

July 26, 2013

Mr. James Borchardt
Executive Director for Operations
U.S. Nuclear Regulatory Commission
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By Mail & Email: NrcExecSec@nrc.gov

FOLLOW-UP TO PRB MEETING OF JULY 19, 2013

PILGRIM WATCH 2.206 PETITION TO IMMEDIATELY SUSPEND THE OPERATING LICENSE OF PILGRIM STATION UNTIL THE PROVISIONS OF EA-12-050 AND EA-13-109 ARE FULLY IMPLEMENTED, VENTS AUGMENTED WITH FILTERS AND RUPTURE DISCS

During the PRB telephone conference of July 19, 2013 the PRB requested Pilgrim Watch to provide further information regarding how long it would take to implement the Phase 1 and Phase 2 Requirement of EA-13-109, and also asked to identify issues brought forward by Pilgrim Watch that should be included in any preliminary or final PRB decision on Pilgrim Watch's 2.206 petition.

A. Implementation EA-13-109

PW's Request for Hearing (at 2) said that, "Based on this new and significant information, we respectfully ask the PRB to order Pilgrim to cease operations until EA-13-109 Phase 1 and Phase 2 requirements are implemented. To be consistent, NRC should extend the Order to cease operations to other Mark I and Mark II reactors."

PW's 2.206 demonstrated that the status quo does not protect public health, safety and property; therefore it is not reasonable to delay implementation to "no later than startup from the first refueling outage that begins after June 30, 2017, or June 30, 2019." PW said that

implementation in fact could happen far sooner. The further information that the PRB requested on this subject is set forth below.

1. A Filtered Venting Containment System is now, and for some time has been, commercially available from AREVA. AREVA's brochure¹ explains that it is "[e]asy to backfit in part due to compact design;" and says that their "extensive full system installation experience allows us to complete commissioning one and a half years from date of order." (Emphasis added)

Quick Delivery and Integration

AREVA prefabricates the filter vessel and performs preliminary erection work while the plant is still online and completes installation during a normal outage. Our extensive full system installation experience allows us to complete commissioning one and a half years from date of order.

To accelerate backfitting into power plants already in operation, or if transportation of the complete system is not feasible, the filtering system can be assembled on-site. AREVA has both the know-how and the experience to deliver and combine the complete venting system to the plants in operation including civil works if required.

2. Pilgrim was the first reactor to install a DTV system. It took approximately 18 months, not 6 years, to install the first DTV system. A Memorandum presented by David Dixon, Town of Plymouth Nuclear Matters Committee to both the Plymouth Selectmen, 07.06.90 and Massachusetts Joint Committee on Energy, 02.27.90 (attached) says that on "September, 1987. Installation of the DTVS vent line is occurring." (Item 8) and on "January 1989. "The DTVS was made operational." (Item 16)

3. Given all the industry's experience with DTV systems over the past 25 years, there is no reason to expect that a second vent could not be installed at Pilgrim in less than 18 months. Neither is there any reason that such a vent could not be installed simultaneously with the

¹ http://www.aveva.com/globaloffer/liblocal/docs/Brochures/AREVA_Filtered-Containment-Venting-System_vEN.pdf

installation of a Filtered Venting Containment system, and that both jobs could not be completed in a year and a half.

4. The history of previous time-lines for installations shows that the Filtered Venting Containment System and second vent can easily installed in far less than six years. For example: Pilgrim received its Special Permit from the Town of Plymouth in 1967 and became operational in 1972; in other words the site was prepared and reactor constructed in less than five years. In the 1990's, the major reactor modification was the alternate decay heat removal system. It took 2-4 years. In the 2000s, the reactor vessel head replacement modification became widespread, taking 2 to 4 years. More recently, the NRC issued three orders in March 2012 for Fukushima modifications with a requirement they be installed no later than end of year 2016 -- a four year deadline.

5. PW expects that the core problem is that the NRC's implementation schedule is driven by utility refueling outage schedules by allowing licensees to wait one outage to take measurements and then wait another outage to finally install the vent. There is no basis to build this schedule around outage schedules. It simply requires a shutdown at any time to take measurements and another shut down to install.

