[7590-01-P]
DD-15-06

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

William M. Dean, Director

In the Matter of	)	Docket Nos.: See Enclosure 3
	)	
All Operating Reactor Licensees	)	License Nos.: See Enclosure 3
	)	

DIRECTOR'S DECISION UNDER 10 CFR 2.206, "REQUESTS FOR ACTION UNDER THIS SUBPART"

I. Introduction

By letter dated March 12, 2011, Thomas Saporito, representing Saprodani Associates, filed a petition under Title 10 of the *Code of Federal Regulations* (10 CFR) 2.206, "Requests for Action Under This Subpart" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML110740026). The petitioner requested that the U.S. Nuclear Regulatory Commission (NRC or the Commission) take escalated enforcement action against the above-captioned licensees and suspend or revoke the NRC licenses granted to the licensees for operation of nuclear power reactors. In particular, the petitioner requested that the "NRC ORDER [sic] the immediate shut-down of all nuclear power reactors in the USA which are known to be located on or near an earthquake fault-line." The petitioner cited the Fukushima Dai-ichi accident in Japan as the rationale for and basis of the petition.

On March 21, 2011, the NRC acknowledged receipt of the petition (ADAMS Accession No. ML110840274). On April 4, 2011, the NRC's Petition Review Board (PRB) met internally to discuss petitioner's request for immediate action. The PRB determined that the request for immediate action is a general assertion without supporting facts. Thus, the PRB did not identify

a significant safety concern from the information provided which would warrant the NRC to order an immediate shutdown of nuclear power reactors located on or close to earthquake fault lines. On April 4, 2011, the NRC staff informed the petitioner of the PRB's decision to deny his request for an immediate action (ADAMS Accession No. ML110940603).

On April 14, 2011, the petitioner addressed the PRB during a teleconference. A copy of the teleconference transcript is available at ADAMS Accession No. ML11109A014. During the teleconference, the petitioner stated that the petition contains the following four specific requests:

1. Order the immediate shutdown of all nuclear power reactors located on or near an earthquake fault line in the United States.
2. Order the immediate shutdown of all power reactors employing GE Mark I containment design in the United States, characterizing such design as flawed from the nuclear safety standpoint.
3. Advise other countries employing the GE Mark I nuclear power reactors about the serious nuclear safety design flaws associated with that design, which is likely to result in a serious nuclear accident comparable to the Japanese nuclear disaster.
4. Immediately revoke all 20-year license extensions issued to NRC licensees, because the NRC "has improperly and illegally granted 20-year license extensions to the 40-year license that was initially granted by the agency for the 104 nuclear reactors throughout the United States."

During the teleconference, the petitioner supplemented the second request by specifically naming NRC-licensed plants that employ the GE Mark I containment design and characterizing them as "flawed nuclear reactors" which pose an "unwarranted risk to the national security and common defense of the United States of America." He stated that "for these reasons standing alone, petitioners urge the NRC to order the immediate shutdown of all GE Mark I nuclear

power reactors in the United States." Subsequently, on April 14 and 16, 2011, the petitioner provided additional documents in support of his claim (ADAMS Accession Nos. ML11110A026, ML11110A027, ML11110A028, and ML11119A024, respectively).

The PRB met internally on April 28, 2011, to discuss the petition, as supplemented. In accordance with the criteria for review and rejection described in Management Directive (MD) 8.11, "Review Process for 10 CFR 2.206 Petitions," the PRB made its initial recommendation to accept the petition in part, insofar as the petitioner requested additional regulatory action in response to the events at Fukushima. The supplemental information provided by the petitioner was not sufficient to warrant further inquiry regarding the petitioner's assertions that the original licensing bases of U.S. nuclear reactors were faulty and that immediate shutdown was warranted.

On May 12, 2011, the petition manager informed the petitioner of the PRB's initial recommendation to accept this petition in part (ADAMS Accession No. ML111320018). At that time, the petitioner requested another opportunity to address the PRB to provide comments on its initial recommendation and additional information in support of the petition.

On May 25, 2011, the petitioner addressed the PRB by teleconference to present supplemental information on the petition. Also, on May 25, 2011, he e-mailed additional information to the NRC (ADAMS Accession No. ML111450897), which the PRB considered. A copy of the transcript for the May 25, 2011, teleconference is available under ADAMS Accession No. ML11146A010.

