

DOCKETED
USNRC

RAS 0-222

May 13, 2010 (8:00a.m.)

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

Docket # 50-293

PILGRIM WATCH RESPONSE TO ASLB'S MAY 5, 2010 ORDER

Mary Lampert
Pilgrim Watch, pro se
148 Washington Street
Duxbury, MA 02332

May 12, 2010

Complete Levy-037

OS-03

PILGRIM WATCH RESPONSE TO ASLB'S MAY 5, 2010 ORDER

The May 5, 2010 Board Order requested: (1) Proposed issues for the hearing on Contention 3, and whether the issues should be tried together or addressed in a bifurcated fashion in stages; (2) Whether the parties wish to have a settlement judge appointed; and (3) Proposed schedules for the remainder of this adjudication proceeding, including discovery, hearing, and whether the hearing should be held in a single session or potentially in two steps.

A. PROPOSED ISSUES FOR HEARING AND TRIAL PROCEDURE

Pilgrim Watch ("PW") believes that the March 26, 2010 Commission Order (Com. Or.), CLI-10-11, requires the following issues to be tried at the hearing on Contention 3, and that the trial of these issues cannot and should not be bifurcated.

1. Whether the Pilgrim SAMA analysis resulted in erroneous conclusions on the SAMAs found to be cost-beneficial to implement. (Com. Or., p. 37)¹
2. Whether the model used by Entergy requires, allows for, or otherwise takes into account particular input data related to the various inputs (Com. Or., p.17) and whether the inclusion of additional factors or use of other assumptions or models would change the cost-benefit conclusions (Com. Or., p. 39)
3. The adequacy of the model underling the SAMA analysis (Com. Or., p. 26), the impact of the adequacy of the meteorological modeling on economic cost matters (Com. Or., pp. 36-37), and whether material deficiencies in the meteorological modeling require economic cost calculations to be re-examined (Com. Or., p. 27), significantly change (Com. Or., pp 32-33) or call into question the Pilgrim SAMA cost-benefit analyses (Com. Or, p. 27).²

1. Background and Overview: PW agrees that page 1 of the Board's Order of May 4, 2010 (Order Regarding Agenda) correctly stated that the fundamental issue before the Board is

¹ The Board apparently agrees that this is the fundamental issue. Board Order of May 4, p.1

² Questions raised by these include the behavior of plumes over water resulting in hot spots of radioactivity in unexpected places (Com. Or., p. 23), the purported conservatism of the straight-line Gaussian plume (Com. Or., p. 25), and the impact of the adequacy of meteorological modeling on evacuation times (Com. Or., p.27).

whether the Pilgrim SAMA analysis resulted in erroneous cost-benefit conclusions. (Issue 1, above)

PW also agrees that one principal issue before the Board is whether the Pilgrim SAMA analysis's meteorological modeling using the straight-line Gaussian plume dispersion model is "adequate" and whether "alternative modeling" argued by PW would cause any additional SAMAs to become cost-beneficial. (May 4, 2010 Board Order Regarding Agenda, p. 2)

However, PW does not agree with the apparent assumption that "adequacy" is limited to "whether alternative modeling ... would cause any additional SAMAs to become cost beneficial when examined using median results from probabilistic analyses performed using such alternative modeling in comparison to the current results using the Gaussian plume dispersion model." Neither does it agree with the suggestion, during telephone conference of May 4, 2010 that the only question is whether different meteorological inputs into the same MACCS2 code previously used by Entergy would change the cost-benefit analysis.

With respect to "median results from probabilistic modeling," the majority opinion in the summary disposition decision says that "our regulations require the use of probabilistic (as opposed to deterministic) methodology (p. 8). However, neither the majority opinion, nor the portion of the dissenting opinion (p. 28) that refers to it, cites any regulation³; and the Commission Order properly criticized the majority's statement that "Pilgrim Watch's plume model arguments impermissibly challenge an 'approach' mandated by [NRC] regulations," since it "did not cite any regulation requiring the use of a particular atmospheric model or code for use in SAMA analysis." (Commission Order, p. 17) What is at issue under the admitted contention is not whether to use a probabilistic or deterministic model. Rather, it is the adequacy of the inputs and code used by the Applicant to form the basis of their SAMAs.

