets Forth the Factual Bases for This Motion.

The proffered contention is based primarily on law rather than facts. Intervenors have adequately supported their contention by citing *State of New York* and discussing its legal effect on this proceeding. Intervenors also rely on the undisputed fact that the NRC has taken no steps to cure the deficiencies in the basis for 10 C.F.R. § 51.23(a) that the Court identified in *State of New York*.

B. The New Contention Satisfies the Standards For Non-Timely Contentions Set Forth in 10 C.F.R. § 2.309(c).

A motion to reopen which relates to a contention not previously in controversy among the parties must also satisfy the requirements for non-timely contentions set forth in 10 C.F.R. § 2.309(c). See 10 C.F.R. § 2.326(d). Under § 2.309(c), determination on any "non-timely" filing of a contention must be based on a balancing of eight factors, the most important of which is "good cause, if any, for the failure to file on time." *Crow Butte Res., Inc.* (North Trend Expansion Project), LBP-08-6, 67 NRC 241 (2008). As set forth below, each of the factors favors admission of the accompanying contention.

1. Good Cause.

Good cause for the late filing is the first, and most important element of 10 C.F.R. § 2.309(c)(1). *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-00-02, 51 NRC 77, 79 (2000). Newly arising information has long been recognized as providing the requisite "good cause." See *Consumers Power Co.* (Midland Plant, Units 1 & 2), LBP-82-63, 16 NRC 571, 577 (1982), citing *Indiana & Michigan Elec. Co.* (Donald C. Cook Nuclear Plant, Units 1 & 2), CLI-72-75, 5 AEC 13,

14 (1972). Thus, the NRC has previously found good cause where (1) a contention is based on new information and, therefore, could not have been presented earlier, and (2) the intervenor acted promptly after learning of the new information. *Texas Utils. Elec. Co.* (Comanche Peak Steam Electric Station, Units 1 & 2), CLI-92-12, 36 NRC 62, 69-73 (1992).

As noted above, the information on which this Motion and accompanying contention are based primarily on law rather than facts. Intervenors have adequately supported their contention by citing *State of New York* and discussing its legal effect on this proceeding. Intervenors also rely on the undisputed fact that the NRC has taken no steps to cure the deficiencies in the basis for 10 C.F.R. § 51.23(a) that the Court identified in *State of New York*. This Motion and accompanying contention are being submitted less than thirty (30) days after issuance of the Court's decision. Accordingly, NC WARN has good cause to submit this Motion and the accompanying contention now.

2. Nature of the Intervenors' Right to be a Party to the Proceeding.

NC WARN was previously admitted as a party intervenor in the Shearon Harris COL proceeding, based upon standing declarations from their members. *Southern Nuclear Operating Co.* (Vogtle, Units 3 & 4), ASLBP-09-873-01-COL-BD01 (2009). In support of this Motion, NC WARN is submitting declarations from its principal officer reflecting its continuing relationship with and representation of these individuals. The declaration of the principal officer provides that: (1) the organization continues to represent the interests of its members who previously filed standing declarations in the Shearon Harris COL proceeding, (2) there has been no substantial change in the

organization's status or standing regarding its participation in this proceeding, and (3) there has been no material change in the factual bases upon which the members' standing declarations were based, including, without limitation, the proximity of each individual's residence to Shearon Harris. Accordingly, NC WARN continues to have a right to be a party to this proceeding.

3. Nature of NC WARN's Interest in the Proceeding.

NC WARN seeks to protect its members' health, safety, and lives, as well as the health and safety of the general public and the environment by ensuring that the NRC fulfills its non-discretionary duty under NEPA safely manage and store spent fuel. Moreover, as each of the members represented by Intervenors in this proceeding live within fifty (50) miles of Shearon Harris, NC WARN has an interest in this proceeding because of the "obvious potential for offsite consequences" to those members' health and safety. *Diablo Canyon*, 56 NRC at 426-27, citing *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-01-6, 53 NRC 138, 146, *aff'd*, CLI-01-17, 54 NRC 3 (2001).

4. Possible Effect of an Order on NC WARN's Interest in the Proceeding.

As noted above, NC WARN's interest in a safe, clean, and healthful environment would be served by the issuance of an order requiring the NRC to fulfill its non-discretionary duty under NEPA to consider new and significant information before making a licensing decision. See *Silva v. Romney*, 473 F.2d at 292. Compliance with NEPA ensures that environmental issues are given full consideration in "the ongoing programs and actions of the Federal Government." *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 371 n. 14 (1989). As noted above, the Court in *State of New*

York held that the WCD was "predicate" to every licensing decision.

5. Availability of Other Means to Protect the Intervenors' Interests.

With regard to this factor, the question is not whether other parties may protect NC WARN's interests, but rather whether there are other means by which an intervenor may protect it own interests. *Long Island Lighting Co.* (Jamesport Nuclear Power Station, Units 1 & 2), ALAB-292, 2 NRC 631 (1975). Quite simply, no other means exist. Only through this hearing do Intervenors have a right that is judicially enforceable to seek compliance by NRC with NEPA before the COL for Shearon Harris is issued, permitting these new reactors to operate and impose severe accident risks on the individuals represented by Intervenors.

6. Extent the NC WARN's Interests are Represented by Other Parties.

No other party can represent Intervenors' interests in protecting the health, safety, and environment of their members. Indeed, there are no parties currently admitted in the contested proceeding. As such, NC WARN's interests cannot be represented by any other party.