The PRB considered the additional information provided during the teleconference on May 25, 2011, by the petitioner and determined that it did not contain any new or relevant information that would change the PRB's initial recommendation. Consistent with its initial recommendation, the PRB declared its final recommendation to partially accept the petition for review, as modified and supplemented. The NRC partially accepted petition Requests 1 and 2

to the extent that the petitioner sought regulatory action in light of the events at Fukushima. However, the NRC also partially rejected petition Requests 1 and 2 on the basis that the petitioner did not provide sufficient facts to justify shutting down all nuclear power reactors located on or near fault lines, or those with the GE Mark I containment design. The NRC rejected petition Request 3 on the basis that the petitioner requested an action that the NRC was already implementing. Finally, the NRC rejected petition Request 4 on the basis that the petitioner's claim was general and insufficient to warrant further inquiry. In addition, the NRC staff had already reviewed and evaluated the issue. The NRC staff communicated these decisions to the petitioner through a letter dated June 28, 2011 (ADAMS Accession No. ML11137A213).

The NRC treated transcripts of the teleconferences as supplements to the petition. These transcripts are available for inspection at the NRC's Public Document Room (PDR), located at O1F21, 11555 Rockville Pike (first floor), Rockville, MD 20852. Publicly available documents created or received at the NRC are accessible electronically through ADAMS in the NRC Library at http://www.nrc.gov/reading-rm/adams.html. Persons who do not have access to ADAMS or who encounter problems in accessing the documents located in ADAMS should contact the NRC's PDR reference staff by telephone at 1-800-397-4209, or 301-415-4737, or by e-mail to pdr.resource@nrc.gov.

The NRC sent a copy of the proposed director's decision to the petitioner and to the affected licensees for comment on April 8, 2015 (ADAMS Accession Nos. ML13018A239 and ML13018A244, respectively). Two licensees responded on April 14, 2015 (ADAMS Accession No. ML15111A257). The comments and the NRC staff's response to them are included as Attachment 1 to the director's decision.

II. Discussion

The NRC's review of this petition took longer than the standard of 120 days for reaching a decision on the petition because the petition was related to Fukushima. At the time of the petition submittal, the NRC was conducting a Fukushima lessons-learned review, and it coordinated its decision on this petition with the Fukushima review. This section includes both the petitioner's requests for orders to be issued and the NRC's actions and decisions.

Additional information regarding the implementation of Japan Lessons-Learned Activities, including plant-specific implementation status, is available on the NRC's Japan Lessons-Learned public Web site at http://www.nrc.gov/reactors/operating/ops-experience/japan-dashboard.html.

Request 1: **Order the immediate shutdown of all nuclear power reactors located on or near an earthquake fault line in the United States**.

NRC decision: The NRC has determined that U.S. plants located at or near earthquake fault lines continue to operate safely and do not pose an immediate safety concern to the members of the public. Nuclear power plants in the U.S. have been designed, built, and operated to safely withstand earthquakes likely to occur in their region.

As part of the NRC post-Fukushima lessons-learned activities, the NRC established the Near-Term Task Force (NTTF). The NRC tasked the NTTF with conducting a systematic and methodical review of NRC processes and regulations and determining if the agency should make additional improvements to its regulatory system. Ultimately, the task force developed a comprehensive set of recommendations and presented these to the Commission in SECY-11-0093, "The Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated July 12, 2011 (ADAMS Accession No. ML111861807). In the report, the NTTF determined that the current regulatory approach, and the resultant plant capabilities, gave the

NTTF and the NRC the confidence to conclude that a sequence of events similar to the Fukushima accident is unlikely to occur in the U.S.

On March 12, 2012, the NRC issued a request for information under 10 CFR 50.54(f) regarding recommendations 2.1, 2.3, and 9.3 of the NTTF report (ADAMS Accession No. ML12056A046). The purpose of the 10 CFR 50.54(f) letter was to gather information with respect to the NTTF recommendations for seismic hazards. The letter instructed all licensees to reevaluate seismic hazards at their sites using updated seismic hazard information, present-day guidance and methodologies, and a risk evaluation. The NRC staff is currently reviewing the licensees' submitted seismic hazard reports. In cases where a licensee's reevaluated hazard exceeds the design basis, the NRC will require more detailed site-specific evaluations, such as a seismic probabilistic risk assessment. NRC will review each step in the analysis process and take action to require plant changes as necessary.

