

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

BEFORE THE COMMISSION

In the Matter of)
Entergy Nuclear Generation Co.) Docket No. 50-293-LR
And Entergy Nuclear Operations, Inc.)
(Pilgrim Nuclear Power Station)) December 23, 2011

**COMMONWEALTH OF MASSACHUSETTS' BRIEF IN REPLY TO NRC
STAFF AND ENTERGY OPPOSITIONS TO THE COMMONWEALTH'S
APPEAL OF LBP-11-35**

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The Commonwealth of Massachusetts (Commonwealth), pursuant to 10 C.F.R. § 2.323 (c), hereby submits this Reply to the oppositions by the NRC Staff¹ and Entergy² to the Commonwealth's appeal of LBP-11-35.^{3,4} In its initial appeal brief, the Commonwealth identified three independent grounds which establish that there is new and significant information, based upon the lessons learned from Fukushima, which must be considered further by the NRC under the National Environmental Policy Act (NEPA) and the Atomic Energy Act (AEA) before deciding whether to relicense the Pilgrim plant for an additional twenty years: (1) the report by the NRC's own Task Force;⁵ (2) Judge

¹ NRC Staff's Answer to the Commonwealth of Massachusetts' Brief in Support of Appeal from LBP-11-35 (December 19, 2011) (Staff Opposition).

² Entergy's Answer Opposing the Commonwealth's Appeal of LBP-11-35 (December 19, 2011) (Entergy Opposition).

³ *Entergy Nuclear Generation Co.* (Pilgrim Nuclear Power Station), LBP-11-35, 74 N.R.C. ___, slip op. (Nov. 28, 2011) (LBP-11-35) (Young, J. concurring).

⁴ Commonwealth of Massachusetts' Brief in Support of Appeal from LBP-11-35 (December 8, 2011) (Initial Brief).

⁵ U.S. Nuclear Regulatory Commission Task Force, Near-Term Review of Insights from the Fukushima Dai-ichi Accident: Recommendations for Enhancing Reactor Safety in the 21st Century (July 2011) (Adams No. ML111861807).

Young's concurring opinion in LBP-11-35;⁶ and, (3) the opinion of the Commonwealth's expert, Dr. Gordon Thompson, as set forth in multiple contention-related filings.

In their oppositions to the Commonwealth's appeal, the Staff and Entergy largely ignore the first two grounds for the Commonwealth's new and significant information. So, as an initial matter, the Commonwealth respectfully requests that the Commission consider all the bases supporting the Commonwealth's appeal – not just those that the Staff and Entergy elected to address.⁷

As to the issues they did address, the Staff and Entergy oppositions mischaracterize the Commonwealth's expert opinion and also claim, incorrectly, that the Commonwealth has made an improper challenge to the NRC's standards for late-filed contentions and motions to re-open the record, which the Commonwealth did not make. Finally, the Staff and Entergy themselves seek to rewrite NRC regulations and NEPA requirements by arguing that the ASLB's review of the Commonwealth's contention – at the contention admission stage of the proceeding and using the NRC's late-filed contention admission standards – also satisfies NEPA's hard look requirements for new and significant information, which, as a matter of law, it does not.⁸

⁶ Hereinafter "Young Concurrence."

⁷ For example, the Commonwealth noted how the recommendations in the Task Force Report, that the level of safety should be increased to satisfy the adequate protection standard under the AEA, also provide new and significant information that the Severe Accident Mitigation Alternatives (SAMA) analysis prepared for Pilgrim under NEPA should be revised and additional mitigation measures implemented. Initial Brief at 17-18.

⁸ Entergy also claims that the Task Force recommendations are outside the scope of the Pilgrim relicensing proceeding. Entergy Opposition at 22. That is plainly erroneous since the Commission has made clear that where new and significant information is presented relevant to Category 1 or Category 2 issues (e.g. SAMAs; Spent Fuel Pools), these matters fall within the scope of the relicensing proceeding. *See* Initial Brief at 29, *citing* Denial of Petitions for Rulemaking, 73 Fed. Reg. 46204, 46206 (August 8, 2008).

