UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of	)	
	)	
ENTERGY NUCLEAR GENERATION COMPANY AND ENTERGY NUCLEAR OPERATIONS, INC.	)	Docket No. 50-293-LR
	)	
(Pilgrim Nuclear Generating Station)	)	

NRC STAFF'S ANSWER TO PILGRIM WATCH'S PETITION FOR REVIEW OF MEMORANDUM AND ORDER (DENYING PILGRIM WATCH'S REQUEST FOR HEARING ON A NEW CONTENTION RELATING TO FUKUSHIMA ACCIDENT)

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February 6, 2012

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INTRODUCTION

Pursuant to 10 C.F.R. § 2.341(b)(3), the staff of the U.S. Nuclear Regulatory Commission ("Staff") hereby files its answer in opposition to Pilgrim Watch's ("PW") Petition for Review ("Petition")[1] of the Memorandum and Order of the Atomic Safety and Licensing Board ("Board") (Denying Pilgrim Watch's Request for Hearing on a New Contention Relating to Fukushima Accident) ("LBP-12-01").[2] That order denied admission of a new contention alleging that the Severe Accident Mitigation Alternatives ("SAMA") analysis for Pilgrim is inadequate in light of the accident at the Fukushima Dai-ichi Nuclear Power Plant ("Fukushima"). Because PW has not shown that the Board erred in finding that the new contention did not meet the

[1] Petition for Review of the Memorandum and Order of the Atomic Safety and Licensing Board (Denying Pilgrim Watch's Request for Hearing on a New Contention Relating to Fukushima Accident) (Jan. 26, 2012) (Agencywide Documents and Access Management System ("ADAMS") Accession No. ML12026A079).

[2] *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), LBP-12-01, 75 NRC __ (Jan. 11, 2012) (slip op.) (ADAMS Accession No. ML12011A045).

reopening standard in 10 C.F.R. § 2.326, the timeliness standard in 10 C.F.R. § 2.309(c), and the admissibility standards in 10 C.F.R. § 2.309(f)(1), the Commission should deny the appeal.

PROCEDURAL BACKGROUND

The NRC Staff has thoroughly discussed the procedural background of this case elsewhere and will only highlight the elements of this proceeding that are relevant to the instant appeal.[3] Over five years ago, PW submitted a hearing request on Entergy Generation Company and Entergy Nuclear Operation's ("Entergy" or "Applicant") application for license renewal for the Pilgrim Nuclear Generating Station ("Pilgrim"). In response, the Board admitted two contentions – Contention 1, challenging Entergy's aging management program for buried piping, and Contention 3, challenging Entergy's SAMA analysis.[4] On October 30, 2007, a Board majority granted a motion for summary disposition of Contention 3.[5] On April 10, 2008, the Board held an evidentiary hearing on Contention 1, and shortly thereafter, on June 4, 2008, the Board formally closed the evidentiary record.[6]

On appeal, the Commission reversed the summary disposition of Contention 3 and remanded it to the Board for further proceedings as limited by the Commission's Order.[7] On July 29, 2011, the Board issued a partial initial decision finding in favor of the Applicant on the

[3] NRC Staff's Answer to Pilgrim Watch's Petition for Review of Memorandum and Order (Denying Pilgrim Watch's Requests for Hearing on New Contentions Relating to Fukushima Accident), at 2-5 (Oct. 3, 2011) (ADAMS Accession No. ML11276A191) ("Staff Answer to Appeal of LBP-11-23").

[4] *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), LBP-06-23, 64 NRC 257, 348-49 (2006).

[5] *Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), LBP-07-13, 66 NRC 131 (2007).

[6] Memorandum and Order (Ruling on Pilgrim Watch Motions Regarding Testimony and Proposed Additional Evidence Relating to Pilgrim Watch Contention 1), at 3 (June 4, 2008) (ADAMS Accession No. ML081560375) ("June 4, 2008, Order").

[7] *Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), CLI-10-11, 71 NRC 287, 317 (2010).

remanded Contention 3.[8] The Board's decision on remanded Contention 3 is currently pending before the Commission on a petition for review filed by PW.[9] Since that time, PW filed several new contentions before the Board, the Board has ruled on all of those contentions, and all of those rulings are currently pending before the Commission on appeal.[10]

On November 18, 2011, PW filed the hearing request and proposed new contention ("Aqueous Diffusion Contention") that is the subject of this particular appeal before the Commission.[11] That contention alleged,

> Based on new and significant information from Fukushima, the Environmental Report is inadequate post Fukushima Daiichi. Entergy's SAMA analysis ignores new and significant issues raised by Fukushima regarding the probability of both containment failure, and subsequent larger off-site consequences due, in part, to the need for flooding the reactor (vessel, containment, pool) with huge amounts of water in a severe accident, as at Fukushima. [12]

In addition, the Aqueous Diffusion Contention quotes a paper to the Commission from the NRC Staff ("SECY-11-0089"):

> "An important limitation of the MACCS2 code [relied on for SAMA analyses] is that it does not currently model and analyze aqueous transport and dispersion of radioactive materials through the subsurface water, sediment, soils, and groundwater. As demonstrated by the recent events in Japan, certain accident scenarios can result in large volumes of contaminated water being generated by emergency measures to cool the reactor cores and [spent fuel pools], with yet to be determined offsite radiological consequences. To determine the relative risk significance of these types of scenarios, [a SAMA analysis] must [(model and analyze)] the aqueous transport and dispersion of radioactive materials."[13]

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[8] *See generally Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.* (Pilgrim Nuclear Power Station), LBP-11-18, 74 NRC __ (July 19, 2011) (slip op.).

[9] Pilgrim Watch Request for Review of the Partial Initial Decision (Rejecting Upon Remand Pilgrim Watch's Challenge To Meteorological Modeling In SAMA Analysis in Entergy's License Renewal Application (July 19, 2011) (ADAMS Accession No. ML11215A133)

[10] Staff Answer to Appeal of LBP-11-23 at 3-5.

[11] Pilgrim Watch Request for Hearing on a New Contention Regarding Inadequacy of Environmental Report, Post Fukushima (Nov. 18, 2011) (ADAMS Accession No. ML11322A080) ("Aqueous Diffusion Contention").