In addition to the 10 CFR 50.54(f) letter, the Commission issued Order EA-12-049, "Issuance of Order to modify licenses with requirements for mitigation strategies for beyond-design-basis external events" on March 12, 2012 (ADAMS Accession No. ML12054A735). Order EA-12-049 requires mitigation strategies to protect against external events, including postulated seismic events. Licensees must comply with the order no later than December 31, 2016. To date, all licensees have submitted overall integrated plans (OIPs) to describe how they will comply with Order EA-12-049, and NRC staff has evaluated the OIPs. In addition, the NRC staff has performed onsite audits to ensure that full implementation will occur within the required time period. Licensees for nine nuclear power plant sites have requested, and have been granted, schedule relaxation to align the schedule requirements of Order EA-12-049 with those of Order EA-13-109, "Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable of Operation under Severe Accident Conditions" (ADAMS

Accession No. ML13130A067). These schedule relaxations extend the due date past December 31, 2016.

The NRC has concluded that the continued operation of nuclear plants on or near earthquake fault lines does not pose an imminent risk to public health and safety. The NRC is addressing the petitioner's seismic hazard concerns through orders and requests for information resulting from NTTF recommendations, as described above. The NRC will take no further action on this request.

Request 2: **Order the immediate shutdown of all power reactors employing GE Mark I containment design in the United States.**

NRC decision: The NRC has determined that GE boiling-water reactors (BWRs) with Mark I containments continue to operate safely and do not pose an immediate safety concern to the members of the public.

The NRC previously addressed the concern with GE Mark I containment design in NUREG-0661, "Safety Evaluation Report Mark I Containment Long-Term Program – Resolution of Generic Technical Activity A-7," dated July 1980 (ADAMS Accession No. ML072710452). In the report, NRC staff concluded that "the proposed structural acceptance criteria are consistent with the requirements of the applicable codes and standards and, in conjunction with the structural analysis techniques, will provide an adequate basis for establishing the margins of safety in the containment design." All GE Mark I BWRs were evaluated for suppression pool hydrodynamic loads, and appropriate modifications were made to maintain the containment structural integrity.

The NRC issued Order EA-12-050, "Order to Modify Licenses with Regard to Reliable Hardened Containment Vents," on March 12, 2012 (ADAMS Accession No. ML12054A694). This order was superseded by a modified Order EA-13-109, "Order Modifying Licenses with Regard to Reliable Hardened Containment Vents Capable for Operation Under Severe Accident

Conditions," on June 6, 2013 (ADAMS Accession No. ML13143A334). The Order requires all BWR licensees with Mark I and Mark II containments to design and install a venting system that provides venting capability during severe accident conditions. This order further enhances the reliability of the containment vent system, thereby protecting the containment during severe accidents. To date, all affected licensees have submitted OIPs for upgrading containment venting capabilities from the pressure suppression wetwell to assist in preventing core damage; NRC staff is currently reviewing these OIPs. Licensees must comply with Order EA-13-109 no later than June 30, 2019. OIPs for reliable ventilation from the drywell, or reliable venting strategies that eliminate the need for drywell venting, will be submitted by licensees by the end of 2015. The exception is Oyster Creek Nuclear Generating Station, which has submitted an extension request associated with the end of its operating life in 2019, along with plans to improve existing venting capabilities. The NRC staff is currently reviewing this extension request, and has not yet made a decision to approve or deny the request.

The NRC has concluded that the continued operation of power reactors employing GE Mark I containment design does not pose an imminent risk to public health and safety. The NRC is addressing the petitioner's containment concerns through orders resulting from NTTF recommendations, as described above. The NRC will take no further action on this request.

Request 3: **Advise other countries employing the GE Mark I nuclear power reactors about the serious nuclear safety design flaws associated with that design, which is likely to result in a serious nuclear accident comparable to the Japanese nuclear disaster.**

NRC decision: This is a general request for the NRC to ensure that policies exist to support the sharing of information related to the events involving Fukushima. The NRC's current policies and practices support its openness goals with external, including international, stakeholders. Specifically, since the earthquake and tsunami in Japan, the NRC has participated in meetings at the International Atomic Energy Agency, at the Nuclear Energy

Agency, with the G8 Nuclear Safety and Security Group, and with numerous other bilateral and multilateral groups to share information on this event with NRC's international counterparts. Because the petitioner requested an action that the NRC is already implementing, the PRB determined that this request did not meet the criteria for review on the following basis: the request does not set forth sufficient facts to warrant further actions beyond the actions that the NRC has already undertaken.

Request 4: **Immediately revoke all 20-year license extensions issued to NRC licensees, because the NRC "has improperly and illegally granted 20-year license extensions to the 40-year license that was initially granted by the agency for the 104 nuclear reactors throughout the United States."**

NRC decision: In accordance with MD 8.11, the PRB will review a petition under 10 CFR 2.206 only where the petitioner specifies the bases for taking the requested action. Although the petitioner asserted that the NRC lacked the legal authority to grant license extensions for numerous plants, he failed to set forth the basis for his assertion. He claimed that the NRC "improperly interpreted the amendment to section 104b under 42 USC 2134 and under the Atomic Energy Act of 1954, as amended," and thus, "improperly and illegally granted 20-year license extensions to the 40-year license that was initially granted by the agency." This is a general claim, insufficient to warrant further inquiry.

