

Congress of the United States
House of Representatives
Washington, DC 20515-2107
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The Honorable Greg Jaczko, Chairman
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Dear Chairman Jaczko:

I am writing to request information about Nuclear Regulatory Commission (NRC) regulations and policies surrounding commitments to undertake safety and other improvements made by NRC licensees as part of their license extension proceedings. I am concerned that recent inspections at Entergy's Vermont Yankee Nuclear Power Station in Vernon, Vermont and Xcel's Monticello Nuclear Generating Station in Monticello, Minnesota have underscored broader weaknesses in the NRC's general commitments policy – weaknesses that have also been identified by a recent report by the NRC Office of the Inspector General (OIG).

As you know, commitments are docketed, written statements describing a specific action that a licensee has agreed or volunteered to take.¹ The NRC considers commitments as appropriate for matters that are of significant interest to NRC staff but do not warrant a more formal regulatory control mechanism. Commitments are neither legally binding nor obligations of a license, but failing to meet a commitment can result in the issuance of a Notice of Deviation, which is less severe than a Notice of Violation but allows NRC staff to request information if the implementation of an action was not consistent with the agreed-upon commitment.

On December 22, 2011, the NRC released a report on its October 20, 2011 inspection at Vermont Yankee during a re-fueling outage.² The inspection was an examination of commitments made during the renewed license application process. When the NRC approved Vermont Yankee's relicensing application March 21, 2011³, Entergy agreed to comply with more than 50 license renewal commitments in preparing for the extended period of operation, which begins March 22, 2012. Although there were no findings identified during this inspection, the NRC inspectors did challenge the completion of several commitments:

- **Commitment 6:** The aging of some nuclear plant components is tracked by monitoring the heatup and cooldown cycles they experience. The resulting metal expansion and contraction causes thermal stresses that can reduce safety margins. Workers at Vermont Yankee had been tracking the thermal cycle information by

¹ Nuclear Energy Institute Guidelines For Managing NRC Commitment Changes (NEI 99-04)

² Vermont Yankee Nuclear Power Station - NRC Integrated Inspection Report 0500027 1/201 1011

³ Vermont Yankee Nuclear Power Station License Renewal Application
(<http://www.nrc.gov/reactors/operating/licensing/renewal/applications/vermont-yankee.html>)

manually recording the number of times the reactor started up and shut down. When the NRC questioned this practice during its review of the Vermont Yankee license renewal application, the company pledged to use a computerized monitoring system called FatiguePro. This is a more sophisticated tool that is commonly used in the nuclear industry to monitor thermal stresses caused by heatups and cooldowns. The NRC inspectors found that Entergy is not using a computerized monitoring but is still using manual monitoring. The NRC inspection report notes that Entergy has therefore effectively "rescinded the commitment".

- **Commitment 12:** Many safety systems at nuclear plants feature heat exchangers. For example, heat exchangers provide cooling for the engines of the emergency diesel generators, provide cooling for the oil used to cool and lubricate the motors in the high pressure coolant injection and reactor recirculation systems, and heat exchangers also cool the water in spent fuel pools. The performance of heat exchangers degrades with time, and the agreed-upon monitoring program will inspect heat exchangers for degradation, evaluate any degradation for its effects on the heat exchanger's design functions including its ability to withstand a seismic event. The inspectors determined that additional NRC review was appropriate prior to the period of extended operations to determine that Entergy meets this commitment.
- **Commitment 25:** Entergy agreed to implement the Thermal Aging and Neutron Irradiation Embrittlement of Cast Austenitic Stainless Steel (CASS) Program, which is a program to detect the effects of loss of fracture toughness due to thermal aging in the CASS steel reactor coolant system piping. The aging mechanism of concern is degradation caused by neutron bombardment, which tends to make metals more brittle and failure-prone. The industry-developed detection program uses three criteria for determining when CASS components must be monitored for aging degradation: (1) cumulative neutron bombardment, (2) material toughness, and (3) stress applied to the component. The NRC inspectors found that Entergy had adopted the industry methods, but had used a value 1,000 times higher for the cumulative neutron bombardment criterion and thus there was "a contradiction between the current program and what Entergy had submitted in the [license renewal] application". By using the different criterion, workers might exclude components from aging degradation monitoring that the industry standard would deem to warrant monitoring.

