From:	Ferdas, Marc
To:	mary.lampert@comcast.net
Cc:	Dean, Bill; Ferdas, Marc
Subject:	NRC Response - Pilgrim Watch"s Webinar Follow-Up Questions Concerning Dry Cask Storage at Pilgrim (December 13, 2013)
Date:	Friday, March 14, 2014 3:34:14 PM
Attachments:	12.13.13 PW Question Eric Beener following Webinar.pdf

Thank you for your participation in the webinar that occurred on December 12, 2013 associated with dry cask storage (aka Independent Spent Fuel Storage Installation (ISFSI) of nuclear fuel at the Pilgrim Nuclear Power Plant. I am writing you to address questions you provided to the NRC after the webinar. Copies of the slides used during the webinar and the meeting summary can be found in our electronic document system, Agency Documents Access Management System (ADAMS), by referencing the following Accession Numbers: ML14015A170 and ML14008A027. Additional information on dry cask storage can be found on the NRC web page at: http://www.nrc.gov/waste/spent-fuel-storage.html. These should assist you for some of your questions; however, I noted that a couple of your questions (attached) concerning financial assurance (Question 1c), ISFSI pad size (Question 2) and emergency planning (Question 3) were not fully addressed either during the webinar or in the meeting summary that was prepared by the NRC.

Financial Assurance

The total cost of decommissioning a reactor facility depends on many factors, including the timing and sequence of the various stages of the program, type of reactor or facility, location of the facility, radioactive waste burial costs, and plans for spent fuel storage. The NRC requires nuclear power plant licensees to report to the agency the status of their decommissioning funds at least once every 2 years, annually within 5 years of the planned shutdown, and annually once the plant ceases operation. Licensees may demonstrate financial assurance for decommissioning by one or more of the following: prepayment, surety, insurance, or parent company guarantee method, or external sinking fund. Information about these methods can be found on the NRC's web-page at: http://www.nrc.gov/waste/decommissioning/finan-assur.html. Decommissioning trust funds are held by qualified third party trustees, not the licensee; and the licensee must have a plan for spent fuel management which would include dry cask storage, as part of its decommissioning plan. In addition, NUREG 1628, "Staff Response to Frequently Asked Questions Concerning Decommissioning of Nuclear Power Reactors," dated June 2000 (ML003726190) and Regulatory Guide 1.184 (Rev 1), "Decommissioning of Nuclear Power Reactors," dated October 2013 (ML13144A840) contain information about finance and decommissioning funding you may also find useful and further address your questions in this area.

ISFSI Pad Size

The current ISFSI pad at Pilgrim has a design capacity of 40 casks. Pilgrim is currently planning to load three dry casks every other year onto the ISFSI pad. Through 2032 that would result in a total of 30 casks on the ISFSI pad. To decommission the reactor, including removing the remaining spent fuel from the spent fuel pool, additional casks would be required and construction of another ISFSI pad to accommodate these additional casks. The NRC would review the pad design and inspect the ISFSI pad construction as we have done for the current ISFSI pad.

Emergency Planning

The principal guidance with respect to emergency classifications and the extent of offsite emergency planning for ISFSIs and wet spent fuel storage not located at an operating reactor site is provided in Regulatory Guide 3.67, "Standard Format and Content for Emergency Plans for Fuel Cycle and Materials Facilities" (ADAMS Accession No. ML103360487) and NUREG-1140, "A Regulatory Analysis on Emergency Preparedness for Fuel Cycle and Other Radioactive Material Licensees" (ADAMS Accession No. ML062020791). Additional information is also provided in the Statement of Considerations (SOC) for the Final Rule for Emergency Planning Licensing Requirements for Independent Spent Fuel Storage facilities (ISFSI) and Monitored Retrieval Storage Facilities (MRS) Vol. 60, No. 120 Federal Register (FR) 32430, dated Thursday, June 22, 1995.

Following the events of September 11, 2001 immediately effective Security Orders were put in place by the NRC to assure adequate protection of the public at collocated, standalone, wet ISFSIs and permanently shutdown reactors. As part of its ongoing effort to maintain adequate protection of public health and safety, the NRC continues to evaluate threats including the possibility of a cask fire. The NRC however has not reached any conclusions in this area and has no new information indicating that this is a realistic or credible scenario which needs to be addressed.

Current Emergency Preparedness (EP) regulations do NOT take into consideration reduced consequences associated with potential accidents that may occur at a nuclear power reactor that has permanently ceased operations and transferred irradiated fuel from the reactor pressure vessel to the spent fuel pool (SFP). Historically, exemptions have been used to grant regulatory relief on a case-by-case basis consistent with the requirements of 10 CFR 70.32 for an ISFSI. NUREG-1738, "Technical Study of Spent Fuel Pool Accident Risk at Decommissioning Nuclear Power Plants," (ADAMS Accession No. ML010430066) provides a technical basis for the NRC's evaluation of EP exemption requests. The NRC does not require formal offsite emergency planning for permanently shutdown and defueled nuclear power reactors after the postulated doses to the general public from any reasonably conceivable accident would not exceed EPA PAGs and, for the bounding accident, the length of time available gives confidence that actions to mitigate and, if necessary, offsite measures for the public could be taken without preplanning. The relaxation of formal offsite emergency planning must receive prior approval through the 10 CFR 50.12 exemption process.