7. Extent That Participation Will Broaden the Issues.

While NC WARN's participation may broaden or delay the proceeding, this factor may not be relied upon to deny this Motion or exclude the contention as the NRC has a non-discretionary duty under NEPA to consider new and significant information that arises before it makes its licensing decision. *Marsh*, 490 U.S. at 373-4. Moreover, any resulting delay from granting Intervenors' participation in this proceeding would not prohibit certain construction activities. Review of the COL application by the NRC staff will remain unaffected by this Motion and accompanying contention. See *Florida Power*

& Light Co. (St. Lucie Nuclear Power Plant, Unit 2), ALAB-420, 6 NRC 8, 23 (1977) (holding that, in deciding whether petitioners' participation would broaden the issues or delay the proceeding, it is proper for the Licensing Board to consider that the petitioners agreed to allow issuance of the construction permit before their antitrust contentions were heard, thereby eliminating any need to hold up plant construction pending resolution of those contentions.).

8. Extent to which Intervenors Will Assist in the Development of a Sound Record.

NC WARN will assist in the development of a sound record, as its contention is supported by findings and conclusions in the Court's decision in *State of New York*, and further described in this motion. Furthermore, as a matter of law, NEPA requires consideration of the new and significant information in matters requiring an environmental impact statement. See 10 C.F.R. § 51.92(a)(2). A sound record cannot be developed without such consideration.

C. The New Contention Satisfies the Standards For Admission of Timely Contentions Set Forth in 10 C.F.R. § 2.309(f)(2).

As discussed above the NRC has adopted a three-part standard for assessing timeliness in 10 C.F.R. § 2.309(f)(2). The contention meets the timeliness requirements of 10 C.F.R. § 2.309(f)(2), which call for a showing that:

> (i) The information upon which the amended or new contention is based was not previously available;
>
> (ii) The information upon which the amended or new contention is based is materially different than information previously available; and
>
> (iii) The amended or new contention has been submitted in a timely

fashion based on the availability of the subsequent information.

Intervenors satisfy all three prongs of this test. First, the information on which the contention is based -- i.e., the invalidity of 10 C.F.R. § 51.23(b) and the findings on which it is based -- is new and materially different from previously available information. Prior to June 8, 2012, 10 C.F.R. § 51.23 was presumptively valid. Subsequent to the issuance of *State of New York* by the U.S. Court of Appeals, the NRC no longer has a lawful basis for relying on that regulation to exempt itself or license applicants from considering the environmental impacts of post-operational spent fuel storage in the environmental analyses for individual reactor license applications. By the same token, the generic analyses in the WCD and the TSR, on which the NRC relied for all of its reactor licensing decisions, are no longer sufficient to support the issuance of a license. Therefore the NRC lacks an adequate legal or factual basis to issue a COL for Shearon Harris.

Finally, the contention is timely because it has been submitted within 30 days of June 8, 2012, the date the U.S. Court of Appeals issued *State of New York*.

D. The New Contention Satisfies the Standards For Admission of a New Contention Set Forth in 10 C.F.R. § 2.309(f)(1).

As shown in the contention and discussed in its factual and legal basis, the standards for admission of a contention set forth in 10 C.F.R. § 2.309(f)(1) are satisfied.

1. The Contention Meets the Specific Requirements for a Contention.

The Contention is a specific statement of the issue of law to be raised and this Motion contains a clear explanation of the background and basis for the contention.

2. The Contention is Within the Scope of the Proceeding

The contention is within the scope of this licensing proceeding because it seeks to ensure that the NRC complies with the NEPA before issuing a COL for Shearon Harris. As noted above, there is no doubt that the environmental impacts of spent fuel storage must be addressed in all NRC reactor licensing decisions; the WCD is a "predicate" to every licensing decision. *State of New York*, Id.

3. The Issues Raised Are Material to the Findings that the NRC Must Make to Support the Action that is Involved in this Proceeding

The issues raised in this contention are material to the findings the NRC must make to support the action that is involved in this proceeding, in that the NRC must render findings pursuant to NEPA covering all potentially significant environmental impacts. See discussion above in subsection (2). As such, in the absence of 10 C.F.R. § 51.23(a), it is clear that this contention addresses a material omission in the NRC staff's environmental review pursuant to NEPA.

4. Concise Statement of Facts of Expert Opinion Support the Contention

This contention is based primarily on law rather than facts. Intervenors have adequately supported their contention by citing *State of New York* and discussing its legal effect on this proceeding. Intervenors also rely on the undisputed fact that the NRC has taken no steps to cure the deficiencies in the basis for 10 C.F.R. § 51.23(a) that the Court identified in *State of New York*.

5. A Genuine Dispute Exists with the Applicant on a Material Issue of Law or Fact.

The Intervenors have a genuine dispute with the applicant regarding the legal adequacy of the environmental analysis on which the applicant relies in seeking [a COL

or license renewal] in this proceeding. Unless or until the NRC cures the deficiencies identified in *State of New York* or the applicant withdraws its application, this dispute will remain alive.

V. CONSULTATION CERTIFICATION PURSUANT TO 10 C.F.R. § 2.323(b)

NC WARN certifies that on July 6, 2012, counsel contacted counsel for the applicant and the NRC staff in an attempt to obtain their consent to this Motion. Counsel for the applicant stated the Applicant would opposed the Motion. The NRC Staff stated it does not oppose the filing of the motion, but it does not have enough information to take a take a position on the admissibility of the proposed contention. The Staff will respond to the contention in accordance with 10 C.F.R. 2.309 when filed.