[12] *Id*. at 1-2.

[13] *Id*. (quoting SECY-11-0089, Options for Proceeding With Future Level 3 Probabilistic Risk Assessment Activities, Attachment 1, at 29 (July 7, 2011) (ADAMS Accession No. ML11090A042))

A majority of the Board determined that the Aqueous Diffusion Contention was not admissible because it did not meet the reopening standard in 10 C.F.R. § 2.326, the standard for non-timely contentions in § 2.309(c), and the normal contention admissibility standard in § 2.309(f)(1).[14] Judge Young dissented and found that the contention met all of those requirements.[15] PW filed a timely appeal.[16] For the reasons discussed below, the Commission should deny that appeal.

ARGUMENT

I. Legal Standards

A. The Standard for Review of a Board Decision

The procedural regulations at 10 C.F.R. § 2.341(a)(1) govern PW's petition for review. Subsection (b)(4) provides that the Commission may grant a petition for review "giving due weight to the existence of a substantial question" with respect to one or more of the following considerations:

> (1) a clearly erroneous finding of fact;
>
> (2) a necessary legal conclusion is without precedent or conflicts with existing law;
>
> (3) the appeal raises a substantial and important question of law or policy;
>
> (4) the proceeding involved a prejudicial procedural error; or
>
> (5) any other consideration the Commission determines to be in the public interest.[17]

("SECY-11-0089") (fourth alteration in original)).

[14] LBP-12-01 at 19, 27.

[15] *Id*. at 1 (Young, J., dissenting).

[16] Petition.

[17] 10 C.F.R. § 2.341(b)(4).

The Commission has stated that the standard regarding "clear error" is quite high, requiring a showing that the Board's findings are "not even plausible in light of the record viewed in its entirety."[18] The Commission defers to a licensing board's findings of fact as long as the "Licensing Board has issued a plausible decision that rests on carefully rendered findings of fact[.]"[19] Thus, the Commission will reject or modify a Licensing Board's findings only if, after accounting for appropriate deference to the "primary fact finder," the Commission is "convinced that the record *compels* a different result."[20] The Commission will not overturn a board's findings simply because it might have reached a different result or because the record could support a view different from that of the board.[21] With respect to a board's conclusions of law, a petitioner must show an "error of law or abuse of discretion" by the board.[22] The Commission will reverse a board's legal conclusions only "if they are a departure from or contrary to established law."[23] As explained more fully below, PW has failed to demonstrate that the Board's factual findings are clearly erroneous or that the Board's legal conclusions depart from or are contrary to established law. Therefore, PW has not met its burden under 10 C.F.R. § 2.341(b)(4), and its petition for review should be denied.

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[18] *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-03-8, 58 NRC 11, 25-26 (2003) ("PFS") (*citing Anderson v. Bessemer City*, 470 U.S. 564, 573-76 (1985)).

[19] *Id.*

[20] *General Public Utilities* (Three Mile Island Nuclear Station, Unit No. 1) ALAB-881, 26 NRC 465, 473 (1987)(*citing Niagara Mohawk Power Corp.* (Nine Mile Point Nuclear Station, Unit 2), ALAB–264, 1 NRC 347, 357 (1975)) (emphasis added).

[21] *See Tennessee Valley Authority* (Watts Bar Nuclear Plant, Unit 1; Sequoyah Plants, Units 1 & 2; Browns Ferry Nuclear Plant, Units 1, 2 & 3), CLI-04-24, 60 NRC 160, 189 (2004) ("TVA"); *PFS*, CLI-03-8, 58 NRC at 26 (*quoting Kenneth G. Pierce* (Shorewood, Illinois), CLI-95-6, 41 NRC 381, 382 (1995)).

[22] *USEC, Inc*. (American Centrifuge Plant), CLI-06-9, 63 NRC 433, 439 n.32 (2006).

[23] *TVA*, CLI-04-24, 60 NRC at 190 (internal quotations omitted).

B. The Standard for Reopening the Record

Once the record is closed, it will not be reopened except upon a strong, well-supported showing of singular circumstances. Accordingly, the regulations provide that a motion to re-open the record will not be granted unless it satisfies the following three criteria:

> (1) The motion must be timely, except that an exceptionally grave issue may be considered in the discretion of the presiding officer even if untimely presented;
>
> (2) The motion must address a significant safety or environmental issue; and
>
> (3) The motion must demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially.[24]

The motion must be accompanied by an affidavit that provides the factual and/or technical bases for the movant's claim that the three criteria in 10 C.F.R. § 2.326(a) are satisfied.[25] The evidence supporting the motion must satisfy the Commission's admissibility standards in 10 C.F.R. § 2.337(a); it must be "relevant, material, and reliable."[26] Moreover, "the moving papers must be strong enough, in the light of any opposing filings, to avoid summary disposition."[27] In addition, 10 C.F.R. § 2.326(d) expressly states that where the contention raises an issue not previously in controversy, the contention must satisfy the requirements for admission of nontimely contentions at 10 C.F.R. § 2.309(c). Finally, the contention must meet the general admissibility requirements in 10 C.F.R. § 2.309(f).

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[24] 10 C.F.R. § 2.326(a); *Amergen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-08-28, 68 NRC 658, 668 (2008).

[25] 10 C.F.R. § 2.326(b).

[26] *Amergen Energy Co., LLC* (Oyster Creek Nuclear Generating Station), CLI-08-12, 68 NRC 5, 16 (2008).

[27] *Private Fuel Storage, LLC* (Independent Spent Fuel Storage Installation), CLI-05-12, 61 NRC 345, 350 (2005).

