



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

March 2, 2015

COMMISSION VOTING RECORD

DECISION ITEM: SECY-14-0125

TITLE: REQUEST BY ENTERGY NUCLEAR OPERATIONS, INC.,  
FOR EXEMPTIONS FROM CERTAIN EMERGENCY  
PLANNING REQUIREMENTS

The Commission acted on the subject paper as recorded in the Staff Requirements Memorandum (SRM) of March 2, 2015.

This Record contains a summary of voting on this matter together with the individual vote sheets, views and comments of the Commission.

Annette L. Vietti-Cook  
Secretary of the Commission

Attachments:

1. Voting Summary
2. Commissioner Vote Sheets

cc: Chairman Burns  
Commissioner Svinicki  
Commissioner Ostendorff  
Commissioner Baran  
OGC  
EDO  
PDR

VOTING SUMMARY - SECY-14-0125

RECORDED VOTES

	APRVD	DISAPRVD	ABSTAIN	NOT PARTICIP	COMMENTS	DATE
CHRM. BURNS	X				X	2/20/15
COMR. SVINICKI	X				X	2/13/15
COMR. OSTENDORFF	X				X	1/21/15
COMR. BARAN	X		X		X	2/10/15

**NOTATION VOTE**

**RESPONSE SHEET**

**TO:** Annette Vietti-Cook, Secretary  
**FROM:** Chairman Burns  
**SUBJECT:** SECY-14-0125: REQUEST BY ENTERGY NUCLEAR OPERATIONS, INC., FOR EXEMPTIONS FROM CERTAIN EMERGENCY PLANNING REQUIREMENTS

Approved  X  Disapproved \_\_\_\_\_ Abstain \_\_\_\_\_

Not Participating \_\_\_\_\_

**COMMENTS:** Below  X  Attached \_\_\_ None \_\_\_

I approve the staff's proposal to grant the exemptions from certain emergency planning requirements requested by Entergy Nuclear Operations, Inc. (Entergy) for the Vermont Yankee Nuclear Power Station site. As with past exemption requests, the NRC staff has verified Entergy's analyses and calculations supporting its assertion that granting the exemptions will be protective of public health and safety. The requested exemptions are consistent with previously granted exemptions and are commensurate with the risk associated with power reactors that have been permanently shut down.

I appreciate Commissioner Baran's suggestion of implementing a graded approach, as proposed by the staff but not approved by the Commission in 2000, to the relaxation of emergency preparedness requirements for decommissioning reactors. However, I do not want to get ahead of the staff's efforts on a generic decommissioning rulemaking. There is much to be learned from what has transpired since the staff's proposal in 2000, and we should allow the staff time to perform an up-to-date evaluation of the available information to inform a decision on appropriate generic requirements for plants that are under decommissioning. In the meantime, our current practice of approving exemptions based on site-specific evaluations, such as those performed by the staff in reviewing the Entergy exemption request, is sound. As I have stated before, I am strongly supportive of a generic rulemaking. I am pleased that the staff is proceeding with such a rulemaking while maintaining its focus on licensing actions for the current plants transitioning to decommissioning.



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**SIGNATURE**

20 February 2015

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**DATE**

Entered on "STARS" Yes  x  No \_\_\_

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary  
FROM: COMMISSIONER SVINICKI  
SUBJECT: SECY-14-0125: REQUEST BY ENTERGY NUCLEAR OPERATIONS, INC., FOR EXEMPTIONS FROM CERTAIN EMERGENCY PLANNING REQUIREMENTS

Approved XX Disapproved \_\_\_\_\_ Abstain \_\_\_\_\_

Not Participating \_\_\_\_\_

COMMENTS: Below \_\_\_\_\_ Attached XX None \_\_\_\_\_



\_\_\_\_\_  
SIGNATURE

02/ 13 /15  
\_\_\_\_\_  
DATE

Entered on "STARS" Yes  No \_\_\_\_\_



**Commissioner Svinicki's Comments on SECY-14-0125  
Request by Entergy Nuclear Operations, Inc., for Exemptions from  
Certain Emergency Planning Requirements**

In a letter dated January 12, 2015, Entergy Nuclear Operations (ENO), Inc. certified to the NRC that a determination to permanently cease power operations at Vermont Yankee Nuclear Power Station (VYNPS) was made on December 29, 2014, which was the date on which power operations ceased at VYNPS. Pursuant to 10 CFR 50.82(a)(1)(ii), ENO also certified that the fuel has been permanently removed from the VYNPS reactor vessel and placed in the spent fuel pool.