Therefore, the Commonwealth respectfully requests that the Commission disregard the Oppositions and reverse and vacate LBP-11-35.

I. The Commonwealth’s appeal of LBP-11-35 does not constitute an impermissible challenge to NRC regulations.

Both the Staff and Entergy lead with the erroneous argument that the Commonwealth’s dispute with the ASLB Majority’s decision represents an improper challenge to the NRC’s regulations regarding late-filed contentions and motions to reopen the record.⁹ The Commonwealth made no such claim. Instead, the Commonwealth correctly pointed out that the ASLB Majority decision (unlike the Young Concurrence) unreasonably misapplied and misinterpreted those standards by making a merits review and decision at the contention admission stage of this proceeding. *See* Initial Brief, *e.g.*, at 27-28 (noting “[t]he ASLB Majority’s misapplication and burdensome interpretation of contention admission standards ...”); and *id.*, *citing New Jersey Environmental Federation v. NRC*, 645 F.3d 220, 232-33 (3d Cir. 2011) (court upholds the motion to reopen standard and will defer to the NRC’s application of its rules “so long as it is reasonable.”).¹⁰

⁹ *See e.g.*, Staff Opposition at 8 (“The Commonwealth alleges that its new contention should not have been held to the requirements of the regulations governing administrative hearing rights under the Atomic Energy Act ...”); Entergy Opposition at 2 (“[T]he Commonwealth erroneously asserts that the Commission’s standards for reopening the record and considering late-filed contentions violate NEPA and the Atomic Energy Act...”).

¹⁰ In its opposition, the Staff cites repeatedly to the *New Jersey* decision (*see, e.g.*, Staff Opposition at 8-9), but that case instead supports the Commonwealth’s position: that NRC late-filed contention standards are presumed valid but cannot be applied in an unreasonable manner – as the ASLB Majority did here in its premature merits review and in disregard of the NRC’s independent legal obligation to consider new and significant information under NEPA. *See* Initial Brief at 14-17; 23-24.

Therefore, what the ASLB Majority cannot do is impose a heightened standard of review equivalent to a merits determination of the Commonwealth's contention, without granting a hearing or further opportunity to present evidence. That merits review process is unreasonable and inconsistent with the NRC's own regulatory requirements and adjudicatory practice. *See* Initial Brief at 26-27 and cases cited. A summary merits review also violates the Commonwealth's AEA hearing right on all issues material to relicensing. Initial Brief at 27 and *infra*.

The principal NRC case relied on by Entergy is consistent with the Commonwealth's position. In *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-06-3, 63 N.R.C. 19 (2006), the Commission rejected a motion to re-open the record to admit a NEPA contention, on the ground that if the intervenor's claims were upheld, they would not be significant or be likely to have an effect on the outcome of the proceeding. While the Commission did require the contention to be supported to the extent required for admissibility, it did not engage in a merits review of the competing assertions of the intervenor, the applicant, or the NRC Staff. The Commission also referred to a previous decision in the same case, in which it had clarified that the appropriate standard for motions to re-open the record to admit a new issue (as is the case here) is the summary disposition standard. *Id.*, at n.4 (*citing Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation, CLI-05-12, 61 N.R.C. 345, 350 (2005) (“[T]o justify the granting of a motion to reopen the moving papers must be strong enough, in the light of an opposing filings, to avoid summary disposition.”)(internal citations omitted).

Moreover, the Commonwealth specifically addressed the NRC's late-filed contention standards, in light of the new and significant information from the lessons learned from Fukushima,¹¹ and Judge Young in her concurrence necessarily found that the Commonwealth's contention met those requirements because she determined that further review of these issues is required by the NRC prior to relicensing the Pilgrim plant. Initial Brief at 15 *quoting* LBP-11-35, Young Concurrence, at 76, fn. 13.