The petitioner also claimed that "the NRC has recklessly endangered public health and safety in these circumstances because in so extending these licenses by 20 years, the agency has significantly increased the likelihood of a loss-of-coolant accident" due to neutron embrittlement of the reactor vessel over time. All license renewals have been subjected to the NRC's license renewal review process, per 10 CFR 51 and 54, with several opportunities for public participation, including a hearing. A reactor vessel neutron embrittlement analysis is included in each license renewal application, and is evaluated in the resulting NRC staff safety

evaluation report in accordance with Section 4.2 of NUREG-1800, “Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants.” The NRC rejected Request 4 based on the criteria that the petitioner raised issues that the NRC staff has already reviewed, evaluated, and resolved.

III. **Conclusion**

As discussed above, the NRC found the petition, its supporting facts, and supplements insufficient to warrant that the agency accept the petitioner’s Requests 1 and 2 to immediately shutdown U.S. nuclear power plants at or near earthquake faults or those employing the Mark I containment designs.

The NRC partially accepted Requests 1 and 2 of the petition to the extent that the petitioner sought some type of regulatory action in light of the events at Fukushima. The above discussion demonstrates that the NRC has addressed the petitioner’s concerns related to the events at Fukushima through the issuance of orders and through a request for information under 10 CFR 50.54(f). Such actions significantly enhance the margins of safety to the effects of extreme natural phenomena at commercial operating reactors in the United States.

The NRC rejected Request 3 on the basis that the NRC was already implementing actions requested. The NRC rejected Request 4 on the basis that the petitioner’s claim was general and insufficient to warrant further inquiry. In addition, the NRC staff had already reviewed, evaluated, and resolved the issue.

Based on the staff responses to the petitioner’s four concerns, the NRC does not plan to take any additional enforcement actions as specified in the petitioner’s requests. Therefore, the NRC is closing this petition.

As provided in 10 CFR 2.206(c), a copy of this director's decision will be filed with the Secretary of the Commission for the Commission to review. As provided for by this regulation, the decision will constitute the final action of the Commission 25 days after the date of the decision unless the Commission, on its own motion, institutes a review of the decision within that time.

Dated at Rockville, MD, this 17th day of June 2015. .

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

/RA/
William M. Dean, Director,
Office of Nuclear Reactor Regulation.

ATTACHMENT 1

COMMENTS RECEIVED FROM LICENSEES

ON THE PROPOSED DIRECTOR'S DECISION

DATED APRIL 8, 2015

The NRC sent a copy of the proposed director's decision to the affected licensees for comment on April 8, 2015 (ADAMS Accession No. ML13018A244). FirstEnergy Nuclear Operating Company and Exelon Corporation responded with comments on April 14, 2015 (ADAMS Accession No. ML15111A257). The NRC's responses to the comments received are provided below:

Comment 1 – Received from FirstEnergy Nuclear Operating Company

"The compliance with Order EA-12-049 for mitigation strategies 'no later than two refueling cycles after submittal of the overall integrated plan (OIP), or December 31, 2016, whichever comes first' is accurate, however, some plants have requested and received relaxation to allow completion after the second refueling cycle but still prior to December 31, 2016."

Response:

The NRC has revised the director's decision to include discussion of licensees that have requested and have been granted an extension for compliance with Order EA-12-049.

Comment 2 – Received from Exelon Corporation

"The next to last paragraph on page 7 of the NRC letter states that all affected licensees have submitted OIPs for upgrading containment venting capabilities in response to NRC Order EA-13-109. Oyster Creek has not submitted an OIP for venting in response to NRC Order

EA-13-109, but has submitted an extension request to the end of its operating life (12/31/19) for Order compliance, at which time a request for deferral from the Order is contemplated, or compliance to the Order will be required. NRC approval of the extension request is expected in 2015. As justification for the extension request, Oyster Creek committed to improve existing venting capabilities; however, an OIP in response to the Order has not been submitted for Oyster Creek."

Response:

The NRC has revised the director's decision to state that Oyster Creek Nuclear Generating Station has submitted an extension request for compliance with Order EA-13-109. The NRC staff is currently reviewing this extension request, and has not yet decided to approve or deny it.