³ If any such regulations exist, PW asks that Entergy or the Staff will identify them

Even if some NRC regulation does require the use of probabilistic methodology, PW knows of no NRC regulation that requires use of “median results from probabilistic analysis” as opposed to some other type of statistical analysis (ASLB Order Regarding Agenda, p.2); much less of any regulation that requires the particular probabilistic analysis and methodology used by Entergy in its SAMA analysis. Absent an NRC regulation specifying precisely what probabilistic modeling must be used; “whether the inclusion of additional factors or use of other assumptions or models would change the cost-benefit conclusions” (Com. Or., p. 39) must be looked at.

The Issues for Hearing Defined by Commission Order

1. **The Fundamental Issue:** Both the Commission (Commission Order, pg. 37) and the Board (May 4 Order, p. 1) recognize that “the issue here is whether the Pilgrim SAMA analysis resulted in erroneous conclusions on the SAMAs found to be cost-beneficial to implement.” This fundamental issue is far less limited than the Board’s May 4 Order implies, and encompasses far more than the “just see what new meteorological inputs will do” procedure described by Judge Abramson, Entergy and NRC Staff during the May 4 Teleconference Call. The Commission Order may have placed some limits on what must be considered at the future hearing. However, and as discussed in more detail below, it made clear that the economic consequences of a wide range of potential changes to both MACCS2 code and inputs are central and must be considered.

2. **“Additional Factors, Assumptions or Models:”** The Commission Order is clear that Contention 3 is not limited to data inputs, includes challenges to the straight line Gaussian plume model, and “present[s] a number of issues concerning the MACCS2 plume model and the

appropriateness of using this model. (Com. Or., pp. 16-17) The Commission also said that “[w]e agree with Pilgrim Watch and the dissent that...[t]he Board did not make a distinction between specific input data entered into the MACCS2 code and specific models embedded in the code (such as the atmospheric dispersion model), resulting in confusion over the contention’s scope” (Commission Order, p. 14), and that “there may easily be an overlap between arguments challenging the sufficiency of ‘input data’ used and challenging the model used, if,” as Pilgrim Watch will show, “the model does not require, allow for, or otherwise take into account particular types of data.” And at the end of its Order, the Commission makes it very clear that PW may introduce a wide range of evidence to show “that inclusion of an additional factor or use of other assumptions or models may change the cost-benefit conclusions for the SAMA candidates evaluated”

Pilgrim Watch thus is permitted, and expects, to show that, for example, other factors, inputs and assumptions, and a model that examined a variable plume rather than a straight-line Gaussian plume could significantly change the size of the affected area, deposition, damage to economic infrastructure and business activity, and that ameliorating this damage could significantly change the cost-benefit analysis.

The Board cannot make a determination whether it “look(s) genuinely plausible that these additional factors, assumption or models may change the cost-benefit conclusions” until they have heard all our evidence on what these multiple factors, assumptions and models are, and their potential effect on such things as evacuation time estimates and economic consequences. Therefore, it is clear that Entergy’s and the NRC Staff’s May 4 endorsement of Judge Abramson’s suggestion that the scope of inquiry be limited to one variable- simply changing

some meteorological inputs into the same model used by Entergy - is contrary to the Commission's remand.