I approve the staff's recommendation to grant ENO's request for exemptions from certain requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. The staff has determined that these exemptions, if granted, will result in a level of emergency planning and preparedness that is commensurate with the risk associated with the facility's hazards. The NRC has determined that pursuant to 10 CFR 50.12, "Specific Exemptions," the exemptions requested by ENO are authorized by law, will not present an undue risk to the public health and safety, will be consistent with the common defense and security, and special circumstances are present. The NRC staff concludes that granting the requested exemptions will provide: (1) an adequate basis for an acceptable state of emergency preparedness and (2) in conjunction with arrangements made with offsite response agencies, reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at VYNPS.

I concur in the staff's view that the requested exemptions are consistent with exemptions recently granted for Kewaunee Power Station and commensurate with the risk associated with the facility. I do not view events or conditions at Crystal River Unit 3 as providing an apt comparison for regulatory purposes, as the protracted licensee review of the delamination event and analysis of its potential repair resulted in a multiyear period of shutdown prior to the licensee decision to proceed to a final decision on a permanent cessation of operations. This prolonged cooling period was an outgrowth of business decision making at Crystal River and has no bearing on the staff's risk analysis here. Finally, I observe that the staff's draft tiered approach to emergency planning for decommissioning plants -- abandoned when the decommissioning rulemaking itself was aborted over ten years ago -- was never promulgated through the rulemaking process nor adopted as Commission or agency policy and is, therefore, not an operative basis for denying the pending exemption request, in whole or in part.

  
\_\_\_\_\_  
Kristine L. Svinicki

02/15

**NOTATION VOTE**

**RESPONSE SHEET**

**TO:** Annette Vietti-Cook, Secretary

**FROM:** COMMISSIONER OSTENDORFF

**SUBJECT:** SECY-14-0125: REQUEST BY ENTERGY NUCLEAR OPERATIONS, INC., FOR EXEMPTIONS FROM CERTAIN EMERGENCY PLANNING REQUIREMENTS

Approved XX Disapproved \_\_\_\_\_ Abstain \_\_\_\_\_

Not Participating \_\_\_\_\_

**COMMENTS:** Below XX Attached \_\_\_ None \_\_\_

I commend the staff for its thorough technical analysis of the Emergency Planning (EP) exemptions requested by Entergy Nuclear Operations, Inc. As stated in the SECY paper, with the significant reduction in radiological risk for a power reactor undergoing decommissioning, the NRC has historically approved exemptions to EP and security requirements based on site-specific evaluations and the objectives of the regulations. The Commission recently approved Duke Energy Florida's EP exemption request for Crystal River in SRM-SECY-14-0118. For the same reasons, and based on the staff's thorough analysis of EP at Vermont Yankee, I approve the staff's recommendation to grant Entergy's request for exemptions from certain EP requirements in 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50, to be implemented no sooner than April 15, 2016.

While I continue to support issuance of appropriately justified plant-specific exemptions for plants transitioning to decommissioning, I look forward to the staff's upcoming paper with a plan to address these matters in a more generic and holistic fashion.

  
\_\_\_\_\_  
**SIGNATURE**

1/21/15  
\_\_\_\_\_  
**DATE**

Entered on "STARS" Yes \_\_\_ No \_\_\_

NOTATION VOTE


RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary  
FROM: Commissioner Baran  
SUBJECT: SECY-14-0125: REQUEST BY ENTERGY NUCLEAR OPERATIONS, INC., FOR EXEMPTIONS FROM CERTAIN EMERGENCY PLANNING REQUIREMENTS

Approved XX Disapproved XX Abstain \_\_\_\_\_

Not Participating \_\_\_\_\_

COMMENTS: Below \_\_\_ Attached XX None \_\_\_

  
\_\_\_\_\_  
SIGNATURE

2/10/15  
\_\_\_\_\_  
DATE

Entered on "STARS" Yes ✓ No \_\_\_\_\_



## **Commissioner Baran's Comments on SECY-14-0125, "Request by Entergy Nuclear Operations, Inc., for Exemptions from Certain Emergency Planning Requirements"**