VI. CONCLUSION

For the foregoing reasons, this Motion should be granted and the proffered contention admitted.

Respectfully submitted this 9th day of July 2012

_____/signed (electronically) by/_____
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CERTIFICATE OF SERVICE

I hereby certify that copies of this NC WARN'S MOTION TO REOPEN THE RECORD AND ADMIT CONTENTION CONCERNING TEMPORARY STORAGE AND ULTIMATE DISPOSAL OF NUCLEAR WASTE AT THE SHEARON HARRIS NUCLEAR POWER PLANT were served on the following via the EIE system:

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This is the 9th day of July 2012.

FOR NC WARN

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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In the Matter of	)	
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PROGRESS ENERGY CAROLINAS, INC.	)	Docket Nos. 52-022 COL
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(Shearon Harris Nuclear Power Plant,	)	
Units 2 and 3)	)	
	)	

STANDING DECLARATION IN SUPPORT OF
MOTION TO REOPEN THE RECORD AND ADMIT CONTENTION

Under penalty of perjury, I, James Warren, declare as follows:

1. My name is James Warren and I am the Executive Director of the North Carolina Waste Awareness and Reduction Network ("NC WARN").

2. NC WARN continues to represent the interests of its members who previously filed standing declarations in the proceeding on the proposed combined operating license for the proposed Shearon Harris Nuclear Power Plant, Units 2 and 3 ("Shearon Harris").

3. There has been no substantial change in the organization's status or standing regarding its participation in this proceeding,

4. There has been no material change in the factual bases upon which the members' standing declarations were based, including, without limitation, the proximity of each individual's residence to Shearon Harris. Accordingly, NC WARN continues to have a right to be a party to this proceeding.

5. NC WARN is authorized to represent the members of its members and does

so on their behalf. It seeks to protect its members' health, safety, and lives, as well as the health and safety of the general public and the environment by ensuring that the NRC fulfills its non-discretionary duty under NEPA to complete its analysis of the environmental impacts of spent fuel storage ordered by the U.S. Court of Appeals in *State of New York v. NRC*, Nos. 11-1045, on June 8, 2012.

6. Moreover, as many of the members represented by NC WARN in this proceeding live within fifty miles of Shearon Harris, NC WARN has an interest in this proceeding because of the "obvious potential for offsite consequences" to those members' health and safety.

x _____

Dated: July 9, 2012

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued March 16, 2012 Decided June 8, 2012

No. 11-1045

STATE OF NEW YORK, ET AL.,
PETITIONERS

v.

NUCLEAR REGULATORY COMMISSION AND UNITED STATES OF AMERICA,
RESPONDENTS

STATE OF NEW JERSEY, ET AL.,
INTERVENORS

Consolidated with 11-1051, 11-1056, 11-1057

On Petitions for Review of Orders
of the Nuclear Regulatory Commission

Monica Wagner, Deputy Bureau Chief, Office of the Attorney General for the State of New York, argued the cause for petitioners States and Prairie Island Indian Community Petitioners. With her on the briefs were *Eric T. Schneiderman*, Attorney General, Office of the Attorney General for the State of New York, *John J. Sipos* and *Janice A. Dean*, Assistant Attorneys General, *Barbara D. Underwood*, Solicitor General, *Brian A. Sutherland*, Assistant Solicitor General of Counsel,

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Before: SENTELLE, *Chief Judge*, TATEL and GRIFFITH, *Circuit Judges*.

Opinion for the Court filed by *Chief Judge* SENTELLE.

SENTELLE, *Chief Judge*: Four states, an Indian community, and a number of environmental groups petition this Court for review of a Nuclear Regulatory Commission ("NRC" or "Commission") rulemaking regarding temporary storage and permanent disposal of nuclear waste. We hold that the

rulemaking at issue here constitutes a major federal action necessitating either an environmental impact statement or a finding of no significant environmental impact. We further hold that the Commission's evaluation of the risks of spent nuclear fuel is deficient in two ways: First, 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 cannot be ignored. Second, in determining that spent fuel can safely be stored on site at nuclear plants for sixty years after the expiration of a plant's license, the Commission failed to properly examine future dangers and key consequences. For these reasons, we grant the petitions for review, vacate the Commission's orders, and remand for further proceedings.

I. Background

This is another in the growing line of cases involving the federal government's failure to establish a permanent repository for civilian nuclear waste. *See, e.g.*, *In re Aiken County*, 645 F.3d 428, 430–31 (D.C. Cir. 2011) (recounting prior cases). We address the Commission's recent rulemaking regarding the prospects for permanent disposal of nuclear waste and the environmental effects of temporarily storing such material on site at nuclear plants until a permanent disposal facility is available.

After four to six years of use in a reactor, nuclear fuel rods can no longer efficiently produce energy and are considered "spent nuclear fuel" ("SNF"). Blue Ribbon Commission on America's Nuclear Future, *Report to the Secretary of Energy* 10–11 (2012). Fuel rods are thermally hot when removed from reactors and emit great amounts of radiation—enough to be fatal in minutes to someone in the immediate vicinity. *Id.* Therefore, the rods are transferred to racks within deep, water-filled pools

for cooling and to protect workers from radiation. After the fuel has cooled, it may be transferred to dry storage, which consists of large concrete and steel "casks." Most SNF, however, will remain in spent-fuel pools until a permanent disposal solution is available. *Id.* at 11.