Finally, although the Commission Order apparently accepted that Entergy "used a 'customarily' used code, 'widely used and accepted as an appropriate tool' for conducting SAMA analyses, and that the Gaussian plume model is a 'fundamental part' of the MACCS2 code," the Commission was clear that "those reasons are not a sufficient ground to exclude the code's integral dispersion model from all challenges." (Commission Order, p. 17)

3. Meteorological Modeling and Inputs: Meteorological models and inputs define the atmospheric transport, dispersion, and deposition, as well as the radioactive decay that occurs prior to release and while the material is in the atmosphere. They define the area of impact and deposition; and, in turn, they are linked to the economic consequences. The Commission Order made clear that these issues relating to meteorological models and inputs include:

1. The adequacy of the meteorological modeling underlying the SAMA analysis (see Commission Order, p. 26). "We agree with Pilgrim Watch and the dissent that the majority improperly excluded the issue of the straight-line Gaussian plume mode." (Commission Order, p.14)
2. Whether economic cost calculations should be re-examined because of [material] deficiencies in the meteorological patterns modeling. (Commission Order, pg. 27)
3. Whether [material] deficiencies in the meteorological modeling call into question the Pilgrim SAMA cost-benefit analyses. (see Commission Order, pg. 27)
4. Whether additional meteorological information would significantly change the Pilgrim SAMA cost-benefit analysis. (Commission Order, pp. 32-33)
5. What is the impact of the adequacy of the meteorological modeling on economic cost matters (Commission Order, pp. 36-37)

6. What is the behavior of plumes over water resulting in “hot spots of radioactivity in unexpected places (an) “The majority did not address the reduced turbulence/ ‘hot spots’ claim” (Commission Order, pg. 23)
7. The “conservatism of the straight-line Gaussian plume” (Commission Order, pg. 25)
8. What is the impact of the adequacy of the meteorological modeling on evacuation time portions of Contention 3 (Commission Order, at 27)

Here, again, the Board cannot determine whether any deficiencies are material, what additional information would significantly change the analysis, the impact of the adequacy of the meteorological modeling or whether the straight-line Gaussian plume is conservative without determining how correcting any of these deficiencies or using additional information would change the “cost” portion of the cost-benefit analysis.

4. The Issues Cannot and Should Not Be Bifurcated Into Stages : In the telephone conference of May 5, Entergy, NRC Staff, and Judge Abramson proposed that the Hearing should be bifurcated into two stages. Apparently the first stage would determine what would result if Entergy were simply to change some meteorological inputs into the MACCS2 code it used before, but would not change any of the other factors, assumptions, models that Entergy used in its previous SAMA analysis.

What the proponents of this approach seemed to have missed is that this approach is highly unlikely to decide this case. Entergy clearly expects that changing a few inputs, but not the code, will not show that Entergy’s SAMA analysis was deficient, particularly since the code used by Entergy appears to be used to reach what Entergy thinks is the “right result.”

But Entergy's desired outcome decides nothing of importance. It gives no answer to the whether other deficiencies ("factors, assumptions and models") in the code used by Entergy could lead to a different SAMA cost-benefit analysis.

PW is not clear what other "bifurcation" the Board may have in mind. However, it is clear that no "bifurcation" should be made. For example, in the May 4 telephone conference, Entergy and the Staff recognized (as apparently did Judge Abramson) that evaluation of the effect of a change on whether a particular SAMA would be justified, and whether any particular change is "material," depends not on the change itself, but on how the change could affect costs and benefits. Absent evidence showing how a change (whether to an input, or to the code used by Entergy) might affect economic and other consequences, it simply is not possible to determine whether Entergy's code was "adequate" or whether any deficiency in that code was "material."

In simple terms, it is not the difference, but the difference that the difference makes. A "significant" change in code or input that had little end effect might well not show that the code or input used was inadequate or deficient. But if even a small change in code or input resulted in potentially significant additional costs and damage, that small change would be material. It's like love and marriage, you can't have one without the other.