6. The likely true explanation for the Order's implementation schedule, as PW explained during the conference call, is that NRC wants to delay installation because the cost to install vents would cause shutdowns of plants like Fitzpatrick, VY and Pilgrim. These reactors are in financial trouble because of low prices in their respective deregulated energy markets and the NRC does not want to push some of these reactors into closure. The message to us is that reactor profits from delay mean more than public safety. If NRC wants to prove us wrong, as we sincerely hope, and satisfy its AEA obligations to protect public health and safety then it will

require installation in one to one and a half years. Absent the full implementation of filtered and passive wetwell and drywell vents, there is no reasonable assurance; NRC knows this. PW's petition provided 14 direct quotes from the actual orders, EA-12-050 and EA-13-109, that public health and safety are not protected today.

7. Starting essentially from scratch, the U.S. built the massive machine needed to win, and won World War II in 4 years. During that period a huge number of battleships and airplanes were built. It took only 16 month to build the Pentagon.

8. Any contention that 6 years is needed to install a vent or a filtered vent system is laughable. We recognize that some reactor owners do not want to spend any money. They should be given a choice – either complete installation within 18-24 months, or .permanently cease operations and begin decommissioning within two years.

B. Request Decision Include Discussion of the Following

During the PRB teleconference, PW said that any Preliminary and Final Decision should discuss and resolve the following issues.

1. Public Health & Safety:

- a. Whether the NRC has a statutory obligation to protect public health and safety.
- b. Whether any of the fourteen (14) quotes from the EA-12-050 and EA-13-109 in PW's petition acknowledging that the status quo does not protect public health and safety were accurate quotes, and whether any of the quotes are themselves in any way inaccurate.

c. Whether the NRC Commission assessment that the status quo does not protect public health and safety are incorrect; and if the Commission is incorrect, why.

d. Whether the AEA requirement to protect public safety means that such protection must be provided now and on an ongoing basis, or whether that protection only has to be provided sometime in the future such as six years later; if the latter, please explain why.

e. Whether NRC's obligation to protect public health and safety, that the Commission itself acknowledged is not provided now, necessarily includes: (i) requiring mitigation, known to be necessary, so that the reactor would not explode, breach its walls as occurred at Fukushima; (ii) filters so that radiation in excess of allowable limits is not released offsite; and (iii) rupture discs on vents to assure that they are passive and will operate absent human intervention.

f. Eric Leeds introductory letter to licensees accompanying the EA-13-109 said:

“NRC staff has determined that continued operation does not pose an imminent risk to public health and safety; however the additional requirements outlined in EA-13-109 are necessary in light of insights gained from the events at Fukushima Daiichi.” (pg., 2 letter)

“Imminent is” defined in the Free Dictionary as “About to occur; impending;” the Oxford Dictionary defines “imminent” as “about to happen.” As used in Mr. Leeds’ letter, does the word “imminent” have any different meaning, and if so what is that meaning.

Is the Commission’s statement that the status quo does not protect public health and safety correct, or is Eric Leed’s statement that continued operation does not pose a risk that is *likely to occur at any moment* to public health and safety correct. It seems clear that both cannot be right.

2. Filtering

The Order also discusses NRC's process for further action on filtering. It says "issues relating to filtering will be addressed through the rulemaking process." (EA-13-109, 5) To understand whether rulemaking is a viable option, petitioners need to know (i) the NRC's complete track record for granting, or not granting, the full substance sought in any rulemaking petition; and (ii) the range of time it has taken NRC to issue a full decision on a rulemaking petition.

3. Rupture Discs

PW's petition asked that NRC require rupture discs on the vents to make them passive – in order to provide assurance that they would open as needed. The Order itself explains their importance. Attachment 2 in EA-13-109 says that, "HCVS Functional Requirements at 1.1.1 "The HCVS shall be designed to **minimize** the reliance on operator actions."

Petitioners request some clarity as to what minimize means. Does it mean the same as Dictionary.com "reduce to the smallest possible amount or degree?" In the Commission's view, how would a rupture disc in fact "minimize the reliance on operator actions?"

With reference to Fukushima, the Order itself says:

In particular the operators were unable to successfully operate the containment venting system. These problems with venting the containments...contributed to the...hydrogen explosions that destroyed the reactor buildings...the loss of various barriers led to the release of radioactive materials that further hampered operator efforts to arrest the accident." (EA-13-109, 2)

Without rupture discs, please explain how this Commission's lesson learned from Fukushima would be satisfied.