Even though it is no longer useful for nuclear power, SNF poses a dangerous, long-term health and environmental risk. It will remain dangerous "for time spans seemingly beyond human comprehension." *Nuclear Energy Inst., Inc. v. Envtl. Prot. Agency*, 373 F.3d 1251, 1258 (D.C. Cir. 2004) (per curiam). Determining how to dispose of the growing volume of SNF, which may reach 150,000 metric tons by the year 2050, is a serious problem. *See* Blue Ribbon Commission, *supra*, at 14. Yet despite years of "blue ribbon" commissions, congressional hearings, agency reports, and site investigations, the United States has not yet developed a permanent solution. That failure, declared the most recent "blue ribbon" panel, is the "central flaw of the U.S. nuclear waste management program to date." *Id.* at 27. Experts agree that the ultimate solution will be a "geologic repository," in which SNF is stored deep within the earth, protected by a combination of natural and engineered barriers. *Id.* at ix, 29. Twenty years of work on establishing such a repository at Yucca Mountain was recently abandoned when the Department of Energy decided to withdraw its license application for the facility. *Id.* at 3. At this time, there is not even a prospective site for a repository, let alone progress toward the actual construction of one.

Due to the government's failure to establish a final resting place for spent fuel, SNF is currently stored on site at nuclear plants. This type of storage, optimistically labeled "temporary storage," has been used for decades longer than originally anticipated. The delay has required plants to expand storage pools and to pack SNF more densely within them. The lack of

progress on a permanent repository has caused considerable uncertainty regarding the environmental effects of temporary SNF storage and the reasonableness of continuing to license and relicense nuclear reactors.

In this case, petitioners challenge a 2010 update to the NRC's Waste Confidence Decision ("WCD"). The original WCD came as the result of a 1979 decision by this court remanding the Commission's decision to allow the expansion of spent-fuel pools at two nuclear plants. *Minnesota v. NRC*, 602 F.2d 412 (D.C. Cir. 1979). In *Minnesota*, we directed the Commission to consider "whether there is reasonable assurance that an off-site storage solution [for spent fuel] will be available by . . . the expiration of the plants' operating licenses, and if not, whether there is reasonable assurance that the fuel can be stored safely at the sites beyond those dates." *Id.* at 418. The WCD is the Commission's determination of those risks and assurances.

The original WCD was published in 1984 and included five "Waste Confidence Findings." Briefly, those findings declared that: 1) safe disposal in a mined geologic repository is technically feasible, 2) such a repository will be available by 2007–2009, 3) waste will be managed safely until the repository is available, 4) SNF can be stored safely at nuclear plants for at least thirty years beyond the licensed life of each plant, and 5) safe, independent storage will be made available if needed. Waste Confidence Decision, 49 Fed. Reg. 34,658, 34,659–60 (Aug. 31, 1984). The Commission updated the WCD in 1990 to reflect new understandings about waste disposal and to predict the availability of a repository by 2025. *See* Waste Confidence Decision Review, 55 Fed. Reg. 38,474, 38,505 (Sept. 18, 1990). The Commission reviewed the WCD again in 1999 without altering it. *See* Waste Confidence Decision Review: Status, 64 Fed. Reg. 68,005, 68,006–07 (Dec. 6, 1999).

In 2008, the Commission proposed revisions to the Waste Confidence Findings, and, after considering public comments, made revisions in 2010. Waste Confidence Decision Update, 75 Fed. Reg. 81,037 (Dec. 23, 2010). That decision, under review in this case, reaffirmed three of the Waste Confidence Findings and updated two. First, the Commission revised Finding 2, which, as of 1990, expected that a permanent geologic repository would be available in the first quarter of the twenty-first century. As amended, Finding 2 now states that a suitable repository will be available "when necessary," rather than by a date certain. *Id.* at 81,038. In reaching that conclusion, the Commission examined the political and technical obstacles to permanent storage and determined that a permanent repository will be ready by the time the safety of temporary on-site storage can no longer be assured. *Id.*

Finding 4 originally held that SNF could be safely stored at nuclear reactor sites without significant environmental effects for at least thirty years beyond each plant's licensed life, including the license-renewal period. *Id.* at 81,039. In revising that finding, the Commission examined the potential environmental effects from temporary storage, such as leakages from the spent-fuel pools and fires caused by the SNF becoming exposed to the air. Concluding that previous leaks had only a negligible near-term health effect and that recent regulatory enhancements will further reduce the risk of leaks, the Commission determined that leaks do not pose the threat of a significant environmental impact. *Id*. at 81,069–71. The Commission also found that pool fires are sufficiently unlikely as to pose no significant environmental threat. *Id.* at 81,070–71. As amended, Finding 4 now holds that SNF can be safely stored at plants for at least sixty years beyond the licensed life of a plant, instead of thirty. *Id.* at 81,074. In addition, the Commission noted in its final rule that it will be developing a plan for longer-term storage and will conduct a full assessment

of the environmental impact of storage beyond the sixty-year post-license period. *Id.* at 81,040. Based on the revised WCD, the Commission released a new Temporary Storage Rule ("TSR") enacting its conclusions and updating its regulations accordingly. *See* Consideration of Environmental Impacts of Temporary Storage of Spent Fuel after Cessation of Reactor Operation, 75 Fed. Reg. 81,032 (Dec. 23, 2010); 10 C.F.R. § 51.23(a). Petitioners challenge the amended 10 C.F.R. § 51.23(a) based on both Finding 2 and Finding 4.