On December 29, 2011 the NRC released a report⁴ on its December 15, 2011 Special Inspection at Monticello to evaluate the September 2, 2011 identification of substantial blockage in the intake building fire protection piping. As part of Monticello's License Renewal Application (LRA)⁵, which was approved on November 8, 2006, the licensee committed to manage the effects of aging on the structure, systems and components of the plant by implementing aging management programs (AMPs), including a program for its fire protection

⁴ Monticello Nuclear Generating Plant NRC Special Inspection Team (SIT) Report 05000263/2011010

⁵ <http://www.nrc.gov/reactors/operating/licensing/renewal/applications/monticello.html>

water distribution system. The licensee made a commitment to incorporate into the AMP any operating experience reports – either externally from other nuclear power plants or internally from Monticello itself – that might affect the Fire Water System. The NRC inspectors found seven such operating experience reports that were not reviewed at Monticello, all of which involve blockage of fire sprinkler piping, demonstrating that they did not satisfy their license renewal commitment. Had the licensee fulfilled that commitment, it may have avoided the cause of the Special Inspection: fire sprinkler piping at the plant becoming clogged with rust particles.

The NRC has publicly stated that “...public confidence and trust in the license renewal process hinges on the NRC’s confirmation that the licensee’s commitments have been completed. The fulfillment of these commitments is important because it forms the basis for the agency’s determination of reasonable assurance that the effects of aging will be managed throughout the period of extended operation...”⁶ However, in a September 19, 2011 report, the Office of the Inspector General (OIG) identified significant problems in the NRC’s management of licensee commitments.⁷ Specifically, the NRC OIG found:

- The NRC inconsistently implements the audits of licensee commitment management programs because agency guidance is incomplete and imprecise, which can result in ineffective audits.
- NRC training does not effectively address the definition and use of commitments and is not provided to all agency staff involved in reviewing licensee commitments, potentially resulting in the misapplication of commitments by NRC staff.
- The NRC does not systematically track commitments and thus cannot ensure oversight of commitments.

The OIG report authors also made five specific recommendations for actions the NRC should take to address these problems:

- Revise NRC policy⁸ on conducting commitment management audits to include detailed direction on how to sample commitment for audit. For example, a checklist of sources to be used in identifying the complete collection of commitments from which to sample.
- Revise NRC policy⁸ on conducting commitment management audits to include well-defined expectations and guidelines regarding the conduct of those audits. The guidelines should include an expectation that audited commitments are reviewed to ensure that they have been appropriately implemented in the plant facility, procedures, program, or other plant documentations.
- Develop training that addresses the definition and use of commitments and provide the training to all agency staff involved in reviewing reactor licensee commitments.
- Identify ways to determine how many commitments exist that are considered safety significant and/or necessary for approval of proposed licensing actions. This could be accomplished by either: (1) Project managers identifying such commitments as part of the triennial commitment management audits, or (2) conducting a review of all existing commitments and identifying any inappropriately applied commitments.

⁶ <http://www.nrc.gov/reactors/operating/licensing/renewal/introduction/inspections/faq-ip71003.html#2>

⁷ Audit of NRC’s Management of Licensee Commitments (OIG-11-A-17)

⁸ LIC-105, Managing Regulatory Commitments Made by Licensees to NRC

- Depending on the outcome of the efforts to meet recommendation 4, develop and utilize a tool for systematically tracking the status of commitments that are deemed safety significant and/or necessary for approval of proposed licensing actions.

The case at Vermont Yankee and the OIG report clearly indicate that reforms in the renewal license commitment system are necessary. In order to evaluate what steps the Commission and its staff are taking to respond to these safety issues, I hereby request that you provide me with the following information:

1. How and when will the NRC re-evaluate Entergy's actions toward meeting commitments 6, 12, and 25 for the Vermont Yankee power plant?
2. How and when will the NRC re-evaluate Xcel's actions toward meeting its commitment regarding the Aging Management Plan for the Fire Water System at the Monticello Nuclear Generating Station?
3. Please provide a list of all commitments for relicensing that each licensee that has received a license extension from the NRC has made since January 1, 2001. Please also provide details of how and when the NRC has validated each of these commitments. For any commitments that the NRC has not verified, how and when does the NRC plan to do so? If no such plans are contemplated, why not?
4. Please provide copies of all Notices of Deviation that have been issued to licensees for failing to meet or inadequately meeting commitments. For each of these Notices of Deviation, what further action was taken by the licensee and by the NRC, and how were licensee actions validated?
5. What actions is the NRC taking to implement the recommendations identified in the OIG's audit report? How were these actions decided upon? What is the timeline for implementing those actions? The OIG report laid out five specific recommendations. Does the NRC plan to implement each of those recommendations? If so, how and when? If not, why not?

Thank you very much for your consideration of this serious matter. Please provide your response no later than close of business Friday, April 6, 2012. If you have any questions or concerns, please have your staff contact Dr. Makenzie Lystrup or Dr. Michal Freedhoff of my staff at 202-225-2836.

Sincerely,



Edward J. Markey