

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
Entergy Nuclear Generation Co. and)
Entergy Nuclear Operations, Inc.) Docket No. 50-239-LR
)
)
(Pilgrim Nuclear Power Station))

NRC STAFF'S REBUTTAL TESTIMONY AND STATEMENT
CONCERNING REMANDED CONTENTION 3

INTRODUCTION

Pursuant to 10 C.F.R. § 2.1207(a)(2), the staff of the U.S. Nuclear Regulatory Commission ("Staff") responds to the January 3, 2011 "Pilgrim Watch SAMA Remand Pre-Filed Testimony" ("PW Submission"). For the reasons set forth below and in the Staff's Response in Support of Entergy's Motion in Limine, filed January 24, 2011 ("Staff January 24 Response"), the Staff submits that Pilgrim Watch's ("PW") remanded Contention 3, challenging Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc.'s (collectively, "Entergy") application for renewal of the Pilgrim Nuclear Power Station operating license, cannot be sustained.

DISCUSSION

The PW Submission cannot be considered testimony for evidentiary purposes because it lacks the support of a qualified expert witness. As a result, it does not meet the reliability criterion for admission into evidence. The Staff explained this in response to a January 13, 2011 Motion in Limine ("Motion") filed by Entergy. In the Motion, Entergy asked that the Board exclude from evidence the PW Submission and certain exhibits, and instead, treat PW's

Submission as a statement of position. On January 23, 2011, PW filed its response and conceded therein that its submission was not testimony. "PW's [sic] agrees that its Statement, in and of itself, it not testimony. It was provided to the Board as a guide to the evidence to which it refers."¹ In its response to Entergy's Motion, the Staff agreed that several exhibits in PW's Submission should be excluded, in whole or in part, because they addressed issues outside the limited scope of the proceeding and/or were not properly sponsored by a qualified expert witness. See Staff January 24 Response at 4.

In the PW Submission, PW stated that it would "not present any new evidence at the upcoming SAMA Remand Hearing and [would] rely solely on what has previously been presented." PW Submission at 2. The only information PW offered in the PW Submission was based on previous submittals in the proceeding presented by PW's representative, Mary Lampert. Ms. Lampert did not assert any personal knowledge of any facts or claims or demonstrate any expertise with respect to any technical matter presented in the PW Submission or with respect to Contention 3.

Expert testimony regarding atmospheric transport modeling is required to establish the reliability of the analysis in the PW Submission. The Board has previously held that where the evidence consists of technical analyses, reliability is established when that evidence has "been vouched for by an expert." *Duke Power Co. (William B. McGuire Nuclear Station, Units 1 and 2)*, ALAB-669, 15 NRC 453, 476-77 (1982). In the *McGuire* case, the Board explained that it upheld the exclusion of the unsponsored technical analysis because the analysis "manifestly is the type of evidence that calls for sponsorship by an expert who can be examined on the reliability of the factual assertions and soundness of the scientific opinions found in the

¹ Pilgrim Watch Reply to Entergy's Motion in Limine to Exclude From Evidence Pilgrim Watch's SAMA Remand Pre-Filed Testimony and Exhibits, at 2 (January 23, 2011).

documents." *McGuire*, 15 NRC at 477. Like the unsponsored analysis in *McGuire*, the reliability of PW's unsponsored analysis has not been established as acceptable for evidentiary purposes; it does not meet the reliability criterion for admissibility and should, therefore, be excluded as evidence. The Staff cited several other prior Commission and Board decisions as precedent that support excluding portions of PW's submission and treating it as a statement of position. See Staff January 24 Response at 2-5.

Because PW Submission is not testimony, as conceded by its representative, it should not be afforded the same weight as sworn testimony or expert sponsored exhibits. Fairness dictates that PW's unsponsored submission should not be afforded equal weight, particularly since PW chose to submit unsponsored exhibits. PW's view that "it would be a 'fool's errand' for PW to expend its limited resources to prepare and submit to the Board additional meteorological evidence for the limited initial phase of the remand hearing" does not excuse it from the adjudicatory obligations that are expected of all parties in Commission proceedings.² Since PW's submission is neither reliable nor, in some instances, relevant, the Staff submits that the Board should give it little, if any, weight on the question whether the license applicant's atmospheric transport modeling is adequate and reasonable in accordance with NEPA.

² In the "Statement of Policy on Conduct of Licensing Proceedings", 46 Fed. Reg. 28,533 (May 27, 1981), the Commission stated that

[f]airness to all involved in the NRC's adjudicatory procedures requires that every participant fulfill the obligations imposed by and in accordance with applicable law and Commission regulations. While a board should endeavor to conduct the proceeding in a manner that takes into account the special circumstances faced by any participant, the fact that a party may... possess fewer resources than others to devote to the proceeding does not relieve that party of its hearing obligations.

46 Fed. Reg. at 28,534. See also, *Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Unit 1), ALAB-719, 17 NRC 387, 392-42 (1983); *Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Units 1 & 2), ALAB- 666, 15 NRC 277, 279-280 (1982).