Marc S Ferdas

Chief, Decommissioning & Technical Support Branch (NRC/Region I/DNMS)
610-337-5022 (work)
484-401-8160 (cell)
marc.ferdas@nrc.gov

From: Mary Lampert [mailto:mary.lampert@comcast.net]
Sent: Friday, December 13, 2013 11:23 AM
To: 'opa1@nrc.gov'
Cc: 'eric.benner@nrc.gov'; michal freedhoff (michal_freedhoff@markey.senate.gov); 'Dave Lochbaum'
Subject: Pilgrim Watch's Webinar Follow-Up Questions Concerning Dry Cask Storage at Pilgrim (December 13, 2013)

Hello:

Attached please find, *Pilgrim Watch's Webinar Follow-Up Questions Concerning Dry Cask Storage at Pilgrim (December 13, 2013).* If you have difficulty downloading the documents, please call Mary Lampert at 781-934-0389.

Thank you and have a good day.

Mary

Eric Benner
NRC
opa1@nrc.gov

Hello Eric:

Pilgrim Watch's Webinar Follow-Up Questions Concerning Dry Cask Storage at Pilgrim (December 13, 2013)

Q. 1 Pilgrim is owned and operated by Entergy Nuclear Generation Company and Entergy Nuclear Operations, Inc. Each of these is a separate, limited liability corporation.

Questions

a. Which of these is responsible (financially and on an on-going basis) for dry cask storage at Pilgrim after Pilgrim ceases operations?

b. Is any other entity financially responsible for dry cask storage at Pilgrim after Pilgrim ceases operations?

c. If either or both of these should cease to exist, because of bankruptcy or any other reason, who would be responsible, financially and otherwise, for dry cask storage at Pilgrim.

Q.2 You said yesterday that the only pad that would be required for dry cask storage of all of Pilgrim's spent nuclear fuel, even if Pilgrim continues to operate until 2032, would be the pad currently under construction that has a capacity of 40 dry casks.

Questions

a. In saying this, did you take into account that the Pilgrim spent fuel pool currently contains about 3300 spent fuel assemblies, that more than 1500 more spent fuel assemblies will be generated between now and 2032, and that the reactor contains 580 assemblies?

b. Did you take into account that dry casks will have to accommodate all of these and that Entergy has told the public that it would have to build a new pad?

Q.3 Eric, you said yesterday that NRC's analysis showed that "Alert" Emergency Action Level was the highest emergency level that an ISFI accident would reach. However, we understand that:

(1) Dry casks storage casts are vulnerable to malicious attack that could result in a cask fire. Please see attached document, *Environmental Impacts of Storing Spent Nuclear Fuel and High-Level Waste from Commercial Nuclear Reactors: A Critique of NRC's*

Waste Confidence Decision and Environmental Impact Determination, Dr. Gordon R. Thompson, February 6, 2009, Ch. 7 and Tables 7-2 thru 8-2.

(2) The consequences of a dry cask fire release were estimated for the Massachusetts Attorney General to be approximately ½ the Cs-137 as was released in Chernobyl Please see the attachment, *The Massachusetts Attorney General's Request for a Hearing and Petition for Leave to Intervene With respect to Entergy Nuclear Operations Inc.'s Application for Renewal of the Pilgrim Nuclear Power Plants Operating License and Petition for Backfit Order Requiring New Design features to Protect Against Spent Fuel Pool Accidents*, Docket No. 50-293, May 26, 2006 includes a *Report to The Massachusetts Attorney General On The Potential Consequences Of A Spent Fuel Pool Fire At The Pilgrim Or Vermont Yankee Nuclear Plant,* Jan Beyea, PhD., May 25, 2006.

Questions

a. Based on the vulnerability of dry casks and the consequences of a cask fire, how can NRC justify that an "Alert" is the worst case scenario and not require offsite emergency planning while spent fuel remains onsite? Please provide the Adams MLs for any referenced analyses.

b. Please provide references to any NRC rule or policy that says, implies and/or justifies not requiring offsite emergency planning after operations cease and waste remains onsite.

c. We believe that offsite emergency planning should certainly continue when the assemblies are in dry casks. It may be different than offsite emergency plans for a reactor accident. For example, sheltering could often be appropriate in the case of a reactor release, but would be less appropriate for a cask release. Also, thyroid blocking would be irrelevant in a cask release. Please reference any studies, NUREGs etc for offsite emergency planning in the event of a cask fire.

d. Did your statement during the Webinar also mean that only an "Alert" Emergency Action Level would result if there were an accident when the assemblies were in both the pool and cask(s) after operations cease; and therefore offsite emergency planning would not have to continue and the licensee would not have to pay EPZ communities for their radiological emergency planning expenses? Please provide the Adams MLs for any referenced analyses and documents.

Thank you and we look forward to your responses and inclusion in the meeting summary of all questions and responses to those questions by NRC.

Mary Lampert
Pilgrim Watch
Duxbury Nuclear Advisory Committee
148 Washington Street

Duxbury MA 02332
Tel. 781-934-0389
Email: mary.lampert@comcast.net