PW's expert, Dr. Egan, explained technically why the May 4 recommendation to bifurcate the hearing and consider simply the impact of different meteorological inputs into the same old code would not answer the dispute. (1) What is at issue here is that the MACCS2 model's ATMOS uses the straight-line Gaussian plume and in order to simulate the effects of the complexity of air flows in a coastal location a different dispersion model such as used in "puff" models is needed. Therefore no matter how many different straight-line Gaussian inputs may be

used in Entergy's and Dr. Abramson's suggested simulations, the output will not reflect what actually will happen at this specific site. As Dr. Egan has said before, "sensitivity studies do not add useful information if the primary model is flawed." And more fundamentally the meteorological model/inputs are tied to the other two modules. The Code Manual for MACCS2: Volume 1, User's Guide, May 1998 (NUREG/CR-6613) explains in Section 2 that the MACCS2 is divided into three primary modules: ATMOS, EARLY, and CHRONC. ATMOS performs all of the calculations pertaining to atmospheric transport, dispersion, and deposition, as well as the radioactive decay that occurs prior to release and while the material is in the atmosphere. The results of the calculations are stored for use by EARLY and CHRONC. EARLY models consequences of the accident to the surrounding area during an emergency action period. CHRONC considers the long term impact in the period subsequent to the emergency action period. Detailed meteorological, population, and economic and health data are required; and of the three phenomenological modules in the code, ATMOS is the only one that must always be exercised. The User's Guide explains that you cannot separate what is put into the code from all the other parts of the code, they are linked together.

B. SETTLEMENT JUDGE

Pilgrim Watch supports the appointment of a Settlement Judge in this proceeding.

C. PROPOSED SCHEDULE

Pilgrim Watch proposes the following schedule: Submission of written direct testimony and exhibits (October 15); Completion of other pre-filings (motions in limine, proposed questions, etc.) by November 25; Hearing to begin on the earliest date after November 25 that is convenient for the Board.

The foregoing proposed schedule is based upon the schedule that the Board set for Contention 1. This proposed schedule is driven by two facts. The first is that, as PW explained during the conference call on May 4; two key experts are not able to begin work on this matter until the beginning of September, 2010. They have work commitments for other “full –freight” clients. The second is that PW does not have the support staff and funds that are available to both Entergy and NRC Staff to prepare for a rushed schedule. In contrast, because PW is an unfunded public interest group, we are unable to pay our experts their usual expert hourly rates. PW and our experts are committed to public service; but the experts, too, must eat. It will take, at minimum, six weeks to prepare to file statements of position, another 6 weeks to complete the remainder of the pre-hearing filings (November 25); and hearing scheduled thereafter.

PW hopes that, before hearing, the matter will be settled; and that, if is not, Commission will have ruled on Pilgrim Watch’s Motion for Reconsideration so as to add needed clarity.

During the conference call on May 4, Entergy said they found the time expended to date on this adjudication to be a burden and the schedule should be fast tracked. We remind the Board that it is neither PW’s, Entergy’s nor the Board’s fault that the Commission took nearly two years to make a decision on PW’s Petition for Review, filed November 12, 2008; and that although Entergy and the NRC Staff may have the resources necessary to “fast track,” Pilgrim Watch does not.

Pilgrim Watch believes, as further explained below, that the hearing should be held in a single, one-step, session. As we said at the conference call and further explain below, the issues are tied together. The MACCS2 code is at the heart of the SAMA and the MACCS2 Users Guide explains that you cannot separate one part of what is put into the code (for

example, pure meteorological data) from all the inputs or from the manner in which the code can, does, or should handle them - they are linked together.

In fact, the Commission Order made clear the inputs into the Code and what the code does (or does not) do with those inputs are inseparable (“there easily may be an overlap between arguments challenging the sufficiency of the ‘input data’ used and challenging the model used, if the model does not require, allow for, or otherwise take into account particular types of data.” (Commission Order, pg 15) Also it would be inefficient to have two separate hearings and unnecessarily expensive for the Board and parties.