II. The Board Properly Applied the Reopening Standard to the Aqueous Diffusion Contention

As it has throughout this proceeding, PW maintains that its new contentions, including the Aqueous Diffusion Contention, are not subject to the reopening standard in 10 C.F.R. § 2.326.[28] But, the Board properly determined that the Aqueous Diffusion Contention must satisfy the reopening standard in 10 C.F.R. § 2.326.[29] The Commission's regulations and case law clearly require a contention raising a genuinely new issue to meet the reopening standard if the record has closed.[30] On June 24, 2008, the Board closed the record in this proceeding with respect to the last pending contention.[31] As a result, the record in this proceeding plainly closed at that time because nothing remained for the Board to adjudicate.[32] Moreover, the subsequent remand did not reopen the record.[33] PW filed the Aqueous Diffusion Contention on November 18, 2011, and has argued that it raises a genuinely new issue.[34] Consequently, the Board's

[28] PW claims that the reopening standard does not apply to any of its previous contentions filed after the Board closed the record. Petition at 21. Moreover, PW declines to "repeat (but does hereby incorporate by reference) what it has already said on this subject in previous Petitions for Review." *Id*. In its responses to those petitions, the Staff has already thoroughly discussed the applicability of the reopening standard and answered PW's arguments. *E.g.* Staff Answer to Appeal of LBP-11-23 at 8-11.

[29] LBP-12-01 at 3-4.

[30] 10 C.F.R. § 2.326(d) ("A motion to reopen which relates to a contention not previously in controversy among the parties must also [in addition to meeting the requirements of § 2.326] satisfy the requirements for nontimely contentions in § 2.309(c)."); *Entergy Nuclear Vermont Yankee, L.L.C. and Entergy Nuclear Operations, Inc*. (Vermont Yankee Nuclear Power Station), CLI-10-17, 72 NRC 1, 10-11 n. 37 (2010) (noting that while a contention was pending before a board on remand, the intervenors were "free to submit a motion to reopen the record pursuant to 10 C.F.R. § 2.326, should they seek to address any *genuinely new* issues") (emphasis in original). *See also New Jersey Environmental Federation v. NRC*, 645 F.3d 220, 232-34 (3d Cir. 2011).

[31] June 4, 2008, Order at 3-4.

[32] *See Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant, Units 3 and 4), CLI-11-08, 74 NRC __, __ (Sep. 27, 2011) (slip op. at 18 n.65) (ADAMS Accession No. ML11270A032) (finding that when "the contested portion of the proceeding was closed" "[t]here was, therefore, no proceeding in which to file a new or amended contention," and as a result any hearing request constituted "a new intervention petition subject to 10 C.F.R. §§ 2.326, 2.309(c)(1), and 2.309(f)(1)").

[33] *Vermont Yankee*, CLI-10-17, 72 NRC at 10-11 n.37.

[34] Aqueous Diffusion Contention, at 2.

application of the reopening standard to that contention is consistent with the Commission's regulations and precedent because PW filed the Contention over three years after the record closed and the contention seeks to litigate a new issue.

III. Timeliness

Under 10 C.F.R. § 2.326(a)(1), a motion to reopen the record "must be timely." Under Commission precedent, a petitioner has an "ironclad obligation to examine the publicly available documentary material pertaining to the facility in question with sufficient care to enable it to uncover any information that could serve as the foundation for a specific contention."[35] "There simply would be no end to NRC licensing proceedings if petitioners could disregard our timeliness requirements and add new contentions at their convenience during the course of a proceeding based on information that could have formed the basis for a timely contention at the outset of the proceeding."[36] Petitioners cannot wait to file a contention "until a document becomes available that collects, summarizes and places into context the facts supporting that contention."[37] Rather, the Commission has held that a board order allowing a petitioner "to wait for the Staff to compile all relevant information in a single document [ignored the petitioner's] obligation to conduct its own due diligence."[38] Finally, under NRC practice, "Boards have typically found new contentions to be timely when filed within thirty days of the date that asserted foundational information becomes available."[39]

In light of the foregoing precedent, the Board correctly determined that the Aqueous

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[35] *Sacramento Municipal Utility District* (Ranco Seco Nuclear Generating Station), CLI-93-3, 37 NRC 135, 147 (1993) (quotations omitted).

[36] *Amergen Energy Company, LLC* (Oyster Creek Nuclear Generating Station), CLI-09-7, 69 NRC 235, 272 (2009).

[37] *Northern States Power Co.* (Prairie Island Nuclear Generating Plant, Units 1 and 2), CLI-10-27, 72 NRC __, __ (Sep. 30, 2010) (slip op. at 17) (ADAMS Accession No. ML102730779).

[38] *Id*. at 18.

[39] LBP-12-01 at 13 (*citing Southern Nuclear Operating Co.* (Vogtle Electric Generating Plant Units 3 and 4), CLI-11-08, 74 NRC __, __ (Sept. 27, 2011) (slip op. at 3 & n.8).

Diffusion Contention was not timely raised because, contrary to PW's claims, the information upon which it relied was not new.[40] The Board advanced three reasons to support its determination. First, the Board found "information has been widely available since the early stages of the Fukushima accidents that Tokyo Electric Power Company (TEPCO) attempted to add additional water to the cores and spent fuel pools of several of its units."[41] Specifically, the Board noted that PW included news articles and photographs in the Aqueous Diffusion Contention "from April 2011 that reference water being injected into and exiting from the Fukushima reactors."[42] Second, the Board noted that the MACCS2 Code's inability to model aqueous diffusion has "has been present for decades and Pilgrim Watch cannot reasonably assert that it has just now learned of those limitations, given that it has had access to an expert in that code (Mr. David Chanin)."[43] Finally, the Board noted that SECY-11-0089 "does nothing more than compile previously available information."[44] Therefore, the Board reasonably found that the Aqueous Diffusion Contention was untimely because it was based on news reports regarding the Fukushima accident that were six months old, features of the MACCS2 Code that have been present since the outset of this case, and a Staff document that compiled previously available information.[45]

PW's claims that the Board erred are unpersuasive. First, PW alleges that the information in SECY-11-0089 was not actually previously available because "what is important is not simply that there are limitations in the MACCS2 code; rather it is why a particular limitation

[40] LBP-12-01 at 12-13.

[41] *Id*. at 12.

[42] *Id*.

[43] *Id*. at 13.

[44] *Id*.