We thank you for your attention and we look forward to reading the preliminary and final decisions and any further discussion with you on this matter.

Respectfully,

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ATTACHMENT

Cover to Time Line Document

Pilgrim Direct Torus Vent

Presented to:

Massachusetts Joint Committee on Energy

February 27, 1990

by

David C. Dixon

I. What the Direct Torus Vent is:

The vent is a new method to relieve the high pressure which is generated during a severe accident. Use of the vent discharges steam and possibly radioactive material directly to the atmosphere. The system is now operational.

II. Why the Direct Torus Vent is Important:

The DTVS is the first such installation in the world and is being used as a test case for 23 other reactors in the U.S.

The plant operators now have the ability to expose the public and the environment to radiation, by direct action, by choice.

The opening of the vent must be closely coordinated with emergency response activities.

III. What the concerns about the installation and the use of the DTVS are:

Radiation exposure to the public is possible whenever the system is used.

The DTVS shifts the possibility of direct release from a passive system, ie, steel and concrete, to human control in a plant where adherence to procedures, training, accuracy of procedures, and other human factors have been criticized for years.

There are technical risks associated with the vent.

The public and the authorities may not be fully informed about this important new capability.

Outline History of Pilgrim's Direct Torus Vent System

These documents or events indicate the history of the DTVS installation and the associated regulatory process. Comments or analysis is shown in italics. Other text is summarized from the document. Items marked with an asterisk have been included as attachments.

1. **1975, Wash 1400:** This NRC report highlighted the core damage frequencies and source terms for accidents beyond the initial design basis.
2. **Mid-1986:** The NRC staff proposed to require filtered vents on Mark 1's. *The proposal was later withdrawn under pressure from the industry.*
3. **February 1987, NUREG 1150 report:** This report documented a 90% chance of containment failure for Mark 1's in the event of a core melt.
- 4.* **May 15, 1987. BECO safety evaluation#2144:** The scope of the evaluation was only the installation, not the use of the DTVS. It concluded that a change to the Technical Specifications would be required. It was also stated that the installation of the DTVS did not involve an unreviewed safety question. The document stated that a separate safety evaluation for the use of the vent would be written. *No later safety evaluation was ever issued for the use of the vent.*
5. **July 8, 1987. BECO submits hardware modifications for the DTVS for approval to the NRC:** Procedural changes will be provided in "a subsequent revision." *There never was a subsequent revision with procedural changes issued to the NRC.*
6. **August 4, 1987. BECO makes a presentation to the NRC:** The NRC staff states that the containment venting philosophy is still under review, that they were not prepared to endorse the installation or use of the DTVS, and that a change to the Technical Specifications will be required..
- 7.* **August 21, 1987, NRC's Initial Assessment of Pilgrim Safety Enhancement Program:** "The NRC staff is not prepared to endorse the use of the DTVS. Installation of the DTVS under the provisions of 10 CFR 50.59 is precluded by the need for Technical Specifications on a containment isolation valve." A written response from BECO was requested for seven questions concerning the DTVS. *No written response to the seven questions was ever issued. Some, but not all, of the information requested was discussed at the March 6, 1989 presentation, but only the overhead slides and bullet handouts from that presentation were made public.*
8. **September, 1987. Installation of the DTVS vent line is occurring.**
9. **November 20, 1987, NRC Special Inspection report:** "...venting will not become part of the Emergency Operating Procedures unless a new safety evaluation is performed and NRC approval is obtained. The actual use of the DTVS will be addressed in another safety evaluation which will include the criteria for using the vent as well as an assessment of the consequences of using it." A change to the Technical Specifications will be required. *The safety evaluation on the use of the vent was never issued.*