PW's Source Term Discussion

Though the Staff does not believe that the discussion of source terms are material to the Board's decision on remanded Contention 3, the Staff is compelled to rebut two particular misrepresentations by PW. PW cites to two NRC documents, NUREG-1465 and NUREG-1150, which do not appear as attached exhibits in their submission. PW Submission at 43-44. PW references these documents to demonstrate that Entergy's MAAP source term values are too small and leads to under prediction of consequences. As NRC Staff expert witness Dr. S. Tina Ghosh explains in the attached rebuttal testimony, NUREG-1465 and NUREG-1150 are inapplicable to Entergy's SAMA analysis.

CONCLUSION

For the reasons discussed above, the Staff maintains that Pilgrim Watch's remanded Contention 3 cannot be sustained.

Respectfully Submitted,
/Signed Electronically By/

Andrea' Z. Jones
Beth N. Mizuno
Counsel for the NRC Staff

Dated at Rockville, Maryland
this 31st day of January, 2011

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NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

NRC STAFF REBUTTAL TESTIMONY OF S. TINA GHOSH
CONCERNING PILGRIM WATCH'S APPLICATION OF NUREG-1150 AND NUREG-1465

Q1. Please state your name, occupation, and by whom you are employed.

A1. My name is S. Tina Ghosh. I am a senior program manager employed by the U.S. Nuclear Regulatory Commission (NRC). I have been employed by the NRC for over six years. A statement of my professional qualifications was attached to the "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" filed January 3, 2011 as Exhibit NRC000012.

Q2. What is the purpose of this testimony?

A2. The purpose of this rebuttal testimony is to address Pilgrim Watch's references to NUREG-1150 and NUREG-1465, in the Pilgrim Watch submission dated January 3, 2011.

Q3. In its discussion of how the source term to be used for each computation of radioactivity dispersion and deposition is determined, Pilgrim Watch references NUREG-1150 and NUREG-1465. Pilgrim Watch SAMA Remand Pre-Filed Testimony at 43-44. Are you familiar with these documents?

A3. Yes. NUREG-1150 is titled "Severe Accident Risks: An Assessment for Five U.S. Nuclear Power Plants" and addresses risks assessed from severe accidents in five nuclear

power plants in terms of core damage frequency, performance of containment structures, potential radionuclide releases and offsite consequences, and the overall risk. NU-REG-1465 is titled "Accident Source Terms For Light-Water Nuclear Power Plants" and addresses source term release in the containment of a reactor.

Q4. Do you agree with Pilgrim Watch's use of NUREG-1150 and NUREG-1465?

A4. No, I do not agree. It would not be appropriate to use NUREG-1465 source terms for Entergy's SAMA analysis. As is explained in Chapter 5 of NUREG-1465, there are numerous mechanisms that remove fission products from the containment atmosphere which result in a smaller source term that is available for potential release from containment, compared to the NUREG-1465 source terms. Examples of removal mechanisms include engineered safety features such as containment atmosphere sprays and suppression pools in boiling water reactors (such as the Pilgrim Nuclear Power Station [PNPS]) that trap and contain fission products in water, and natural processes such as aerosol deposition (where fission products become stuck on structural surfaces inside containment, for example). As explained in Chapter 5, NUREG-1465 does not provide numerical estimates of the containment source terms *after* the effect of these fission product removal mechanisms, but rather points readers to reference documents and approaches that could help with the calculation. Hence using the source terms provided in NUREG-1465 for a SAMA analysis would result in a gross over-estimate and is inappropriate where a plant-specific source term analysis is available.

Similarly, it would not be appropriate to use NUREG-1150 source terms for Entergy's SAMA analysis. The NUREG-1150 study, completed 21 years ago, summarized an assessment of the risks from severe accidents at five commercial nuclear power plants in the United States. PNPS was not one of these five plants. Severe accident source terms depend on many plant design features and operational practices, and hence are plant-specific. In addition, the state of the art for source term analysis has evolved and improved in the

intervening 21 years since NUREG-1150 was published. Where there is a more recent, plant-specific source term analysis, as was available and used for the PNPS SAMA analysis, it is inappropriate to refer to source terms from NUREG-1150.

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OPERATIONS, INC.)	
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AFFIDAVIT OF S. TINA GHOSH

I, S. Tina Ghosh, do hereby declare under penalty of perjury that my statements in the foregoing testimony and my prior statement of professional qualifications are true and correct to the best of my knowledge and belief.

Executed in Accord with 10 CFR 2.304(d).
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January 31, 2011

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
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ENTERGY NUCLEAR OPERATIONS, INC.) Docket No. 50-293-LR
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CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing "NRC Staff's Rebuttal Testimony and Statement Concerning Remanded Contention 3" have been served upon the following by the Electronic Information Exchange, with courtesy copies sent by electronic mail, this 31st day of January, 2011:

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/Signed Electronically By/

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