[45] PW filed a comment similar to the Aqueous Diffusion Contention on the Seabrook draft EIS nearly a month before it filed this contention. Comment 16 on Seabrook NUREG-1437, Supplement 46, Section 5.0 at 11 (Oct. 26, 2011) (ADAMS Accession No. ML11304A243).

is important."[46] Essentially, PW claims that the NRC Staff's assessment of the impact of the Fukushima event on the MACCS2 code constituted new information for purposes of filing a contention.[47] But, this argument relies on the Staff's analysis of existing information to demonstrate timeliness. As a result, it contravenes Commission precedent holding that a petitioner may not wait to file a new contention until the Staff "places into context the facts supporting that contention."[48] Therefore, despite PW's claims, the Board complied with Commission precedent in finding that SECY-11-0089 did not constitute new information because the portions of that document on which PW relies simply summarized and evaluated existing information.

Second, PW argues that the MACCS2 Code's limitations were not obvious from the outset of this proceeding. According to PW, no publically available information showed that the MACCS2 Code was incapable of modeling aqueous releases.[49] However, in rejecting PW's claim, the Board cited the Applicant's testimony which summarized the existing literature on the MACCS2 Code.[50] Those documents clearly indicated that the " 'principal phenomena considered [by the MACCS2 Code] are atmospheric transport and deposition.' "[51] Moreover, the

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[46] Petition at 10.

[47] Specifically, PW claims that SECY-11-0089 was the first public document that indicated "Fukushima *demonstrated* that 'emergency measures to cool the reactor cores' could 'result in large volumes of contaminated water . . . with yet to be determined offsite consequences." *Id*. at 9 (quoting SECY-11-0089). PW also asserts that SECY-11-0089 was the first public document to claim that " 'a level 3 PRA must be capable of modeling and analyzing the aqueous transport and dispersion of radioactive materials through surface water, sediments, soils, and groundwater.' " *Id*. at 9-10 (quoting SECY-11-0089).

[48] *Prairie Island*, CLI-10-27, 72 NRC __, __ (slip op. at 17).

[49] Petition at 10.

[50] LBP-12-01 at 13 & n. 49 (citing Declaration of Mr. Joseph R. Lynch and Dr. Kevin R. O'Kula in Support of Entergy's Answer Opposing Pilgrim Watch Request for Hearing on a New Contention Regarding Inadequacy of Environmental Report, Post-Fukushima, at ¶ 15-22 (Dec. 13, 2011) (ADAMS Accession No. ML11347A456) ("Entergy Declaration")).

[51] Entergy Declaration at ¶ 17 (quoting NUREG/CR-6613, Code Manual for MACCS2, User's Guide, Vol. 1, at iii (May 1998) (ADAMS Accession No. ML063550020)).

Board noted that "Pilgrim Watch cannot reasonably assert that it has just now learned of those limitations, given that it has had access to an expert in that code (Mr. David Chanin) who served as an expert regarding several previous contentions."[52] In response, PW argues "even if Mr. Chanin could have told PW that the code did not model *aqueous* releases, that would not show that the information on which PW based its Request for Hearing was not new and important."[53] But, if Mr. Chanin "could have told" PW about this limitation in the MACCS2 Code, then it would be the type of information that was reasonably available to the public. Under Commission precedent, such information is, by definition, not new.[54]

Last, although PW concedes that early news coverage of the Fukushima accident showed that TEPCO injected large quantities of water to cool reactors and spent fuel pools, PW asserts that "information to support this contention has only recently become available following months and months of cover-ups by" TEPCO.[55] But, PW does not demonstrate how the alleged TEPCO cover-up prevented it from timely filing the Aqueous Diffusion Contention, which is based on TEPCO's response to the accident.[56] Instead, as the Board pointed out, PW actually relied on articles and photographs from April 2011 in the Aqueous Diffusion Contention. These sources showed that TEPCO employed a "feed and bleed" response to manage the unfolding

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[52] LBP-12-01 at 13.

[53] Petition at 10.

[54] *See Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Unit 3), CLI-09-5, 69 NRC 115, 126 (2009) ("To show good cause, a petitioner must show that the information on which the new contention is based was not *reasonably available to the public,* not merely that the *petitioner* recently found out about it.").

[55] Petition at 11.

[56] *Id*. Although the Petition cites the Gunderson declaration for this point, that declaration does not provide any additional explanation for how the alleged cover-up prevented PW from filing a timely contention based on the possibility of a "feed and bleed" accident response. Declaration of Arnold Gunderson Supporting a Request by Pilgrim Watch for a New Contention Hearing Regarding the Inadequacy of Pilgrim Station's Environmental Report, Post Fukushima, ¶ 21 (Nov. 18, 2011) (ADAMS Accession No. ML11322A080).

accident at Fukushima.[57] Consequently, the Board reasonably determined that sufficient information existed by May 2011 to file the contention, regardless any alleged cover-up on TEPCO's part.[58]

Therefore, PW has not demonstrated how the Board erred in finding that the Aqueous Diffusion Contention did not meet the timeliness requirements of 2.326(a)(1).[59] Rather, the Board correctly applied Commission precedent to determine that the contention was not timely in light of the length of time the supporting information had been available.[60]

In addition, under 10 C.F.R. § 2.326(d), an untimely motion to reopen must also satisfy the requirements of 10 C.F.R. § 2.309(c). That section contains eight factors, the most important of which is the first, "good cause."[61] "Good cause has long been interpreted to mean that the information on which the proposed new contention is based was not previously available."[62] Because PW did not show that it based the Aqueous Diffusion Contention on new information, it did not show good cause. PW must therefore make a "compelling showing with respect to" the remaining factors in §2.309(c) under Commission precedent.[63] But, the Board found that the contention did not satisfy factor 2.309(c)(vii) because admitting the contention would broaden the issues and cause a material delay in the proceeding.[64] Because PW did not

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[57] LBP-12-01 at 12.

[58] *Id*. at 12.

[59] PW also claims that the Board improperly ignored "the fact that although Pilgrim's site specific Severe Accident Mitigation Guidelines (SAMGs) are highly relevant, they remain unavailable to the public." Petition at 10. Of course, PW ultimately filed the contention without access to SAMG's, and PW has not explained how the unavailability of the SAMG's prevented it from timely filing the Aqueous Diffusion Contention.

[60] LBP-12-01 at 13.

[61] *Millstone*, CLI-09-5, 69 NRC at 125-26.