CONCLUSION

The Commission's Order lacks clarity. PW finds that the Order's scope is broad and includes all issues that go into a cost-benefit analysis, far more than simply meteorological modeling/input deficiencies. The conclusion is the most important part of any document; it summarizes the main points. The very last sentence of the Commission's Order says very clearly that PW can include all the “additional factors, assumptions, models that may change the cost-benefit conclusions for the SAMA candidates evaluated.” Entergy, NRC Staff and the Board's May 4 Order failed to appreciate this and instead take a very narrow view of the scope. And, as a practical matter, it would seem impractical to proceed until the Commission clarifies its Order.

Respectfully submitted,



Mary Lampert

Pilgrim Watch, pro se

148 Washington Street

Duxbury, MA 02332

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

Docket # 50-293-LR

Entergy Corporation

Pilgrim Nuclear Power Station

License Renewal Application

May 12, 2010

CERTIFICATE OF SERVICE

I hereby certify that Pilgrim Watch Response to ASLB's May 5, 2010 Order was served May 12, 2010 in the above captioned proceeding to the following persons by electronic mail this date, followed by deposit of paper copies in the U.S. mail, first class.

Secretary of the Commission
Attn: Rulemakings and Adjudications
Staff
Mail Stop 0-16 C1
United States Nuclear Regulatory
Commission [2 copies]

Administrative Judge
Richard F. Cole
Atomic Safety and Licensing Board
Mail Stop -T-3-F23
US NRC
Washington, DC 20555-0001

Administrative Judge
Ann Marshall Young, Chair
Atomic Safety and Licensing Board
Mail Stop - T-3 F23
US NRC
Washington, DC 20555-0001

Office of Commission Appellate
Adjudication
Mail Stop 0-16 C1
United States Nuclear Regulatory
Commission
Washington, DC 20555-0001

Administrative Judge
Paul B. Abramson
Atomic Safety and Licensing Board
Mail Stop T-3 F23
US NRC
Washington, DC 20555-0001

Atomic Safety and Licensing Board
Mail Stop T-3 F23
United States Nuclear Regulatory
Commission
Washington, DC 20555-0001

U.S. Nuclear Regulatory Commission
Office of Commission Appellate
Adjudication
Mail Stop: 0-16C1
Washington, DC 20555-0001

U.S. Nuclear Regulatory Commission
Office of General Counsel
Mail Stop: 0-15 D21
Washington DC 20555-0001
Susan L. Uttal, Esq.
Marcia Simon, Esq.
Andrea Jones, Esq.
David Roth, Esq.
Brian Harris, Esq.
Brian Newell, Paralegal

U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Mail Stop: 011-F1
Washington, DC 20555-0001

Lisa Regner, Project Mgr. Plant Lic.
Branch 1-1, Operator Reactor Licensing
Washington, DC 20555-0001

Paul A. Gaukler, Esq.
David R. Lewis, Esq.
Jason B. Parker, Esq.
Pillsbury, Winthrop, Shaw, Pittman,
LLP - 2300 N Street, N.W.
Washington, DC 20037-1128

Martha Coakley, Attorney General
Matthew Brock, Assistant Attorney
General Commonwealth of
Massachusetts
Office of Attorney General
One Ashburton Place
Boston, MA 02108

Mark Stankiewicz
Town Manager, Town of Plymouth
11 Lincoln Street
Plymouth MA 02360

Sheila Slocum Hollis, Esq.
Town of Plymouth MA
Duane Morris, LLP
505 9th Street, N.W. 1000
Washington D.C. 20004-2166

Richard R. MacDonald
Town Manager, Town of Duxbury
878 Tremont Street
Duxbury, MA 02332

Fire Chief & Director DEMA,
Town of Duxbury
688 Tremont Street
P.O. Box 2824
Duxbury, MA 02331

Terence A. Burke, Esq.
Entergy Nuclear
Mail Stop M-ECH-62
Jackson, MS 39213



Mary Lampert
Pilgrim Watch, pro se
148 Washington St.
Duxbury, MA 023332
May 12, 2010