



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION I
2100 RENAISSANCE BLVD., SUITE 100
KING OF PRUSSIA, PA 19406-2713

March 9, 2015

LICENSEE: Entergy Nuclear Operations, Inc. (Entergy)
FACILITY: Vermont Yankee Nuclear Power Station (Vermont Yankee)
SUBJECT: SUMMARY OF THE FEBRUARY 5, 2015, PUBLIC WEBINAR REGARDING THE
DECOMMISSIONING OF VERMONT YANKEE

On February 5, 2015, the U.S. Nuclear Regulatory Commission (NRC) held a two-part public webinar to discuss NRC's decommissioning process for nuclear power reactors and how it relates to Vermont Yankee. During the first part of the webinar, the NRC staff presented information about the decommissioning process and how the NRC oversees it through on-site inspections and other regulatory reviews. The second part of the webinar provided members of the public with an opportunity to submit questions in writing on topics discussed during the first part of the webinar and other decommissioning related subjects. Enclosure 1 is a list of those who participated in the webinar. The following NRC staff provided presentations during the webinar: Neil Sheehan (Public Affairs Officer, Region I), Marc Ferdas (Chief, Region I/Division of Nuclear Material Safety/Decommissioning & Technical Support Branch) and Bruce Watson (Chief, Office of Nuclear Material Safety & Safeguards/Division of Decommissioning, Uranium Recovery, & Waste Programs/Reactor Decommissioning Branch).

Copies of the slides used by the NRC staff during the webinar can be accessed through the NRC's Agency wide Document Access and Management System (ADAMS) Accession Number ML15036A468. The NRC staff responded to numerous questions that were submitted through the webinar process. The questions covered many topics, including decommissioning trust fund, radiological clean-up criteria, NRC regulations on decommissioning, and NRC oversight. Enclosure 2 contains the answers to questions that were submitted during the webinar but not answered during the allocated time.

Sincerely,

/RA/

Marc S. Ferdas, Chief
Decommissioning & Technical Support Branch
Division of Nuclear Materials Safety

Docket Nos. 50-271
License No. DPR-28

Enclosures:

1. Public Webinar Attendees
2. Questions Received by the NRC During the Pilgrim ISFSI Webinar Not Answered in the Allotted Time

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OFFICE	RI/DNMS	RI/ORR	NMSS	RI/DNMS	
NAME	MFerdas/msf	NSheehan/ns	BWatson/bw	MFerdas/msf	
DATE	3/3/2015	3/3/2015	3/3/2015	3/9/2015	

OFFICIAL RECORD COPY

Enclosure 1 - PUBLIC WEBINAR
ATTENDEES

Last Name	First Name	Organization
Abraham	Cini	Department of Public Service
Alber	Ted	Huntington Ingalls Industries - Newport News Shipbuilding Division
Alleshwaram	Aparna	Structural Integrity Associates, Inc.
Andolina	Philip	Interested citizen
Bergman	Jana	Scientech
Baldoni-Lake	Ramona	Wisconsin Emergency Management- REP Program
Berry	Tom	U.S. Senate Staff
Best	Ralph	PNNL
Boing	L E	ANL
Cameron	Francis	
Chembars	Pat	
Christmann	Noel	
Costello	Cynthia	NYS Department of Health
Couture	Phil	
Covello	Philip	Evercore ISI
Cowan	Pam	Exelon Generation
Cruz	Zahira	
Daigle	David	Enercon Services, Inc.
Dostie	Pat	State of Maine
Dubov	Leon	
Dwyer	Joseph	Exelon Nuclear Security
Ehrhard	Marie	EDF - France
Ferdas*	Marc	NRC/Region1
Ferrell	Audrey	Texas Low-Level Radioactive Waste Disposal Compact Commission
Furr	Richard	AREVA
Gould	Schuyler	
Gropp	Richard	Exelon Generation
Gunter	Paul	Beyond Nuclear
Haemer	Robert	AEP
Hammann	Stephen	NRC/Region 1
Hart	John	Accion Group
Helfrich	Robert	NAC International Inc.
Hilbrandt Jr.	Robert	Westchester County Dept. of Laboratories & Research
Hoffman	Ace	Nuke-Free North County (San Diego, California)
Hofmann	Sarah	NECPUC
Ing	Leigh	Texas Low-Level Radioactive Waste Disposal Compact Commission
Jablonski	Amanda	Deborah Goodell Polan, PC
Jacobi	Rick	Jacobi Consulting