II. The ASLB Majority's application of the late-filed contention standards does not satisfy the NRC's independent obligation to take a hard look at the Commonwealth's new and significant information prior to relicensing.

Once the Commonwealth met the threshold requirement for new and significant information, the burden shifted to the NRC to take a hard look at that information before making a final relicensing decision. Initial Brief at 17-22. However, in their oppositions, Entergy and the Staff confuse and seek to collapse the ASLB's initial pleadings review to determine whether there is new and significant information and a hearing is warranted, with the subsequent merits review of that information. Indeed, Entergy argues that the ASLB Majority's pleadings review at the contention admission stage of the Pilgrim proceeding based upon the NRC's late-filed contention standards, satisfied NEPA's hard look standard. Entergy Opposition at 7. The Staff agrees. Staff Opposition at 14 ("[the standard the Board applied encompasses a hard look at the proffered new and significant information.>"). Both claims are erroneous as a matter of law.

While it is true that NEPA allows an agency a measure of discretion in determining how to evaluate new and significant information, the process must reflect a

¹¹ See Commonwealth of Massachusetts' Motion to Admit Contention, and, if Necessary, to Re-Open Record Regarding New and Significant Information Revealed by Fukushima Accident (June 2, 2011).

meaningful technical review by qualified personnel, instead of a merely threshold pleadings analysis to determine if a hearing is warranted to resolve a genuine dispute, as was performed by the ASLB Majority in this case. *Southern Utah Wilderness Alliance v. Norton*, 301 F.3d 1217, 1238-39 (10th Cir. 2002), *rev'd on other grounds*, 542 U.S. 55 (2004) (holding no major federal action remained to be taken). To evaluate whether an agency “took a ‘hard look’ at the new information,” in order to determine whether supplemental NEPA analysis was necessary, courts consider “whether the agency obtains opinions from its own experts, obtains opinions from experts outside the agency, gives careful scientific scrutiny, responds to all legitimate concerns that are raised, . . . or otherwise provides a reasoned explanation for the new circumstance's lack of significance.” *Id.* (quoting *Headwaters Inc. v. Bureau of Land Mgmt., Medford Dist.*, 914 F.2d 1174, 1177 (9th Cir. 1990) and *Hughes River Watershed Conservancy v. Johnson*, 165 F.3d 283, 288 (4th Cir. 1999) (internal citations omitted); *see also Natural Resource Defense Council, Inc. v. F.A.A.*, 564 F.3d 549, 561 (2nd Cir. 2009).

This more rigorous hard look review is consistent with established law interpreting NEPA. As the Supreme Court has explained:

The key requirement of NEPA...is that the agency consider and disclose the actual environmental effects in a manner that will ensure that the overall process, including generic rulemaking and individual proceedings, brings those effects to bear on decisions to take particular actions that significantly affect the environment.

Baltimore Gas & Elec. Co. v. Natural Resource Defense Council, 462 U.S. 87, 96 (1983); *see also Natural Resources Defense Council v. Callaway*, 524 F. 2d 79, 92 (2nd Cir. 1975) (holding that “the critical agency decision” must be made after the new

information has been considered in good faith; otherwise “the process becomes a useless ritual, defeating the purpose of NEPA, and rather making a mockery of it.”¹²

Indeed, the cases relied upon by Entergy support this view, since all reflect a greater level of independent agency review and more rigorous analysis than was performed by the ASLB Majority based only on contention related filings. *See* Entergy Opposition at 11-12 summarizing agency hard look actions including e.g. “use of agency requested expert analysis” and “agency supplemental information report based on agency-requested expert analysis.”

Of equal significance, none of the cases cited by Entergy involve the NRC which, pursuant to the AEA, uniquely is required to grant a hearing – through generic process (e.g. rulemaking) or individual adjudication – on all issues material to relicensing, including Entergy’s flawed SAMA analysis. Initial Brief at 27-28 and cases cited; *see also Union of Concerned Scientists v. NRC*, 735 F. 2d 1437, 1446-49 (D.C. Circuit 1984) (AEA hearing required on all issues material to licensing).

