

March 26, 2015

Ms. Hillary Hoffman  
President, Greenfield Town Council  
Town Hall  
14 Court Square  
Greenfield, MA 01301

SUBJECT: EMERGENCY PLANNING ZONE - VERMONT YANKEE

Dear Ms. Hoffman:

I am writing in response to your memorandum dated February 3, 2015, regarding the Town of Greenfield, Massachusetts Resolution, in which you expressed concerns regarding exemptions requested by Entergy Nuclear Operations, Inc. (ENO) for the Vermont Yankee Nuclear Power Station's Emergency Preparedness (EP) Plan. Your memorandum specifically requested assurance that emergency planning zone funding is continued until all spent fuel is moved to dry cask storage and that off-site authorities continue to receive the earliest possible notice of emergency situations at the plant.

The EP requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.47, "Emergency Plans," and 10 CFR Part 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," continue to apply to a nuclear power reactor after permanent cessation of operations and removal of fuel from the reactor vessel. There are no explicit regulatory provisions distinguishing EP requirements for a power reactor that has been shut down from those for an operating power reactor. However, a shut-down reactor presents significantly fewer types of possible accidents than does an operating reactor and significantly lowers the risks to the public health and safety as compared to an operating reactor.

The U.S. Nuclear Regulatory Commission (NRC) regulations permit licensees to seek an exemption from a regulatory requirement in cases where continued application of the regulation to the licensee to maintain its current level of EP is not necessary to achieve the underlying purpose of the regulation. To modify their EP plans to reflect the risk commensurate with power reactors that have been permanently shut down, several power reactor licensees transitioning to decommissioning have sought exemptions from certain EP regulatory requirements before amending these plans. ENO has submitted such an exemption request for the Vermont Yankee Nuclear Power Station.

When the licensee of an operating reactor decides to permanently cease operations and permanently defuels the reactor (i.e., when the reactor enters decommissioning), the primary risk to the public is associated with the spent fuel stored in the spent fuel pool (SFP). However, the risk of a radiological release from an SFP at a decommissioning plant is also lower than that from an SFP at an operating facility for the following reasons. First, fission product gases contained in spent fuel decay away within months after the fuel is last used to operate the reactor. Once the fission product gases have decayed to acceptable levels, there are no design-basis accidents (DBAs) that can result in an off-site release that would exceed the Environmental Protection Agency's (EPA's) Protective Action Guidelines (PAGs). In addition, the decay heat generated by the spent fuel continues to decrease over time as the fission

products in the fuel decay. Since no new spent fuel is being added to the SFP, the heat load in the SFP will decrease over time, thereby increasing the time available to respond and mitigate challenges to the stored spent fuel. Based on the slower evolution of potential events involving the SFP due to the continually decreasing heat generated by the spent fuel, the NRC has determined that sufficient time would be available for the licensee to take prompt mitigation measures consistent with plant conditions and, if necessary, for off-site authorities to implement protective action using a comprehensive emergency management plan (CEMP) (i.e., an all-hazards approach) to ensure public health and safety. This also serves as the basis for the increase in off-site notification time requested by ENO for the Vermont Yankee Nuclear Power Station, which is consistent with previous exemptions granted by the NRC to other licensees.

The NRC staff's technical evaluation of ENO's request for exemptions from certain EP requirements of 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," is discussed in a paper that the NRC staff has provided to the Commission, SECY-14-0125, "Request By Entergy Nuclear Operations, Inc. for Exemptions from Certain Emergency Planning Requirements," dated November 14, 2014. The paper is publicly available in the NRC's Agencywide Documents Access and Management System (ADAMS) under Accession No. ML14227A711. The NRC staff's review determined that there is reasonable assurance that in granting the requested exemptions to ENO: (1) an off-site radiological release would not exceed the EPA PAGs at the site boundary for a DBA; and (2) in the unlikely event of a beyond-DBA resulting in a loss of all SFP cooling, the licensee would have sufficient time to initiate appropriate mitigating actions consistent with plant conditions and, if a release is projected to occur, offsite agencies would have sufficient time to take protective actions using a CEMP to protect the health and safety of the public. The exemptions from the EP requirements, as requested by ENO, are consistent with the exemptions previously granted for other permanently shut-down and defueled power reactors.

On March 2, 2015, the Commission issued its final Staff Requirements Memorandum (ADAMS Accession No. ML15061A516), whereby the Commission approved the staff's recommendation in SECY-14-0125, to grant ENO's request for exemptions from certain emergency planning requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50 for Vermont Yankee Nuclear Power Station.

With respect to the notification timing requirements, the NRC regulations establish the requirements for nuclear power reactor licensees to notify State and local governmental authorities within 15 minutes. This requirement was established to ensure the capability for rapid notification of the public during a serious reactor emergency, with a design objective of completing the initial notification to the public within 15 minutes after notification by the licensee. With the permanent cessation of reactor operations and relocation of the fuel to the SFP, the need for the prompt notification (within 15 minutes) to the public is not required for the reasons discussed previously. The change to a 60-minute notification requirement is consistent with the regulations in 10 CFR 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High-level Radioactive Waste, and Reactor-related Greater than Class C Waste." The regulations in 10 CFR Part 72 are applicable to wet and dry modes of storage of spent fuel, similar to the status of the Vermont Yankee Nuclear Station. As discussed previously, with the permanent cessation of reactor operations and relocation of the fuel to the SFP, a shut-down reactor presents significantly fewer types of possible accidents than does an operating reactor and significantly lowers the risks to the public health and safety as compared to an operating reactor.

With respect to funding of off-site emergency planning, the NRC regulations establish the requirements for a licensee's radiological EP plans to ensure that the nuclear power plant operator is capable of implementing adequate measures to protect public health and safety in the event of a radiological emergency. While it is within the jurisdiction of the NRC to confirm that its EP requirements are met, the NRC does not have the ability to enforce the particular terms of the funding agreements negotiated between the licensee and the State.

Thank you for your interest in these matters. The NRC shares your concern with ensuring the safety of the Vermont Yankee Nuclear Power Station and the communities surrounding the site. The NRC will continue its oversight of the licensee's activities, as appropriate, and hold the licensee accountable for ensuring its emergency response program is maintained in a state of readiness for protecting the public health and safety.

If you have further questions, please feel free to contact Ms. Nancy McNamara, Regional State Liaison Officer at (610) 337-5337, or Mr. Joseph Anderson of my staff at (301) 287-9300.

Sincerely,

*/RA/*

Robert J. Lewis, Director  
Division of Preparedness and Response  
Office of Nuclear Security and Incident Response

cc: Governor Charlie Baker  
U.S. Senator Edward Markey  
U.S. Senator Elizabeth Warren  
U.S. Representative James McGovern  
State Senator Stanley Rosenberg  
State Representative Paul Mark  
Commissioner Christopher Recchia,  
Vermont Department of Public Service  
Kurt Schwartz, Director, Massachusetts  
Emergency Management Agency  
Anthony Leshinskie, Decommissioning Coordinator  
John Giarrusso, State Liaison Officer, Massachusetts  
Emergency Management Agency

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/RA/

Robert J. Lewis, Director  
 Division of Preparedness and Response  
 Office of Nuclear Security and Incident Response

- cc: Governor Charlie Baker
- U.S. Senator Edward Markey
- U.S. Senator Elizabeth Warren
- U.S. Representative James McGovern
- State Senator Stanley Rosenberg
- State Representative Paul Mark
- Commissioner Christopher Recchia,  
 Vermont Department of Public Service
- Kurt Schwartz, Director, Massachusetts  
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**\*via email**

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