### **Introduction**

As I discussed in my vote on the exemption requests for Crystal River Unit 3 (SECY-14-0118), the risk profile of a permanently shut down reactor entering decommissioning is very different than that of an operating reactor. However, NRC currently does not have regulations specifically tailored for permanently shut down reactors. Because of this gap in NRC's regulatory framework, licensees with reactors transitioning to decommissioning routinely have sought exemptions to many of the regulations applicable to operating reactors. In the Staff Requirements Memorandum (SRM) for SECY-14-0118, the Commission directed the NRC staff to proceed with rulemaking on decommissioning. Until this rulemaking is completed, the Commission is reviewing exemption requests from certain emergency planning requirements for permanently shut down reactors on a case-by-case basis.

### **Vermont Yankee Nuclear Power Station Exemption Request**

Entergy Nuclear Operations seeks exemptions from a range of NRC emergency preparedness requirements at Vermont Yankee, which permanently shut down on December 29, 2014. The NRC staff reviewed Entergy's request and recommended that the exemptions be granted because, consistent with prior exemption requests:

the radiological consequences of design-basis accidents (DBAs) would not exceed the limits of the U.S. Environmental Protection Agency's (EPA) Protective Action Guides (PAGs) at the exclusion area boundary and that the spent fuel stored in the spent fuel pool (SFP) would not reach the zirconium ignition temperature in fewer than 10 hours based on analysis, which assumes no water or air cooling of the fuel. The staff concluded that if 10 hours were available to initiate mitigative actions or, if needed, offsite protective actions using a comprehensive emergency management plan (CEMP), formal offsite radiological emergency plans are not necessary for permanently defueled nuclear power reactor licensees.

According to the staff paper, the main risks at a decommissioning power reactor are a large earthquake and cask-drop events. These events potentially could initiate a zirconium fire in the spent fuel pool if they result in a substantial loss of water in the pool. The staff explains that this is "the only postulated scenario at a decommissioning power reactor that, while highly unlikely, might result in a significant offsite release."

Whether to grant the exemption requests as the NRC staff recommends is a significant decision. After careful review of the specific circumstances at Vermont Yankee Nuclear Power Station, I approve the staff recommendation in part and disapprove it in part.

A major difference between the exemption requests for the Vermont Yankee facility and those for Crystal River Unit 3 is the time that has passed from the permanent shutdown of the reactor and the resulting time for spent fuel decay. In the case of Crystal River, the licensee requested and was granted exemptions from the operating reactor requirements more than five years after shutdown. In contrast, Entergy is seeking similar exemptions for Vermont Yankee that would take effect only 15.4 months after shutdown. Another difference is in the seismic characteristics of the sites. The NRC staff recently calculated ground motion response spectra for Vermont



Yankee that are above the plant's original design safe shutdown earthquake.<sup>1</sup> In my view, while some of the requested exemptions for Vermont Yankee are appropriate once the spent fuel has decayed for 15.4 months, others are not. In evaluating when certain exemptions from emergency planning regulatory requirements are appropriate, the prior work of the NRC staff is instructive.

In the late 1990's, the Commission directed the staff to develop a single, integrated decommissioning rulemaking. This effort was halted in the wake of the September 11, 2001, attacks when other rulemaking initiatives became a higher priority. Before the effort was suspended, the NRC staff presented a rulemaking plan to the Commission that recommended a tiered approach to emergency planning for decommissioning plants.<sup>2</sup> The staff's recommendation in 2000, which was a change in approach from prior exemption requests, was "[b]ased on the desire to maintain safety, reduce unnecessary regulatory burden, increase public confidence (by establishing regulatory uniformity and predictability), and improve efficiency and effectiveness in the regulatory process for decommissioning nuclear plants."<sup>3</sup>

This tiered approach defined four periods of operation after a reactor permanently shuts down and described the appropriate emergency planning requirements for each period. For the first year after shutdown, the plant would be required to meet the emergency planning requirements for operating plants and no emergency planning exemptions would be issued.<sup>4</sup> Between one year after shutdown and five years of post-shutdown spent fuel decay, emergency planning requirements would be similar to those for a monitored retrievable storage installation except that licensees would still be required to classify events up to a General Emergency level and make protective action recommendations to offsite officials. In this phase, detailed offsite radiological emergency response plans applicable to operating reactors would no longer be required, but Federal Emergency Management Agency (FEMA) approved all-hazards emergency plans would remain in effect. After five years of spent fuel decay, all fuel is removed from the pool, or a licensee has demonstrated through conservative adiabatic analysis that the decay heat level of spent fuel in the pool is low enough that the fuel would not be susceptible to a zirconium fire, emergency planning requirements would be reduced and similar to those for an independent spent fuel storage installation. Finally, once all spent fuel was removed from the site, no emergency planning would be required.