II. The Commission's Obligations Under NEPA

The National Environmental Policy Act of 1969 ("NEPA"), 42 U.S.C. § 4321 *et seq.*, requires federal agencies such as the Commission to examine and report on the environmental consequences of their actions. NEPA is an "essentially procedural" statute intended to ensure "fully informed and well-considered" decisionmaking, but not necessarily the best decision. *Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 558 (1978). Under NEPA, each federal agency must prepare an Environmental Impact Statement ("EIS") before taking a "major Federal action[] significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). An agency can avoid preparing an EIS, however, if it conducts an Environmental Assessment ("EA") and makes a Finding of No Significant Impact ("FONSI"). *See Sierra Club v. Dep't of Transp.*, 753 F.2d 120, 127 (D.C. Cir. 1985); *see also Theodore Roosevelt Conservation P'ship v. Salazar*, 616 F.3d 497, 503–04 (D.C. Cir. 2010) (explaining NEPA procedures in detail). The issuance or reissuance of a reactor license is a major federal action affecting the quality of the human environment. *See New York v. Nuclear Regulatory Comm'n*, 589 F.3d 551, 553 (2d Cir. 2009).

The parties here dispute whether the WCD itself constitutes a major federal action. To petitioners, the WCD is a major federal action because it is a predicate to every decision to license or relicense a nuclear plant, and the findings made in the WCD are not challengeable at the time a plant seeks licensure. The Commission contends that because the WCD does not authorize the licensing of any nuclear reactor or storage facility, and because a site-specific EIS will be conducted for each facility at the time it seeks licensure, the WCD is not a major federal action. To the Commission, the WCD is simply an answer to this court's mandate in *Minnesota* to ensure that plants are only licensed while the NRC has reasonable assurance that permanent disposal of the resulting waste will be available. The Commission also contends that the WCD constitutes an EA supporting the revision of 10 C.F.R. § 51.23(a), and because the EA found no significant environmental impact, an EIS is not required.

We agree with petitioners that the WCD rulemaking is a major federal action requiring either a FONSI or an EIS. The Commission's contrary argument treating the WCD as separate from the individual licensing decisions it enables fails under controlling precedent.

We have long held that NEPA requires that "environmental issues be considered at every important stage in the decision making process concerning a particular action." *Calvert Cliffs' Coordinating Comm., Inc. v. Atomic Energy Comm'n*, 449 F.2d 1109, 1118 (D.C. Cir. 1971). The WCD makes generic findings that have a preclusive effect in all future licensing decisions—it is a pre-determined "stage" of each licensing decision. NEPA established the Council on Environmental Quality ("CEQ") "with authority to issue regulations interpreting it." *Dep't of Transp. v. Public Citizen*, 541 U.S. 752, 757 (2004). The CEQ has defined major federal actions to include actions with

"[i]ndirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." 40 C.F.R. §§ 1508.8, 1508.18; *Public Citizen*, 541 U.S. at 763; *see also Andrus v. Sierra Club*, 442 U.S. 347, 358 (1979) (holding that the CEQ's NEPA interpretations are entitled to substantial deference); *accord CTIA-Wireless Ass'n v. FCC*, 466 F.3d 105, 115 (D.C. Cir. 2006). It is not only reasonably forseeable but eminently clear that the WCD will be used to enable licensing decisions based on its findings. The Commission and the intervenors contend that the site-specific factors that differ from plant to plant can be challenged at the time of a specific plant's licensing, but the WCD nonetheless renders uncontestable general conclusions about the environmental effects of plant licensure that will apply in every licensing decision. *See* 10 C.F.R. § 51.23(b).

Petitioners' argument continues by suggesting that the WCD lacks an EIS and must be reversed on that basis. Not necessarily. No EIS is required if the agency conducts an EA and issues a FONSI sufficiently explaining why the proposed action will not have a significant environmental impact. *Public Citizen*, 541 U.S. at 757–58. Though we give considerable deference to an agency's decision regarding whether to prepare an EIS, the agency must 1) "accurately identif[y] the relevant environmental concern," 2) take a "hard look at the problem in preparing its EA," 3) make a "convincing case for its finding of no significant impact," and 4) show that even if a significant impact will occur, "changes or safeguards in the project sufficiently reduce the impact to a minimum." *Taxpayers of Michigan Against Casinos v. Norton*, 433 F.3d 852, 861 (D.C. Cir. 2006) (internal quotation omitted). An agency's decision not to prepare an EIS must be set aside if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." *Public Citizen*, 541 U.S. at 763 (quoting 5 U.S.C. § 706(2)(A)).