[62] *Id.*

[63] *Commonwealth Edison Company* (Braidwood Nuclear Power Station, Units 1 and 2), CLI-86-8, 23 NRC 241, 244 (1986).

make a compelling showing with respect to the remaining factors, the Board properly determined the Aqueous Diffusion Contention did not meet the requirements for filing a non-timely contention under § 2.309(c).[65]

On appeal, PW contends that the broaden or delay factor only includes the delay attributable to the lateness of the petition.[66] Because PW contends that the contention was not tardy, PW argues that whether it will add issues or delay the proceeding is "irrelevant."[67] Regardless of whether PW has identified the correct legal standard for interpreting § 2.309(c)(vii),[68] PW's argument clearly fails because, as discussed above, PW did not timely file the Aqueous Diffusion Contention. Consequently, PW has not shown that the Board incorrectly determined that the Contention was also untimely under § 2.309(c).

IV. Exceptionally Grave Issue

Where a motion to reopen is untimely, the standards for a motion to reopen provide a limited exception in cases that raise "an exceptionally grave issue" to be considered at the discretion of the presiding officer.[69] The Board found the Aqueous Diffusion Contention untimely and that it did not raise "an exceptionally grave issue" sufficient to satisfy the standard for this exception.[70] The Board noted that the Commission defines an exceptionally grave issue as

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[64] LBP-12-01 at 19.

[65] *Id*.

[66] Petition at 23 (citing *Long Island Lighting Company* (Jamesport Nuclear Power Station, Units 1 and 2), ALAB-292, 2 NRC 631, 650 n. 26 (1975) (Opinion of Mr. Rosenthal).

[67] *Id*.

[68] *See Vogtle*, CLI-11-08, 74 NRC __, slip op. at 18 (ADAMS Accession No. ML11270A032) ("Moreover, the introduction of a new contention, well after the contested proceeding closed, would broaden the issues and delay the proceeding.").

[69] 10 C.F.R. § 2.326; LBP-12-01 at 14.

[70] LBP-12-01 at 14-16.

"one which raises 'a sufficiently grave threat to public safety,' "[71] and the Commission has stated that it "anticipates that this exception will be granted rarely and only in truly extraordinary circumstances."[72]

The Board held that the Aqueous Diffusion Contention, which only speculated as to the possibility of a SAMA becoming cost-effective, "does not establish that there is an exceptionally grave issue for the Pilgrim plant."[73] As the Board points out, the Aqueous Diffusion Contention "merely seeks a revision of Entergy's SAMA analysis that may or may not result in other SAMAs becoming cost-effective, which, in turn, may or may not help to mitigate some highly unlikely future severe accident" and "does not raise any particularized threat to public safety at the Pilgrim plant."[74] Additionally, the Board found that any grave issue "in this proceeding . . . must relate to the Pilgrim plant directly—not by speculation."[75] Moreover, the Board correctly noted that the "Commission has concluded that the events of Fukushima do not present a sufficiently grave threat to public safety such that reactor licensing proceedings should be suspended."[76]

On appeal, PW alleges that the Board was "simply wrong" in concluding that because the contention "does not 'relate to the Pilgrim plant directly,'" the proposed contention did not meet the standard for raising an "exceptionally grave issue."[77] PW selectively quotes the Board

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[71] LBP-12-01 at 14 (quoting Criteria for Reopening Records in Formal Licensing Proceedings, 51 Fed. Reg. 19,535, 19536 (May 30, 1986)).

[72] 51 Fed. Reg. at 19536.

[73] LBP-12-01 at 15.

[74] LBP-12-01 at 15. On this point, the dissent noted, "the issues raised by Pilgrim Watch in the new contention appear to me to be exceptionally grave," because "if there were an accident at the Pilgrim Plant with consequences including releases of contaminated water, the results would be catastrophic." LBP-12-01 (J., Young dissenting at 4; 11).

[75] LBP-12-01 at 15.

[76] LBP-12-01, at 15 n. 59 (citing *Union Elec. Co. d/b/a Ameren Missouri* (Callaway Plant, Unit 2), CLI-11-05, 74 NRC __, __ (slip op. at 27) (Sep. 9, 2011) (ADAMS Accession No. ML11252A795)).

[77] Petition at 12-13.

to argue that the Aqueous Diffusion Contention was sufficiently linked to Pilgrim. PW contends that because the proximate cause of the Fukushima accident was station blackout,[78] not a beyond-design basis earthquake and tsunami, the Fukushima accident has direct relevance to Pilgrim.[79] However, the point the Board made was not that a plant will only lose power if an earthquake or tsunami occurs. Rather, the Board's finding, and supporting citations, established that the particular accident scenario, the combination of a beyond-design-basis earthquake followed by a beyond-design-basis tsunami, that happened at Fukushima both created the station blackout and impeded any resolution of that blackout.[80] The Board correctly found that PW did not provide information beyond speculation to show that such an accident scenario could happen at Pilgrim. Such speculation is insufficient to "call into question the licensed activity" or demonstrate any "grave threat to the public safety respecting the Pilgrim plant."[81] Certainly, such speculation cannot constitute the rare and "truly extraordinary circumstances" the Commission has indicated would constitute an "exceptionally grave issue" jeopardizing public safety.[82]

V. Significance

Under 10 C.F.R. § 2.326(a)(2), a motion to reopen "must address a significant safety or environmental issue." The Commission recently explained, "when a motion to reopen is untimely, the § 2.326(a)(1) 'exceptionally grave' test supplants the § 2.326(a)(2) 'significant safety or environmental issue' test."[83] As discussed above, the Aqueous Diffusion Contention was untimely and did not raise an exceptionally grave issue. Therefore, the contention failed to

[78] 10 C.F.R. § 50.2 (defining station blackout).

[79] Petition at 6.

[80] LBP-12-01 at 14 (citing Entergy Declaration at ¶ 65, 66).

[81] *Id*. at 16.

[82] 51 Fed. Reg. at 19536.