This thoughtful approach recommended by the NRC staff was risk-informed and performance-based. In the absence of a completed decommissioning rulemaking, I believe it provides a useful framework for evaluating pending emergency planning exemption requests.

Applying this framework to the Vermont Yankee exemption request provides for a gradual reduction in emergency planning requirements as the spent fuel cools and the risks diminish over time. The Vermont Yankee spent fuel pool contains fuel last irradiated on December 29, 2014. In April 2016, after 15.4 months of natural decay, the likelihood of a zirconium fire and subsequent offsite release will be greatly reduced. According to the NRC staff's analysis, by that time, in the worst case scenario of no water or air cooling of the spent fuel, it would take ten

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<sup>1</sup> NRC memorandum dated May 21, 2014 (ADAMS Accession No. ML14136A126).

<sup>2</sup> SECY-00-145, "Integrated Rulemaking Plan For Nuclear Power Plant Decommissioning," June 2000.

<sup>3</sup> SECY-97-120, SECY-98-075, SECY-98-258, SECY-99-168, and SECY-00-145.

<sup>4</sup> The one-year timeframe was the approximate amount of time that would need to pass to ensure that, in the worst case scenario of no water or air cooling of the spent fuel, it would take ten hours for the temperature of the fuel rods to increase enough for a zirconium fire to start. In the case of Vermont Yankee, this would actually take 15.4 months.

hours for the temperature of the fuel rods to increase enough for a zirconium fire to start. Of course, it likely would have taken several additional hours or even days for the spent fuel pool to drain enough to trigger this scenario in which there was no water cooling of the spent fuel. This would provide a significant amount of time for the licensee to take actions using the post-9/11 spent fuel pool mitigating strategies, such as using fire hoses and portable pumps to inject water into the spent fuel pool to restore cooling.<sup>5</sup> There would also be a significant amount of time for offsite response agencies to take protective actions pursuant to their FEMA-approved comprehensive emergency management plan.

For the period beginning in April 2016 and continuing until December 29, 2019 (or until all spent fuel has been removed from the spent fuel pool, whichever is earlier), I disapprove those requested emergency planning exemptions that are inconsistent with the tiered approach described in the June 2000 SECY paper. During this period, the licensee would not be required to maintain a detailed offsite radiological emergency response plan, but would continue to be subject to the requirements to classify events up to a General Emergency level, to make protective action recommendations to offsite officials, and to maintain the post-9/11 spent fuel pool mitigating strategies. In addition, I would require Entergy to continue to maintain an emergency public notification system and the capability to notify responsible state and local officials within 15 minutes of declaring an emergency.

After five years of spent fuel decay in the pool, a zirconium fire should no longer be reasonably conceivable. Beginning on December 30, 2019 (or the date on which all spent fuel has been removed from the spent fuel pool, whichever is earlier), I approve the requested emergency planning exemptions. This would result in emergency planning requirements similar to those for an independent spent fuel storage installation. The license will continue to require the post-9/11 spent fuel pool mitigating strategies as long as fuel remains in the pool.

Consistent with the tiered approach, I also approve the requested exemptions for Vermont Yankee in the event that Entergy demonstrates to the NRC staff's satisfaction through a conservative analysis that the decay heat level of the spent fuel is so low that the fuel is no longer susceptible to a zirconium fire.

I look forward to the staff's work on a fresh assessment of decommissioning issues through the comprehensive rulemaking directed by the Commission in SRM-SECY-14-0118.

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<sup>5</sup> These post-9/11 measures require that the licensee have the equipment and staff available to take appropriate mitigating actions in the event of a beyond design basis occurrence. The measures are already required by the license as long as spent fuel remains in the pool.