III. Availability of a Permanent Repository

With these NEPA obligations in mind, we turn to the Commission's conclusion that a permanent repository for SNF will be available "when necessary." In so concluding, the Commission examined the historical difficulty—now measured in decades rather than years—in establishing a permanent facility. *See, e.g.*, Waste Confidence Decision Update, 75 Fed. Reg. at 81,049. Though a number of commenters suggested that the social and political barriers to building a geologic repository are too great to conclude that a facility could be built in any reasonable timeframe, the Commission believes that the lessons learned from the Yucca Mountain program and the Blue Ribbon Commission on America's Nuclear Future will ensure that, through "open and transparent" decisionmaking, a consensus would be reached. *Id.* Further, the Commission noted that the Nuclear Waste Policy Act mandates a repository program, demonstrating the continued commitment and obligation of the federal government to pursue one. The scientific and experiential knowledge of the past decades, the Commission explained, would enable the government to create a suitable repository by the time one is needed. *Id.*

A.

Petitioners argue that the Commission's conclusion regarding permanent storage violates NEPA in two ways: First, it fails to fully account for the significant societal and political barriers that may delay or prevent the opening of a repository. Second, the Commission's conclusion that a permanent repository will be available "when necessary" fails to define the term "necessary" in any meaningful way and does not address the effects of a failure to establish a repository in time. Petitioners further contest the Commission's claim that the WCD constitutes an EA for permanent disposal, let alone the

EIS they contend is required here.

The Commission responds by contending that it "candidly acknowledged" the societal and political challenges, and crafted the WCD to account for those risks. Overcoming political obstacles is not the responsibility of the Commission, it contends, and the NRC's conclusion that institutional obstacles will not prevent a repository from being built is entitled to substantial deference. The Commission contends that the selection of a precise date for Finding 2 is not required by NEPA or any other laws governing the NRC, and the Commission used the "when necessary" formulation as far back as 1977. *See NRDC v. Nuclear Regulatory Comm'n*, 582 F.2d 166, 170, 175 (2d Cir. 1978).

As for examining the environmental effects of failing to establish a repository, the Commission contends that the WCD is an EA supporting the revision of 10 C.F.R. § 51.23(a). No EIS is necessary regarding permanent disposal because, the Commission argues, the WCD is not a major federal action, and conducting an EIS for this issue would be the sort of "abstract exercise" the Supreme Court declined to require in *Baltimore Gas and Electric Company v. NRDC*, 462 U.S. 87, 100 (1983). Further, the Commission's existing "Table S-3" already considers the environmental effects of the nuclear fuel cycle generally and found no significant impacts. Therefore, the Commission believes, no EIS is required.

B.

The Commission's "when necessary" finding is already imperiled by our conclusion that the WCD is a major federal action. We hold that the WCD must be vacated as to its revision to Finding 2 because the WCD fails to properly analyze the environmental effects of its permanent disposal conclusion.

While we share petitioners' considerable skepticism as to whether a permanent facility can be built given the societal and political barriers to selecting a site, we need not resolve whether the Commission adequately considered those barriers. Likewise, we need not decide whether, as the Commission contends, an agency's interpretation of the political landscape surrounding its field of expertise merits deference. Instead, we hold the WCD is defective on far simpler grounds: As we have determined, the WCD is a major federal action because it is used to allow the licensing of nuclear plants. *See supra* Part II. Therefore, the WCD requires an EIS or, alternatively, an EA that concludes with a finding of no significant impact. The Commission did not supply a suitable FONSI here because it did not examine the environmental effects of failing to establish a repository.

Even taking the Commission's word that the WCD constitutes an EA for the permanent storage conclusion, *see* Waste Confidence Decision Update, 75 Fed. Reg. at 81,042, the EA is insufficient because a finding that "reasonable assurance exists that sufficient mined geologic repository capacity will be available when necessary," *id.* at 81,041, does not describe a probability of failure so low as to dismiss the potential consequences of such a failure. Under NEPA, an agency must look at both the probabilities of potentially harmful events and the consequences if those events come to pass. *See, e.g.*, *Carolina Envtl. Study Grp. v. U.S.*, 510 F.2d 796, 799 (D.C. Cir. 1975). An agency may find no significant impact if the probability is so low as to be "remote and speculative," or if the combination of probability and harm is sufficiently minimal. *See, e.g.*, *City of New York v. Dep't of Transp.*, 715 F.2d 732, 738 (2d Cir. 1983) ("The concept of overall risk incorporates the significance of possible adverse consequences discounted by the improbability of their occurrence."). Here, a "reasonable assurance" that permanent storage will be available is a far cry

from finding the likelihood of nonavailability to be "remote and speculative." The Commission failed to examine the environmental consequences of failing to establish a repository when one is needed.

The Commission argues that its "Table S-3" already accounts for the environmental effects of the nuclear fuel cycle and finds no significant impact. Not so. Table S-3, like the Commission itself, presumes the existence of a geologic repository. Therefore, it cannot explain the environmental effects of a failure to secure a permanent facility. The Commission also complains that conducting a full analysis regarding permanent storage would be an "abstract exercise." Perhaps the Commission thinks so because it perceives the required analysis to be of the effects of the permanent repository itself. But we are focused on the effects of a *failure* to secure permanent storage. The Commission apparently has no long-term plan other than hoping for a geologic repository. If the government continues to fail in its quest to establish one, then SNF will seemingly be stored on site at nuclear plants on a permanent basis. The Commission can and must assess the potential environmental effects of such a failure.

