

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE U.S. NUCLEAR REGULATORY COMMISSION

In the Matter of
Entergy Corporation
Pilgrim Nuclear Power Station
License Renewal Application

Docket # 50-293

August 22, 2011

**PILGRIM WATCH REPLY TO NRC STAFF'S ANSWER TO
PILGRIM WATCH'S REQUEST FOR REVIEW**

Respectfully Submitted,

(Electronically filed)

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There are number of places where the NRC Legal Staff reply is incomplete, misleading or wrong. To at least some of these, a reply is required.

1. The repeated theme of the Staff's Answer is that the Board's mistakes don't matter: "PW's alleged procedural issues were not prejudicial because PW conceded the ultimate issue." (Answer, 12; see also p 9: "As PW's request does not discuss or explain its concession on the ultimate issue for remanded Contention, the alleged errors were harmless")

The Staff's premises are wrong. The Board Orders refusing to hear the "averaging" issue at all, and refusing to accept economic evidence in the first phase of the hearing, were not minor "procedural issues." All PW "conceded" was that it was not possible for PW, or anyone else, to "show that meteorology, *in and of itself*, would result in a significantly different SAMA analysis."¹ (See PW Jan. 3, 2001 position statement, 2, 3)

These two "procedural" orders preordained the result of the remand hearing. PW never conceded that it would not be able to succeed on what the Staff calls the "ultimate issue" if "procedural issues" had been properly decided.

PW has consistently said that the Board's fundamental mistake were orders that required PW to show that meteorology on its own could significantly change the SAMA analysis. As PW explained in its Reply to Entergy's Answer,² the Board's bifurcation and averaging orders reduced the remand to meaninglessness. PW was barred from presenting evidence to show what economic difference meteorological differences would make, and also from showing that

¹ The majority Decision proved that PW was right. It relied on economics to reach its conclusions.

² To avoid unnecessarily burdening the Commission, PW will not here repeat what is said on the same subject in its reply to Entergy. Suffice it to say, the Board's bifurcation order changed the Commission's Order in a way that ensured, before the remand hearing even began, that PW could not possibly succeed.

"Entergy and the NRC have used the MACCS2 code to insure that no source term will ever have any significant effect." (PW Reply to Entergy's and NRC's Staff Initial Statement of Position, 3)

Had the Board majority properly allowed the "averaging issue," and had the Board set proper rules for the remand hearing, PW would not have "conceded" anything. If PW had been allowed to introduce economic and averaging evidence in the phase one hearing, the Board majority could not properly have reached the conclusions that it did.

2. In arguing that the hearing itself was not prejudicial to PW, the Staff (like Entergy) ignores that the Board's Revised Notice and Order, February 23, 2001 (ASLBP No. 06-848-02-LR), that said "there will not be an evidentiary hearing on this issue (on March 9, 2011) ... only counsel and representatives of the parties will be permitted to speak." It also ignores Judge Abramson's statement that he did "not support the concept of asking for expert or asking the lawyers to comment on expert issues, at this process." (Tr. 815)

3. As for PW's alleged failure to file a *motion in limine* (Answer, 16), on February 22, 2011, the Board granted PW's, Entergy's and the Staff's Joint Motion, saying "The Board will admit all of the exhibits of Pilgrim Watch and the other parties into the record, but shall ... accord each of them only the weight to which they are entitled, based on the extent to which they are relevant, material, and reliable ... and persuasive on the above stated threshold issue." Given the Board's clear statement that it would limit evidence to what was relevant to the "on its own" first phase issue, PW had no reason to file a *motion in limine* to exclude the Staff's or Entergy's economic evidence.

4. The Staff's argument that "The Board Correctly Determined that PW Failed to Raise 'Averaging' in a Timely Manner" follows the lead of the Board majority and Entergy. Not one of the three recognizes that the test whether a contention raises an issue is whether it fairly

appraises the other parties what they will have to defend against or oppose. (See PW Reply to Entergy's Answer Opposing PW Request Review, Aug., 23, 2011, ¶ 3, pg., 3) The Staff admits that "PW tries to demonstrate that the Board, Entergy and the Staff were put on notice," but like Entergy and Board majority it ignores uncontroverted evidence that all three in fact were. The Commission should note that the nine-line quotation at page 18 of the Staff Answer is from the majority Decision; it is not anything that Judge Young said. Judge Young said that she "would have allowed" the averaging issue. (Separate Statement, p. 2) We do not know on what the Staff believes that Judge Young "recognized" from the Staff's quotation from the majority Decision. Judge Young clearly did not "recognize" that the quotation had any validity.