[83] *Vogtle*, CLI-11-08,74 NRC __, slip op. at 14 n.44.

meet the standards of § 2.326(a)(2). Nonetheless, the Board also considered whether the Aqueous Diffusion Contention raised a significant safety or environmental issue and determined that it did not under Commission precedent.[84]

The Board correctly noted that "the Commission has expressed the standard for when an environmental issue is 'significant' for the purposes of reopening a closed record, equating it to the standards for when an environmental impact statement is required to be supplemented – there must be new and significant information which will 'paint a *seriously* different picture of the environmental landscape.' "[85] Under this standard, an issue is significant "when it raises a previously unknown environmental concern, but not necessarily when it amounts to mere additional evidence supporting one side or the other of a disputed environmental effect."[86] Consequently, the Board held that the Aqueous Diffusion Contention did not meet this standard because PW did not identify any environmental impact that may arise from revising the SAMA analysis.[87] Moreover, the Board determined that "speculation" from PW that other SAMAs may be cost effective in light of the Aqueous Diffusion Contention cannot suffice to show that the contention raises a significant issue.[88]

On appeal, PW challenges the Board's determination that the Aqueous Diffusion Contention did not paint a seriously different picture of the environmental consequences of renewing the Pilgrim operating license.[89] Specifically, PW argued that the Aqueous Diffusion Contention met that standard because it described a scenario in which "millions of gallons of

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[84] LBP-12-01 at 13-16.

[85] *Id*. at 14 (quoting *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-06-03, 63 NRC 19, 28 (2006)).

[86] *PFS*, CLI-06-03, 63 NRC at 29.

[87] LBP-12-01 at 15.

[88] *Id*.

[89] Petition at 12.

radioactive water flows into [the Cape Cod Bay and adjacent waters] and potentially destroys a $ 14.8 million dollar economy."[90] While PW identified the significant absolute consequences that could follow from a severe accident at Pilgrim, the Aqueous Diffusion Contention is a challenge to the SAMA analysis. That analysis considers whether any additional mitigation measures could be cost-beneficial in light of the probabilistically-weighted consequences of a severe accident.[91] Thus, the Board correctly noted that without some discussion of how this information impacts the results of that analysis, PW's claim amounts to speculation.[92] Moreover, the Board also relied on Entergy's answer to the Aqueous Diffusion Contention, which established that the Pilgrim SAMA analysis already considered "large atmospheric releases of radioactive material far greater than the total releases from the three damaged Fukushima reactors."[93] Additionally, the Aqueous Diffusion Contention only constitutes evidence supporting one side of an already considered environmental impact because it challenges whether some SAMA candidates might be more beneficial than previously thought in light of aqueous releases during a severe accident.[94] Consequently, PW has not shown that the Board erred in determining that the Aqueous Diffusion Contention did not provide a seriously different picture of the environmental consequences of the proposed action.

On a related note, PW argues that the Supreme Court's holding in *Marsh v. Oregon Natural Resources Council* requires the NRC to consider the Aqueous Diffusion Contention under the National Environmental Policy Act ("NEPA") before acting on the Pilgrim license

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[90] *Id*.

[91] *Pilgrim*, CLI-10-11, 71 NRC at 291.

[92] LBP 12-01 at 15

[93] LBP-12-01 at 15-16 (citing Entergy's Answer Opposing Pilgrim Watch Request for Hearing on a New Contention Regarding Inadequacy of Environmental Report, Post-Fukushima, at 22-23 (Dec. 13, 2011) (ADAMS Accession ML11347A457) (citing Entergy Affidavit at ¶ 41-50, 53-60).

[94] *PFS*, CLI-06-03, 63 NRC at 29.

renewal application.[95] That case held that when new information indicates that a federal action "will affect the quality of the human environment in a significant manner or to a significant extent not already considered, a supplemental EIS must be prepared."[96] But, as demonstrated above, the Commission's standard for supplementing an EIS is the same as the standard for assessing the significance of environmental information under the reopening standard.[97] Both tests require the agency to determine whether new information would "paint a *seriously* different picture of the environmental landscape."[98] Consequently, for the reasons the Board stated, the agency has met the requirements of *Marsh* because the NRC has already evaluated whether the Aqueous Diffusion Contention provided a seriously different picture of the impacts of relicensing and determined that it did not.[99]

Moreover, the Board noted that PW did not provide any information that showed a link between the Fukushima accident and the environmental impact of renewing the Pilgrim operating license.[100] Consequently, the Board determined that "there is no environmental effect to be examined under NEPA."[101] PW vigorously disputes the Board's conclusion that the Aqueous Diffusion Contention did not "link" the events at Pilgrim to Fukushima.[102] But, PW's arguments focus on similarities between the reactors and their locations, not how the information from the Fukushima accident scenario impacts or applies to the SAMA analysis for

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[95] Petition at 18-19 (*quoting Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 374 (1989)); 42 USC § 4321.

[96] *Marsh*, 490 U.S. at 374 (quotations omitted).

[97] *PFS*, CLI-06-03, 63 NRC at 29.

[98] *Id*.

[99] LBP-12-01 at 14-16, 22-27.

[100] LBP-12-01 at 23.

[101] *Id*.

[102] Petition at 4-9.

Pilgrim, which was the issue before the Board.[103] Consequently, PW has not shown that the Board erred in reaching its conclusions.

Additionally, PW has not provided specific information from the Fukushima accident that significantly alters the NRC's previous analyses of severe accidents. The Board stated, "[a]s the Commission has noted . . . there is simply insufficient information available at this time from Fukushima" to constitute new and significant information.[104] PW has not provided sufficient information regarding the Fukushima accident to challenge that conclusion over the course of this proceeding. Consequently, the NRC's review of the Pilgrim license renewal application fully complies with NEPA and *Marsh*.

VI. Materially Different Result

Applying the reopening standards, the Board found that PW did not "demonstrate that a materially different result would be or would have been likely had the newly proffered evidence been considered initially" as required by 10 C.F.R. § 2.326(a)(3).[105] As the Board notes, the "'result' at issue in this proceeding is the outcome of the SAMA analysis" and PW did not offer any evidence that would show a change in that analysis.[106] As the Board held, a party may not rely on speculation and assertion to "demonstrate" the likelihood of a different result in the context of the reopening standards.[107] The Board found that PW must show that there would be some change in the mean consequences of the severe accident scenarios as a result of the information provided in its contention and at least "some minimal information as to the costs of implementation of other SAMAs it believes might become cost effective" in order to

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[103] LBP-12-01 at 15-16.