IV. Temporary On-Site Storage of SNF

In concluding that SNF can safely be stored in on-site storage pools for a period of sixty years after the end of a plant's life, instead of thirty, the Commission conducted what it purports to be an EA, which found that extending the time for storage would have no significant environmental impact. *See* Waste Confidence Decision Update, 75 Fed. Reg. at 81,074. This analysis was conducted in generic fashion by looking to environmental risks across the board at nuclear plants, rather than by conducting a site-by-site analysis of each specific nuclear plant. Two key risks the Commission examined in its

EA were the risk of environmental harm due to pool leakage and the risk of a fire resulting from the fuel rods becoming exposed to air. *See id.* at 81,069–71. We conclude that the Commission's EA and resulting FONSI are not supported by substantial evidence on the record because the Commission failed to properly examine the risk of leaks in a forward-looking fashion and failed to examine the potential consequences of pool fires.

A.

Petitioners challenge the finding of no significant impact on two bases: First, petitioners argue that a generic analysis is simply inappropriate and that the Commission was required to look at each plant individually. A site-by-site analysis is necessary, petitioners argue, because the risks of leaks and fires are affected by site-specific factors such as pool configuration, leak detection systems, the nature of SNF stored in the pool, and the location of the pool within the plant. Overall, petitioners argue that NEPA requires the Commission to fully analyze the environmental effects of on-site storage, and a generic analysis cannot fulfill that statutory mandate.

Second, petitioners argue that even if generic analysis is appropriate, the Commission's generic EA in this case was insufficient. They maintain that the Commission did not adequately account for leaks from on-site pools because the Commission only looked at past leaks to see if they caused environmental damage, rather than examining the risks of future leaks. Also, as petitioners point out, the Commission's own studies have shown that previous leaks "did, or potentially could, impact ground-water resources relative to established EPA drinking water standards." NRC, *Liquid Radioactive Release Lessons Learned Task Force Final Report* 13 (2006). Petitioners also argue that the Commission's analysis of the

effects of pool fires was deficient because the Commission declined to examine the consequences of pool fires due to the low probability of such an occurrence. In petitioners' view, the Commission could only avoid examining the consequences of pool fires in a full EIS if it found the risk so low as to be "remote and speculative"—a finding the Commission did not make. Finally, Petitioners contend that the Commission completely failed to look at non-health environmental factors such as effects on the Prairie Island Indian Community's homeland, which is located near one of the plants governed by the rule.

The Commission responds by stating that its examination of past leaks properly demonstrated that the potential for environmental harm from leakage is negligible. The Commission argues that the effects of past leaks have been shown to be quite minimal, and the Commission's leakage task force has recommended twenty-six specific measures to minimize the risk even further. Also, the NRC exercises oversight over the pools and will ensure that they do not become unsafe over the sixty-year period. With regard to fires, the Commission contends that it engaged in an "exhaustive consideration" of the risk and found that such an event is extremely unlikely. In the Commission's view, a site-by-site analysis of pool-fire risk is unnecessary because the Commission relied on studies which accounted for all of the variations cited by petitioners and essentially looked at the most dangerous combinations of site-specific factors. Even looking to a worst-case scenario, the Commission says, the risk of fires was still extremely low.

Responding to petitioners' argument that the Commission failed to determine that the risk of fires was "remote and speculative," the Commission suggests that it did not dismiss the risk out of hand as "remote and speculative" but rather examined

it thoroughly and found it to be so low that the consequences could not possibly overcome the low probability. Therefore, the Commission did not need to conduct a full EIS for pool fires. Finally, the Commission argues that petitioners did not raise the issue of non-health impacts during the rulemaking, and thus they cannot raise that issue on petition now.

B.

Both the Supreme Court and this court have endorsed the Commission's longstanding practice of considering environmental issues through general rulemaking in appropriate circumstances. *See, e.g.*, *Baltimore Gas*, 462 U.S. at 100 ("The generic method chosen by the agency is clearly an appropriate method of conducting the hard look required by NEPA."); *see also Minnesota*, 602 F.2d at 416–17. Though *Baltimore Gas* dealt with the nuclear fuel cycle itself, which is generally focused on things that occur outside of individual plants, we see no reason that a comprehensive general analysis would be insufficient to examine on-site risks that are essentially common to all plants. This is particularly true given the Commission's use of conservative bounding assumptions and the opportunity for concerned parties to raise site-specific differences at the time of a specific site's licensing. Nonetheless, whether the analysis is generic or site-by-site, it must be thorough and comprehensive. Even though the Commission's application of its technical expertise demands the "most deferential" treatment by the courts, *Baltimore Gas*, 462 U.S. at 103, we conclude that the Commission has failed to conduct a thorough enough analysis here to merit our deference.

1.

The Commission admits in the WCD Update that there have been "several incidents of groundwater contamination

originating from leaking reactor spent fuel pools and associated structures." 75 Fed. Reg. at 81,070. The Commission brushes away that concern by stating that the past leaks had only a negligible near-term health impact. *Id.* at 81,071. Even setting aside the fact that near-term health effects are not the only type of environmental impacts, the harm from past leaks—without more—tells us very little about the potential for future leaks or the harm such leaks might portend. The WCD Update seeks to extend the period of time for which pools are considered safe for storage; therefore, a proper analysis of the risks would necessarily look *forward* to examine the effects of the additional time in storage, as well as examining 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 factors or even sheer luck. The WCD Update has no analysis of those possibilities other than to say that past leaks had "negligible" near-term health effects. *Id.* A study of the impact of thirty additional years of SNF storage must actually concern itself with the extra years of storage.