Last Name	First Name	Organization
Jensen	Philip	Pacific Northwest National Lab
Jones	Ryan	FEMA R1 REP
Kamps	Kevin	Beyond Nuclear
Karalekas	Patrick	MMWEC
Keppler	John	Chesterfield Emergency Management
Kisicki	Aaron	Vermont Department of Public Service
Klukan	Brett	NRC Region I
Kuyler	Ray	Morgan Lewis
Lampert	Mary	Pilgrim Watch
Landis-		
Marinello	Kyle	Vermont Attorney General's Office
Leshinskie	Tony	State of Vermont / Public Service Department
Lessard	Leo	AREVA Inc.
Lewis	Marvin	member of the public
Lindsay	Peter	ASCO Valve
Locke	Paul	Johns Hopkins
Lynch	Joseph	Entergy Vermont Yankee
Maguire	William	Entergy
Maheras	Sterve	PNNL
Mahoney	Sheri	Entergy Services Inc.
Matthews	Timothy	Morgan Lewis & Bockius LLP
Maurer	William	Cape Downwinders
McGrath	Richard	Electric Power research Institute
Menniti	Amanda	Entergy
Minkin	Stephen	
Muszynski	George	NH Homeland Security and Emergency Management
Nealon	John	
Porter	Felice	EHS-CWRU
Page	Guy	Vermont Energy Partnership
Parrott	Jack	US NRC
Pero	Haley	Office of U.S. Senator Bernie Sanders
Pierce	Norman	Concerned Neighbors of Pilgrim
Raimo	Susan	Entergy
Rainville	David	The Recorder
Rich	Sarah	U.S. NRC
Robertson	Kristi	Entergy Services, Inc.
Ross	Steven	PNNL
Rothstein	Richard	Town of Plymouth Nuclear Matters Committee
Sackett	Richard	Waste Control Specialists "WCS"
Sanchez	Joseph	EDF Inc.
Scherer	Brian	State of NH, Radiochemistry lab

Last Name	First Name	Organization
Schoppy	Joseph	NRC/Region I
Schwartz	Paul	State of New Jersey DEP
Selig	Edward	Advocates for Responsible Disposal in Texas (ARDT)
Shelanskey	Steven	Anata Management Solutions
Sheehan*	Neil	NRC/Region I
Shihsing	Chang	NRC/Region I
Simpson	James	Plymouth Nuclear Matters Committee
Smallheer	Susan	Rutland Herald
Snow	Robert	FERC
Sullivan Sachs	Leslie	Safe and Green Campaign
Taylor	Ifford	U.S. Army Corps of Engineers
Thurman	Kari	
Trikouros	Nick	NRC
Tuccillo	Karen	NJDEP Bureau of Nuclear Engineering
Turnbull	Clay	New England Coalition on Nuclear Pollution
Volpi	Mike	Entergy
Waters	Christine	Ux Consulting
Watson*	Bruce	NRC/NMSS
Wilson	Adria	U.S. Senate Office of Bernie Sanders
Zak	Ron	NJDEP - Bureau of Nuclear Engineering
Edwards	Juliann	CB&I - Power
Pendl	Leila	Entergy
Tanabe	Drew	

*Provided presentation during the webinar.

**Enclosure 2 - Questions Received by the NRC During the Vermont Yankee
Decommissioning Webinar Not Answered in the Allotted Time**

1. What is the definition of “significant” decommissioning work?

“Significant” decommissioning work is often referred to as major decommissioning. Major decommissioning is defined in the Code of Federal Regulation (CFR) under 10 CFR 50.2. Major decommissioning at a nuclear power reactor facility refers to any activity that results in permanent removal of major radioactive components, permanently modifies the containment building, or results in the dismantling of components for shipment containing greater than Class C waste. The definition of Class C waste can be found in 10 CFR 61. Some examples of major decommissioning are the removal of the reactor vessel, steam generators, and other components that are comparably contaminated.

2. Is it correct that the NRC only required one cask inspection in 25 years?

Visual exams to check for vent blockage of dry cask storage systems occur frequently by the licensee during the initial license period and the period of renewed operation for the cask. An inspection by the licensee for canister/concrete degradation typically begins at the period of renewed operation at year 20 and occurs at five year intervals thereafter. However, this periodicity can change depending on operational experience derived from the inspections by the licensee. The NRC would perform oversight of the licensee’s inspections of the dry cask storage system to ensure that the scope and frequency of the inspections were adequate and to determine if any changes were warranted.

3. Do NRC regulations permit spent fuel being moved from the spent fuel pool to the Independent Spent Fuel Storage Installation (ISFSI) pad earlier than 5 years of discharge from the reactor?

Typically spent fuel is cooled for five years or more before it is placed in dry cask storage. There are some cask designs that allow for fuel to be cooled for three years prior to placing in dry cask storage. However, the exact time period is governed in the certificate of compliance (CoC) or license for the specific storage system.

4. Is aircraft impact on spent fuel pool considered a “credible event”?

The NRC initiated several security and engineering reviews based on the 2001 terror attacks. These reviews looked at what might happen if terrorists used an aircraft to attack a nuclear power plant. The NRC also assessed the potential consequences of other types of terrorist attacks. To assist the NRC, experts from Department of Energy's laboratories used state-of-the-art experiments and structural and fire analyses. While the details are classified, the studies confirm the likelihood of a radioactive release affecting public health and safety is low. Another study analyzed how nuclear power plants would withstand damage to, or loss of, large areas of the plant caused by large fires or explosions. Based on the insights from these studies, additional mitigating capabilities to minimize loss and damage were put in place at all nuclear power plants.

Current NRC regulations [10 CFR 50.54(hh)] require licensees to develop, implement and maintain procedures that describe how the licensee would respond if notified of a potential aircraft threat. It further requires licensees to develop and implement guidance and strategies intended to maintain or restore core cooling, containment, and spent fuel pool capabilities.