Thus having satisfied the threshold for new and significant information, the Commonwealth is entitled to some form of hearing process which provides a hard look at the lessons learned from Fukushima as raised in the Commonwealth’s contention -- “regardless of its [NRC’s] eventual assessment of the significance of this information.” Initial Brief at 16 *quoting Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 385 (1989).¹³

¹² Unlike the ASLB majority, the Commission itself has determined that the lessons learned from Fukushima are significant and require further agency evaluation. *See* Young Concurrence at 73 fn. 5.

¹³ For this reason, Entergy’s claims that “NEPA does not prescribe how the Commission must consider proffered evidence of new and significant information,” Entergy

III. The ASLB Majority’s findings that the Commonwealth’s expert failed to address SAMA costs or benefits, and its rejection of core melt events at TMI and Chernobyl as direct experience to test Entergy’s PRA analysis, is plain error.

A. The Commonwealth presented expert-supported evidence on the costs and benefits of SAMAs to the ASLB.

In its initial brief, the Commonwealth noted that the ASLB Majority, in finding that Dr. Thompson failed to address SAMA costs or benefits in his opinions, disregarded substantial evidence on the record presented by the Commonwealth, and that finding is plainly erroneous. Initial Brief at 29. The Staff and Entergy confuse the record, and seek to rehabilitate the ASLB Majority on this issue, simply by parroting the same erroneous findings made in the Majority’s decision. Staff Opposition at 18 (“he [Dr. Thompson] did not address the costs or the benefits of SAMAs”); Entergy opposition at 20-21).

To the contrary, in his June 1, 2011 Report (pp. 16 – 17), Dr. Thompson discusses the costs and benefits of SAMAs at Pilgrim and supports the need to revise that analysis.

For example, Dr. Thompson states:

To summarize, the licensee’s current position regarding SAMA analysis is that the overall CDF at Pilgrim without SAMAs, not accounting for uncertainty, is 3.2E-05 per RY (1 event per 31,000 RY), and the conditional probability of Early release is 0.32 (32 percent). These numbers provide a baseline for assessing the benefits of SAMAs. To a first-order approximation, the benefit of a particular SAMA would scale linearly with baseline values of CDF and the conditional probability of release. Indeed, as indicated on page G-10 of GEIS Supp 29, the licensee has performed such

Opposition at 11 (emphasis omitted), or that the Commonwealth is not “guaranteed an adjudicatory hearing,” *id.*, at 16, miss the mark. NEPA requires the NRC to take a hard look prior to relicensing the Pilgrim plant, but it is the AEA which affords the Commonwealth a hearing on these material relicensing issues. At the same time, the NRC has the discretion to determine the form of that hearing (e.g. either generic rulemaking or site specific adjudication). *Baltimore Gas, supra.*

linear scaling in accounting for the role of external initiating events.

* * * *

The occurrence of five core-damage events over a worldwide experience base of 14,500 RY can be translated to a CDF of 3.4E-04 per RY (1 event per 2,900 RY). This value is an order of magnitude higher than the baseline CDF estimate of 3.2E-05 per RY (1 event per 31,000 RY) that the Pilgrim licensee developed using PRA techniques. One can reasonably find that the licensee has under-estimated the baseline CDF of the Pilgrim plant by an order of magnitude. Such a finding is supported by a technical literature describing the limitations of PRA techniques. This finding is Conclusive, because there is general agreement that severe core damage has occurred at three NPPs at Fukushima. (footnotes omitted).

In its September 13, 2011 filing submitted to the ASLB, the Commonwealth specifically discussed Dr. Thompson's opinion on these SAMA costs and benefits and highlighted this evidence to be considered by the ASLB in its deliberations.

The Staff asserts that it would require at least a doubling of benefits before the next SAMA on the candidate list could become potentially cost-beneficial and that therefore at least a doubling of benefits is required to change the results of the SAMA analysis. Staff Opposition at 11.