5. Finally the Staff argues that the Board satisfied NEPA requirements. In doing so, the Staff ignores that the majority Decision never even mentions Fukushima, and (incorrectly) intimates that the NEPA test is simply whether "use of the Gaussian plume is unreasonable."³ Taking the former first, NEPA requires an agency to consider environmental impacts *before* decisions are made to ensure that "important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast." (*Robertson v Methow Valley Citizens Council*, 490 U.S. 332,349, 1989) "Regardless of its eventual assessment of the significance of the information, the [agency] ha[s] a duty to take a hard look at the proffered evidence." *Marsh v Oregon Natural Resources Council*, 490 U.S. 360, 385 (1989) Does NRC Staff really believe the Board majority did not know about Fukushima? Judge Young recognized the importance of considering Fukushima before making any final licensing decision. Staff never explains how the Board majority satisfied NEPA without mentioning Fukushima. As for the plume model, NEPA's Rule of Reason requires the Board to consider reasonable

³ As said below, the NEPA test is whether it would be "reasonable" to consider other models and compare their results with those of a Gaussian plume mode.

alternatives. In CLI-10-11, the Commission did say that "NEPA does not require agencies to use technologies and methodologies that are still 'emerging' and under development, or to study phenomena 'for which there are not yet standard methods of measurement or analysis'" (p. 37). But neither are the case here; the Board decision and the Staff recognizes that site-specific, variable plume models are available. (Decision, pgs., 22-23; Staff Answer, p. 24)

At the very least, NEPA's Rule of Reason required the Board to consider whether it would be "reasonable" to use a readily-available, site-appropriate, variable plume model,⁴ and to require Entergy to compare the results obtained using its straight-line Gaussian plume model with those that would actually result if an available variable plume model were used. This seems particularly so since even Entergy agrees that the Gaussian plume model has serious limitations; for example, it does not take into consideration changes in wind direction once the plume leaves the site, or that winds at various points in the study region may for any given time period be spatially varying. (See O'Kula and Hanna testimony, January 3, 2011) Additionally its meteorological inputs are limited to data collected at a single site and for only one year (ENTT0001); and the MACCS2 code cannot base its conclusion on a release that extends for longer than 24 hours, unless the Applicant chooses to use four plumes occurring sequentially over a four day period. Entergy chose not to take that option. (Pilgrim Watch Request For Hearing On Post Fukushima Sama Contention, May 12, 2011) As said by David Chanin who wrote the codes FORTRAN and SAND96-0957: "the MACCS2 cost model is so seriously flawed that even with revaluation and modification of all its input parameters, its cost results should not be used unless for replicating prior studies." (PWA00004, August 23, 2006). Also, significantly, Mr. Chanin said the MACCS2 code was developed as a research code, not a

⁴ The question is not whether "the straight-line Gaussian plume is unreasonable." (Answer 22)

licensing code. It did not use NQA-1 standards making it inappropriate to support SAMA analyses. (PWA0004) He said,

[T]he QA distinctions between an NQA-1 "licensing code" and a "research code" like MACCS2 have been emphasized in light of the fact that MACCS2 calculations are being used to support the Severe Accident Mitigation Alternatives (SAMA) analyses required for the license renewal of commercial nuclear power plants. It seems to me that the code's QA shortcomings and the lack of input justifications are again being ignored. (Ibid.)

Mr. Chanin's statements regarding the MACCS2 code make no exception for the ATMOS module that is central to meteorological issues.

So far as can be told from the Decision, none of this evidence was considered by the Board majority.⁵ Entergy's simple excuse that "we've used it for years" provides no reasonable basis for blindly continuing to do so. No regulation requires the NRC to use a Gaussian plume model, and other federal agencies do not. The evidence that the Board majority characterized as showing that different models produced results that were "generally within a factor of 2, or "generally within the bounds of other models" (Dec.33) is inaccurate particularly when the EPA has flatly said the Gaussian plume model is not accurate beyond 30 miles, i.e., where more than half the population is found, and Entergy's expert agrees.⁶

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⁵ Like Entergy, the Staff nowhere mentions that a Board Decision must "clearly state the basis for its decision and, in particular state reasons for rejecting certain evidence in reaching the decision" (Public Service Company of New Hampshire, 6 NRC 33 (1977), Practice Digest, Hearing 115). See PW's Reply to Entergy's Answer, ¶ 5, pg., 5

⁶ PWA00023, 6-7, Model Predictions at long distances; and Ramsdell description RASCAL Version 4 "...[P]uff model at longer distances where temporal or spatial variations in meteorological conditions may be significant."