- 5. What submittals does the licensee need to submit to the NRC prior to commencing construction of the new ISFSI? No modification to the Part 50 license is required, correct?**

NRC authorizes storage of spent nuclear fuel at an ISFSI in two ways: site-specific or general license. Vermont Yankee plans to operate and construct its second dry cask storage pad under a general license, similar to how it operates its current dry cask storage pad. A general license authorizes storage of spent fuel in casks previously approved by the NRC at a site already licensed to possess fuel to operate a nuclear power plant. Licensees must show the NRC that it is safe to store spent fuel in dry casks at their site, and requires per NRC regulations (10 CFR 72.212) a site evaluation for compatibility with the cask design. This evaluation is subject to NRC inspection.

- 6. How many years will it take for Vermont Yankee to transfer all spent nuclear fuel from the pool to dry cask during the SAFSTOR timeframe of 2016-2068?**

As stated in the Post Shutdown Activities Report (PSDAR) submitted by Entergy to the NRC on December 19, 2014 (ADAMS Accession No. ML14357A110), spent nuclear fuel from the pool to dry cask storage would occur from 2017-2020.

- 7. Didn't Vermont Yankee actually "lose" a fragment of irradiated nuclear fuel in the past? How will NRC prevent Entergy from "losing" highly radioactive nuclear fuel in the future?**

In April 2004, with the reactor shutdown for a refuel outage, an inventory of Special Nuclear Material (SNM) located in the spent fuel pool revealed that two fuel rod pieces, were not in their designated storage location per site records. Entergy performed an investigation and ultimately located the two segments in another area of the spent fuel pool. Information concerning this event can be found in NRC Inspection Reports 05000271/2004002 (ADAMS Accession No. ML041240438) and 05000271/2004007 (ADAMS Accession No. ML043340149). Additional information can also be found in Licensee Event Reports, 2004-02-00 (ADAMS Accession No. ML041750116) and 2004-02-01 (ADAMS Accession No. ML042810221). As a result of the NRC inspections, Entergy was issued a violation and took corrective actions to address the deficiencies identified. The NRC continues to perform inspections in the area of material control and accounting.

- 8. Didn't radioactively contaminated soil from Connecticut Yankee end up on a children's baseball diamond or playground? Haven't radioactively contaminated cinder blocks from a U.S. atomic reactor ended up being donated for off-site public use, leading to the eventual dismantlement of structures built, as a matter of radiological safety? How will NRC prevent unacceptable hazardous "recycling" of radiological contaminated substances from Vermont Yankee's decommissioning?**

In 1997, NRC staff confirmed an earlier Connecticut Yankee report that soil with very low levels of radioactive contamination had been removed from the site and used for fill material at offsite locations. Although detectable, the levels of radioactive contaminants were less than the required detection limit for release of soil. NRC staff also confirmed the release of concrete blocks from the Connecticut Yankee site, many of which were radioactively contaminated. In this case, the blocks had not been properly surveyed for radioactive contamination upon release from the site. Potential radiation doses to workers and the public were determined to be within the requirements of the NRC regulations in 10 CFR Part 20.

As part of the decommissioning oversight process, the NRC conducts inspections in the area of radiological controls. Since that period of time, the NRC has provided improved guidance (NUREG 1575, Rev1 and NUREG 1757) on radiological surveys and decommissioning methodologies to licensees. Also, more sensitive radiological measurement methods are now available which allow for better evaluations of potentially radioactive contaminated material prior to its release from facilities.

Additional information concerning the events discussed above can be found in the NRC electronic public docket room under ADAMS Accession Nos. ML042870511, ML042120065, and ML031780527.

9. Is there any real time radiological monitoring of the ISFSI?

The CoC for the dry cask system (HOLTEC HI-STORM 100) being used at Vermont Yankee does not require real-time radiological monitoring to assure the safe storage of spent fuel within the dry cask system. Prior to being placed on the ISFSI pad, the welds are examined and tested to confirm their integrity, and radiation measurements are taken. In accordance with the CoC for the system being used, a surveillance of the passive heat removal system (air inlet and outlet vents) is required daily to ensure system operability. This can be achieved either by monitoring the inlet and outlet vent temperatures or performing a visual inspection daily to ensure the vents do not become blocked and that the passive heat removal system remains operable.

TLDs have been widely used at ISFSIs to monitor radiological conditions around the dry cask storage systems, including Vermont Yankee. The TLDs are passive devices that are removed and measured every month. In addition, the licensee takes radiological measurements on the outside of the casks monthly.

10. Aren't Radiological Environmental Monitoring Program (REMP) inspections by the NRC performed every other year and not annually?

The REMP continues after a plant is shut down and enters decommissioning. The program can be modified by the licensee to appropriately monitor the types of releases that may occur during decommissioning and to monitor results at the appropriate intervals. Under the oversight program for operating plants [Inspection Procedure (IP) 71124.07], REMP inspections are performed biennially. However, as directed by the oversight program for shutdown plants (Inspection Manual Chapter 2561 and IP 84750), REMP inspections are performed annually.