* * * *

In making these arguments, the Staff and Entergy ignore Dr. Thompson's Conclusion (C. IV) of his June 1, 2011 report (p. 16) that Entergy has under-estimated the baseline CDF by an order of magnitude (a factor of ten). Moreover, as he explains, the benefit of a SAMA will scale (approximately) linearly with baseline CDF. *Id.* Thus, the Staff's requirement of at least a doubling of benefits is comfortably met, since the Commonwealth's expert suggests a ten-fold increase of benefits. [FN omitted]. A factor of ten also encompasses the SAMA analysis for filtered containment venting, which found that the costs outweighed the benefits by a factor of three. *See* Declaration of Joseph R. Lynch, Lori Ann Potts, and Dr. Kevin R. O'Kula in Support of Entergy Answer Opposing

Commonwealth Claims of New And Significant Information Based On Fukushima, at 53, ¶ 98 (June 27, 2011).¹⁴

Commonwealth of Massachusetts Reply to NRC Staff and Entergy Oppositions to Commonwealth Motion to Supplement Bases to Contention on NRC Task Force Report On Lessons Learned from Fukushima (Sept. 13, 2011) at 8 – 9.¹⁵

The ASLB Majority simply ignored this substantial record evidence in rejecting the Commonwealth’s challenge to Entergy’s SAMA analysis. Notwithstanding the repetition of these erroneous findings by the Staff and Entergy, the ASLB Majority thereby committed plain error and abused its discretion by finding that the Commonwealth failed to provide evidence on the costs and benefits of a revised SAMA analysis.

B. The ASLB Majority’s finding that core melt events at TMI and Chernobyl are not admissible to test the validity of Entergy’s PRA analysis is an abuse of discretion and legally erroneous.

Finally, the Staff and Entergy claim that the ASLB Majority properly found that the core melt events at Three Mile Island and Chernobyl are not “new” information and thus cannot be used as direct experience to test the validity of Entergy’s Probabilistic Risk Assessment (PRA) analysis. Staff Opposition at 17-18; Entergy Opposition at 18-19. This finding is irrational because the ASLB Majority would effectively bar the availability of cumulative direct experience, as new and significant information, to provide an increasingly reliable reality check on Entergy’s theoretical PRA analysis.

¹⁴ Thus, based upon the Commonwealth’s expert-supported contention, the benefit of filtered venting will rise from \$872,000 to \$8,720,000 (approximately), which is substantially larger than the cost of \$3,000,000.

¹⁵ See Thompson Report (June 1, 2011) at 29 (C4)(SAMA analysis should be redone “with a baseline CDF that is increased by an order of magnitude”); see also Thompson Report (August 11, 2011) at 6 (III-12) (“The Thompson 2011 Report [June 1, 2011] found that filtered venting of the Pilgrim reactor containment could substantially reduce atmospheric release of radioactive material from an accident at the Pilgrim NPP.”); and Initial Brief at 21, fn. 37(NRC’s ASP program considers direct experience).

Instead, under the ASLB Majority's view, each "new" event would be treated in isolation and each "old" event disregarded in the licensing process. As the Commonwealth previously noted, this turns western scientific method on its head. Initial Brief at 3.

Similarly, it is equally irrational to expect that the Commonwealth should have raised its direct experience argument six years ago, based only on two core melt events (TMI; Chernobyl), and without the knowledge of a 150% increase in the experience base from Fukushima. *Cf.* Staff Opposition at 18.

IV. Conclusion

The Commonwealth respectfully requests the Commission to reverse and vacate LBP-11-35 and refer this matter for further proceedings as requested herein.

Respectfully submitted,
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CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing **COMMONWEALTH OF MASSACHUSETTS BRIEF IN REPLY TO NRC STAFF AND ENTERGY OPPOSITIONS TO THE COMMONWEALTH'S APPEAL OF LBP-11-35**, dated December 23, 2011, were provided to the Electronic Information Exchange (EIE) for service on the individuals below and by electronic mail as indicated by an asterisk*:

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