[104] *Id*. at 23 n. 82 (*citing Callaway*, CLI-11-05, 74 NRC at __ (slip op. at 40)).

[105] *Id*. at 16.

[106] *Id*.

[107] *Id*. at 17.

"demonstrate a materially different result" for the SAMA analyses.[108]

PW alleges that it "is not obligated to perform a complete and new SAMA analysis or comprehensive review of potential mitigation measures as a prerequisite to presenting a new contention."[109] For these statements, PW cites to NRC and federal case law for the proposition that it does not have to put forth that type of information to meet the contention admissibility standards for environmental contentions.[110] But those cases address contentions in ongoing proceedings or petitions to intervene and do not address the context of a motion to reopen a closed proceeding, such as the case here. Unlike the contention admissibility standards, the motion to reopen requirement places a "deliberately heavy burden" on a petitioner to justify reopening a closed case.[111] Moreover, the requirement to "demonstrate a materially different result would be likely" in 10 C.F.R. § 2.326(b) demands expert support in the form of affidavits where none is required by the regulations at the contention admissibility stage.[112]

PW also contends that "the Majority overlooks that PW *did* show that the costs against which potential SAMAs could be measured far exceeded the costs of the SAMAs that Entergy identified in its application."[113] PW alleges that "Judge Young's Dissent (10, fn 31) did the math," by saying that "[i]f one were 'conservatively to assume that, for example only one tenth of the whole maritime economy would be affected,' valued by the University of Massachusetts at $14.8 billion dollars, and then took 'one quarter of that to represent the approximately 96.5 days Entergy estimates negative impacts would continue, [that] produces a figure of $370,000,000 –

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[108] *Id.* at 16-17.

[109] Petition at 15.

[110] *See id*. at 15-16.

[111] *Oyster Creek*, CLI-08-28, 68 NRC at 674.

[112] 10 C.F.R. § 2.326(b).

[113] Petition at 16-17.

far greater than $2,892,000" that Entergy "claims PW would need to show."[114] However, the Commission has stated that petitioners may not rely on a dissenting opinion to supply the necessary support for a motion to reopen.[115]

Moreover, Judge Young's identification of costs misconstrues the nature of the SAMA analysis by inappropriately comparing one element of the conditional consequence, *should* a severe accident occur, with the probability-weighted consequences in a SAMA analysis. The consequences in a SAMA analysis contain four contributions which are all converted to present-day dollars: (1) present value of averted public exposure (APE), (2) present value of averted off-site property damage costs (AOC), (3) present value of averted occupational exposure costs (AOE), and (4) present value of averted on-site costs (AOSC). [116] The formulas for these cost elements clearly show that they are probabilistically weighted by the reduction in annual core damage frequency (CDF) attributable to a SAMA.[117] Further, the *conditional* monetary values of averted costs (before probabilistic weighting by CDF reduction) in a SAMA analysis after discounting to present day value do not represent the expected benefit of averting a single accident. Rather, it is the present value of a stream of potential losses extending over the remaining lifetime (in this case, the renewal period) of the facility.[118] Thus, the averted costs reflect the expected annual loss due to a single accident, the possibility that such an accident could occur at any time over the renewal period, and the effect of discounting these potential

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[114] *Id* at 17 (quoting LBP-12-01 at 10 n.31 (Young, J., dissenting)).

[115] *Oyster Creek*, CLI-08-28, 68 NRC at 672-73.

[116] NUREG-1437, Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 29 Regarding Pilgrim Nuclear Power Station Final Report – Appendices, at G-37 – G-39 (Jul. 2007) (ADAMs Accession Number ML071990027).

[117] *Id*.

[118] NRC Staff Testimony of Nathan E. Bixler and S. Tina Ghosh Concerning the Impact of Alternative Meteorological Models on the Severe Accident Mitigation Alternatives Analysis, at 10-11 (Jan. 3, 2011) (ADAMS Accession No. ML110030966).

future losses to present value.[119]

Judge Young based her analysis on the assumption that Entergy demonstrated that PW would need to show an additional $2,892,000 in averted costs to "make another SAMA cost beneficial."[120] She reached this conclusion by relying on Entergy's testimony that for another SAMA to become cost-beneficial, the offsite economic cost risk and the offsite population dose risk would need to increase by a factor of 2.2.[121] But, instead of applying the factor of 2.2 to these values, which are probabilistically weighted outputs from the MACCS2 code,[122] Judge Young appears to have multiplied by a factor of 2.2 the estimated total benefit of the next-most cost beneficial SAMA, which includes other contributions identified above such as the on-site averted cost, to arrive at her figure of $2,892,000.[123] Moreover, Judge Young compounded the error by comparing the figure of $2,892,000 to her *non-probabilistically* weighted estimate of $370,000,000 in consequences that a severe accident at Pilgrim might have on the Massachusetts maritime economy.[124]

That $370,000,000 figure represents the posited *conditional* additional economic loss due to a severe accident, should one occur. There are three problems in comparing this figure to the $2,892,000 figure. The first problem (which would reduce the number by orders of magnitude) is that the $370,000,000 figure has not been probabilistically weighted by the annual CDF reduction. The second problem is that the figure has not been projected to occur at any time over the 20-year future renewal period and then discounted to present value. The third

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[119] *Id*.

[120] LBP-12-01 at 7, 10 n.31 (Young, J., dissenting).

[121] *Id*. at 7 (Young, J., dissenting) (citing Entergy Declaration at ¶ 49).

[122] Applicant's Environmental Report, Operating License Renewal Stage, Pilgrim Nuclear Power Station, Appendix E at E.1-60 (Jan. 25, 2006) (ADAMS Accession No. ML060830611) ("ER").

[123] LBP-12-01 at 7 (Young, J., dissenting).

[124] *Id*. at 10 n. 31 (Young, J., dissenting).

problem is that the $2,892,000 figure is 2.2 times the total averted cost, which also contains the APE, AOE, and AOSC – averted cost elements that would not be changed by the potential lost maritime business.