The Commission also notes that a taskforce has made recommendations for improvements to spent-fuel pools, which the NRC "has addressed, or is in the process of addressing." *Id.* But those improvements are thus far untested, and we have no way of deferring to the Commission's conclusion that they will ensure the absence of environmental harm. Finally, the Commission refers to its monitoring and regulatory compliance program as a buffer against pool degradation. *Id.* That argument is even less availing because it amounts to a conclusion that leaks will not occur because the NRC is "on duty." With full credit to the Commission's considerable enforcement and inspection efforts, merely pointing to the compliance program is in no way sufficient to support a scientific finding that spent-fuel pools will not cause a significant environment impact during the extended storage

period. This is particularly true when the period of time covered by the Commission's predictions may extend to nearly a century for some facilities.

Despite giving our "most deferential" treatment to the Commission's application of its technical and scientific expertise, we cannot reconcile a finding that past leaks have been harmless with a conclusion that future leaks at all sites will be harmless as well. The Commission's task here was to determine whether the pools could be considered safe for an additional thirty years in the future. That past leaks have not been harmful with respect to groundwater does not speak to whether and how future leaks might occur, and what the effects of those leaks might be. The Commission's analysis of leaks, therefore, was insufficient.

2.

Even though the Commission engaged in a more substantial analysis of fires than it did of leaks, that analysis is plagued by a failure to examine the consequences of pool fires in addition to the probabilities. Petitioners, citing *Limerick Ecology Action, Inc. v. Nuclear Regulatory Commission*, 869 F.2d 719, 739 (3d Cir. 1989), argue that the Commission could only avoid conducting an EIS if it found the risk of fires to be "remote and speculative." The Commission, citing *Carolina Environmental Study Group v. United States*, 510 F.2d at 799, argues that it did not need to examine the consequences of fires because it found the risk of fires to be very low.

We disagree with both parties. As should be clear by this point in our opinion, an agency conducting an EA generally must examine both the probability of a given harm occurring *and* the consequences of that harm if it does occur. Only if the harm in question is so "remote and speculative" as to reduce the

effective probability of its occurrence to zero may the agency dispense with the consequences portion of the analysis. *See Limerick Ecology Action, Inc.*, 869 F.2d at 739. But, contra petitioners, the finding that the probability of a given harm is nonzero does not, by itself, mandate an EIS: after the agency examines the consequences of the harm in proportion to the likelihood of its occurrence, the overall expected harm could still be insignificant and thus could support a FONSI. *See Carolina Envtl. Study Grp.*, 510 F.2d at 799 ("Recognition of the minimal probability of such an event is not equatable with nonrecognition of its consequences."). Here, however, the Commission did not undertake to examine the consequences of pool fires at all. Depending on the weighing of the probability and the consequences, an EIS may or may not be required, and such a determination would merit considerable deference. *C.f.*, *City of New York*, 715 F.2d at 751–52 (deferring to an agency's weighing of a "catastrophic" harm against an "infinitesimal probability"). But unless the risk is "remote and speculative," the Commission must put the weights on both sides of the scale before it can make a determination.

3.

As for petitioners' remaining argument that the Commission did not consider non-health environmental effects, we agree with the Commission that petitioners did not properly raise those issues in the rulemaking. Petitioners essentially present two non-health impacts: decrease in property values and risk of harm to the Prairie Island Indian Community's homeland. The Tribe did mention its small size and close proximity to the Prairie Island Nuclear Generating Plant, but it did not assert specifically how it might be harmed by either the rulemaking itself or the licensing the rulemaking enables. With regard to property values, petitioners point to a study considering the economic impact of the Indian Point plant. But that study actually

assumes a diminution in values caused by current plant operation and simply extends it mathematically—it in no way asserts whether or how any harm to property values might occur nor how that harm is related to a change in the physical environment. Petitioners' failure to raise these objections to the agency waives them. *See Public Citizen*, 541 U.S. at 764. We note, as did the Supreme Court in *Public Citizen*, that primary responsibility for compliance with NEPA lies with the Commission, not petitioners; nonetheless, the non-health effects alluded to here are not "so obvious that there is no need for a commentator to point them out." *Id.* Given, however, that we are invalidating the Commission's conclusions as a whole, petitioners will have the opportunity to properly raise and clarify these concerns on remand.

* * *

Overall, we cannot defer to the Commission's conclusions regarding temporary storage because the Commission did not conduct a sufficient analysis of the environmental risks. In so holding, we do not require, as petitioners would prefer, that the Commission examine each site individually. However, a generic analysis must be forward looking and have enough breadth to support the Commission's conclusions. Furthermore, as NEPA requires, the Commission must conduct a true EA regarding the extension of temporary storage. Such an analysis must, unless it finds the probability of a given risk to be effectively zero, account for the consequences of each risk. On remand, the Commission will have the opportunity to conduct exactly such an analysis.

V. Conclusion

We recognize that the Commission is in a difficult position given the political problems concerning the storage of spent

nuclear fuel. Nonetheless, the Commission's obligations under NEPA require a more thorough analysis than provided for in the WCD Update. We note that the Commission is currently conducting an EIS regarding the environmental impacts of SNF storage beyond the sixty-year post-license period at issue in this case, and some or all of the problems here may be addressed in such a rulemaking. In any event, we grant the petitions for review, vacate the WCD Update and TSR, and remand for further proceedings consistent with this opinion.

So ordered.