- 10.* **January 9, 1988. BECO safety evaluation #2269:** The scope of the analysis is the installation, not the use of the DTVS. A change to the Technical Specifications is not required now. "Valve AO-5025 will not be installed until formal NRC approval is received." *The reasoning for no longer requiring a change to the Technical Specifications is shown on the document and discussed below. Formal NRC approval was never received prior to the installation of the vent and activation of the system.*
- 11.* **February 29, 1988 NRC letter to BECO:** NRC states that the DTVS can not be made operational because the NRC's review of operational strategy is incomplete and BECO has not responded to the seven questions asked on August 21, 1987. The NRC will review the installation and supporting documentation during the first week in March, 1988.
12. **March 6, 1988. NRC receives BECO presentation on the DTVS at Pilgrim:** Mr. Russell, Dr. Murley and Dr. Thadani were present from the NRC. The presentation scope includes the use of the DTVS. Some of the presentation materials were made public as part of NRC Inspection Report # 50-293/88-12, dated May 31, 1988.
- 13.* **March 30, 1988. NRC letter to BECO:** NRC edits the February 29, 1988 letter (item #11) to show that supporting documentation was not reviewed at the March presentations. *This is an example of NRC's attempt to avoid any implication that they have given approval for the DTVS. There may have been considerable legal wrangling within the NRC as to the liabilities of approving the DTVS, but this is only conjecture.*
- 14.* **August 18, 1988. BECO redesigns the DTVS.** "On the basis of [the revisions], we conclude that the DTVS design...does not require any change to the Technical Specifications and that we can proceed with installation without prior NRC approval." Changes included:
1. Valve AO-5025 now described as conforming to NRC requirements for a sealed closed isolation valve, ref. NUREG 00800 SRP 6.2.4. *However, a sealed closed isolation valve is one which can not be opened. Obviously, BECO intends for AO-5025 to be a functional valve, more specifically, one which can be opened from the control room: the classification as a sealed closed valve is an attempt to avoid the need for Technical Specifications and the associated public involvement.*
 2. A fuse must now be installed in order to operate AO-5025.
 3. Previously, valve AO-5025 would automatically reclose if high radiation was detected in the containment. *This function is now deleted.*
 4. Now, in order to open the inboard primary containment valve, AO-5042B, an electrical jumper must be installed if the containment pressure exceeds the trip point at which the automatic primary containment isolation signals are issued.
- The NRC has never responded to BECO's assertion that NRC approval was not required.*
- 15.* **October 12, 1988. NRC Supplemental Assessment of the Pilgrim Safety Enhancement Program:** *This analysis included no approval, no endorsement, no judgement that BECO has adequately considered the technical issues germane to the modification, no conclusion that the DTVS would improve the safety of PNPS, no agreement that the installation or use of the DTVS was acceptable under the provisions of 10 CFR 50.59. Such wording was included in NRC's analyses of the other modifications made at Pilgrim during the three year outage.*

16. January 1989 (7) The DTVS was made operational.

17. *September 1, 1989. The NRC issues Generic Letter 89-16: The document encourages licensees to install a hardened wet well vent. *Several claims are made about the benefits of a hardened wet well vent, however, some of these benefits are not available to Pilgrim, as indicated in Pilgrim's Individual Plant Evaluation. The argument that this venting capability merely is a better way of implementing pre-existing plans must also be challenged: Venting of the containment high pressure during a severe accident was not a viable option before the DTVS was installed.*

18. October 26, 1989. Letter, R.H. Wessman, Director, Division of Reactor Projects, Regions I and II, Office of Nuclear Reactor Regulation, to David Dixon, member, town appointed Nuclear Matters Committee: *Included in this letter is the first and only specific written acceptance of Pilgrim's DTVS, "We [the NRC staff] have extensively reviewed the DTV modification and the procedures for its use, should that unlikely need ever arise, and have concluded that the installation is acceptable." For three years prior to this letter, every available document belied this statement.*

Remsburg, Kristy

From: Mary Lampert <mary.lampert@comcast.net>
Sent: Friday, July 26, 2013 12:07 PM
To: NRCExecSec Resource
Cc: Guzman, Richard
Subject: PW 2.206 EA-13-109 Follow-Up (07.19.13) PRB 07.26.13
Attachments: PW 2 206 EA-13-109 FOLLOW-UP (07.19.13) PRB 07.26.13 .pdf

Hello:

Please find Pilgrim Watch's Follow-Up To PRB Meeting Of July 19, 2013-Pilgrim Watch 2.206 Petition To Immediately Suspend The Operating License Of Pilgrim Station Until The Provisions Of EA-12-050 And EA-13-109 Are Fully Implemented, Vents Augmented With Filters And Rupture Discs.

If you have any difficulty in downloading the attached document, please call Mary Lampert at 781-934-0389.

Please provide notice that the attachment was received and docketed by return email.

Thank you and enjoy the week-end.

Mary