Accounting for the frequency of the potential for accident occurrence by probabilistically weighting consequences in NEPA analyses is long-standing Commission policy.[125] Accordingly, the failure to account for the frequency (probability) inflates the value of the benefit determined by this informal calculation because the calculation does not at all account for the extremely low probability for the likelihood of a severe accident occurrence. Such an estimate completely contravenes the SAMA analysis methodology and provides no measure of whether any of the information provided by PW could alter the SAMA analysis. No further "mathematical computations that are part of the SAMA analysis" could repair the effect put forth by this computation because it directly, and incorrectly, inserts a non-weighted value of averted off-site costs.[126] This approach, which effectively assumes that severe accidents will occur, renders the SAMA analysis meaningless because the expected benefit values for SAMAs become unreasonably ($370,000,000) high. Consequently, PW cannot claim that it "*did* show the costs" when PW has done no such thing and in fact adopts incorrect information.[127]

VII. Expert Affidavit

The Board found that PW's motion was "not supported by" the expert affidavit required by 10 C.F.R. § 2.326(b) because the Gundersen Declaration "fails to provide the requisite factual and/or scientific basis for the claim that a materially different result would have been likely."[128] Specifically, the Board held that the "Gundersen declaration contains only bare

[125] *Pilgrim*, CLI-10-11, 71 NRC at 291; *see also* Nuclear Power Plant Accident Considerations under the National Environmental Policy Act of 1969, 45 Fed Reg. 40101, 40103 (1980).

[126] LBP-12-01 at 10-11, n. 31 (Young, J., dissenting).

[127] Petition at 16.

[128] LBP-12-01 at 18. Moreover, the Board found that "sound challenges" had been made to "Mr.

speculation, presenting no facts or data to support its bald assertions" and makes "no reference to, and presents no discussion of, how Pilgrim (or any other) SAMA analysis is performed" or how the information presented could alter the SAMA analysis such to produce another cost-beneficial SAMA.[129]

PW claims on appeal that the Board "summarily rejected everything that Mr. Gundersen said as mere speculation" and "ignored Mr. Gundersen's particular expertise with respect to the Fukushima accidents."[130] But, PW has not shown, or attempted to show that any of Mr. Gundersen's statements went beyond speculation or mere assertion. Rather, as the Board convincingly demonstrated, none of Mr. Gundersen's statements explained how PW met the reopening requirements with any specificity or support.[131]

VIII. The Requirements of 10 C.F.R. § 2.309(f)(1)

In addition to denying PW's Aqueous Diffusion Contention for failing to meet the re-opening and timeliness standards, the Board also denied it for failing to satisfy the requirements of 10 C.F.R. § 2.309(f)(1). The Board found that PW's "speculative assertions" and those of its expert did not show that the Aqueous Diffusion Contention would cause the NRC to consider other SAMAs, and therefore did not meet the requirements of 10 C.F.R. § 2.309(f)(1)(iv).[132] Additionally, the Board found that PW did not meet the standard in 10 C.F.R. § 2.309(f)(1)(vi) to

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Gundersen's credentials as an expert with respect to the aqueous release issues and probabilistic risk analyses," and found those arguments "persuasive," although it did not base its determination on those grounds. *Id.* at 17.

[129] LPB-12-01 at 17-18. Mr. Gundersen's attempt to link the events at Fukushima to Pilgrim consisted of unsupported assertions such as "we know the area impacted by the disaster at Fukushima is enormous," "over time the entire Pacific Ocean will become contaminated," "there is every reason to expect that a similarly large area would be affected by a similar accident at Pilgrim Station" and "[i]t is certainly reasonable to assume that the entire Cape Cod Bay would be unusable by the public." *Id.* at ¶ 33.

[130] Petition at 13-14.

[131] LBP-12-01 at 9-10.

[132] *Id*. at 20.

show a that a genuine dispute exists with the applicant on a material issue of law or fact because PW showed neither that the SAMA analysis for Pilgrim would be affected in any way nor that there was any specific linkage between the events at Fukushima and the Pilgrim plant.[133] As the Board pointed out, in order to have a "material" dispute with the applicant, it must relate to that Plant and PW "fails to address a single portion of Entergy's Pilgrim analyses" and made no showing that the "characteristics of the Fukushima Dai-ichi site, the causes of the accidents which concern it, or the operational methodologies of those plants" are linked to "any characteristic of the Pilgrim plant and the surrounding environs."[134] PW offers only conclusory statements that it has "more than 'provide[d] the requisite sufficient information that would 'show' a dispute."[135] But, such assertions are clearly inadequate to show that the Board committed reversible legal error in LBP-12-01.[136]

CONCLUSION

For the foregoing reasons, the Staff respectfully requests that the Commission deny PW's appeal of the Board's order in LBP-12-01.

/Signed (electronically) by/
Maxwell C. Smith
Counsel for NRC Staff

Executed in Accord with 10 CFR 2.304(d)
Lauren Woodall
Counsel for NRC Staff

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[133] *Id*. at 20-21.

[134] *Id*. at 21.

[135] Petition at 25.

[136] *Advanced Medical Systems, Inc.* (One Factory Row, Geneva, Ohio 44041), CLI-94-6, 39 NRC 285, 298 (1994) ("The appellant bears the responsibility of clearly identifying the errors in the decision below and ensuring that its brief contains sufficient information and cogent argument to alert the other parties and the Commission to the precise nature of and support for the appellant's claims.").

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of	)	
	)	
ENTERGY NUCLEAR GENERATION	)	
COMPANY AND ENTERGY NUCLEAR	)	Docket No. 50-293-LR
OPERATIONS, INC.	)	
	)	
(Pilgrim Nuclear Generating Station)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of the "NRC STAFF'S ANSWER TO PILGRIM WATCH'S PETITION FOR REVIEW OF MEMORANDUM AND ORDER (DENYING PILGRIM WATCH'S REQUEST FOR HEARING ON A NEW CONTENTION RELATING TO FUKUSHIMA ACCIDENT)" have been served upon the following by the Electronic Information Exchange this 6th day of February, 2012:

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Dated at Rockville, Maryland
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