UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS

Jack R. Strosnider, Director

In the Matter of	)	Docket Nos. 50-255, 72-7
	)	
NUCLEAR MANAGEMENT COMPANY, LLC	)	License No. DPR-20
	)	
Palisades Nuclear Plant	)	

PROPOSED DIRECTOR'S DECISION UNDER 10 CFR 2.206

I. Introduction

By letter dated April 4, 2006, Mr. Terry J. Lodge, on behalf of five organizations and 30 individuals (the Petitioners), filed a petition pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Section 2.206, with the U.S. Nuclear Regulatory Commission (NRC or the Commission). The Petitioners requested that the NRC take enforcement action against the licensee for the Palisades Nuclear Plant, Nuclear Management Company, LLC (NMC), by condemning and stopping the use of the two independent spent fuel storage installation (ISFSI) concrete pads holding dry spent fuel storage casks on the plant site. As the basis for the request, the Petitioners stated that the concrete cask storage pads do not conform with NRC regulations for earthquake stability, as required by 10 CFR 72.212(b)(2)(i)(B) and 72.212(b)(3), and therefore pose a hazard in case of an earthquake.

Representatives for the Petitioners participated in a telephone conference call with the NRC's Petition Review Board (PRB) on April 26, 2006, to discuss the petition. The teleconference was transcribed and the transcription was treated as a supplement to the petition. In the conference call, the Petitioners requested additional time to provide

supplemental information. The NRC staff agreed and asked the Petitioners to submit any such information within 1 week of receiving a transcript of the conference call. A written transcript of the call was sent to the Petitioners on May 3, 2006. The Petitioners did not submit any supplemental information subsequent to the receipt of the transcript.

After the conference call, the PRB discussed the request to stop the use of the two ISFSI concrete pads at the Palisades site. The NRC staff considered whether there was an immediate and significant risk to safety. The staff concluded that continued storage of the spent fuel in dry casks on the existing concrete pads while the specific issues raised in the petition continued to be evaluated did not pose an undue risk to public health and safety.

In a letter dated June 27, 2006, the NRC informed the Petitioners that the request for immediate action to condemn and stop the use of the two ISFSI concrete pads at the Palisades site was denied. The NRC accepted the petition, in part, for review under 10 CFR 2.206, specifically with respect to the slope stability analysis of the concrete pad constructed in 2003. That issue was already under NRC review at the time the Petition was submitted, since the NRC had identified it as an unresolved item during a dry-cask storage inspection at the Palisades site in August 2004. The other issues the Petitioners raised, concerning the stability of the older concrete pad constructed in 1992, and the potential for amplification of earthquakes on the newer pad, were not accepted for review under 10 CFR 2.206, because the NRC staff had already reviewed and resolved those issues. The staff's review of the older pad is documented in the "Palisades Plant - NRC Final Safety Assessment of ISFSI Support Pad," dated September 20, 1994. In that assessment, the staff had concluded that the location of the storage pad at the Palisades site was acceptable to support the concrete storage casks against all effects of the design basis earthquake for the site. The staff resolution of the issue regarding potential amplification effects from seismic events for the newer pad was

documented in NRC Inspection Report 05000255/2006002, dated May 11, 2006.

Copies of the petition, transcript, and acknowledgment letter are available for inspection at the Commission's Public Document Room (PDR) at One White Flint North, Public File Area O-1F21, 11555 Rockville Pike (first floor), Rockville, Maryland, and from the NRC's Agencywide Documents Access and Management System (ADAMS) Public Electronic Reading Room on the NRC Web site at http://www.nrc.gov/reading-rm/adams.html, under ADAMS Accession Nos. ML060960061, ML061230089, and ML061790450, respectively. The NRC safety assessment, dated September 20, 1994, and the May 2006 NRC Inspection Report can be found at ADAMS Accession Nos. ML060480230 and ML061350371, respectively. Persons who do not have access to ADAMS or who have problems in accessing the documents in ADAMS should contact the NRC PDR reference staff by telephone at 1-800-397-4209 or 301-415-4737, or by e-mail to pdr@nrc.gov.

II. Discussion

Regarding the issue the staff accepted for review under 10 CFR 2.206, the Petitioners have asserted that the newer (2003) ISFSI concrete pad at the Palisades site does not comply with the requirements of 10 CFR 72.212(b)(2)(i)(B) and 72.212(b)(3). These regulations require that a general licensee wishing to use an NRC-approved dry-cask storage system at its site must perform written evaluations before such use, establishing that cask storage pads and areas have been designed to adequately support the static and dynamic loads of the stored casks, considering both potential amplification of earthquakes through soil-structure interaction, and soil liquefaction potential or other soil instability from vibratory ground motion. In addition, the general licensee must review the Safety Analysis Report referenced in the Certificate of Compliance and the related NRC Safety Evaluation Report before use, to determine whether the reactor site parameters, including analyses of earthquake intensity and tornado missiles,

are enveloped by the cask design bases considered in these reports. In 2004, the NRC conducted an inspection of spent fuel storage activities at Palisades and reviewed the licensee's written evaluations, as documented in NRC Inspection Report 07200007/2004-002, dated September 3, 2004 (ADAMS Accession No. ML042510075). In that inspection report, the NRC concluded that, in general, the licensee's written evaluations of the cask system were adequate to demonstrate compliance with the requirements of 10 CFR 72.212(b). However, the inspectors identified two unresolved items requiring further NRC evaluation: (1) the potential amplification effects on the new ISFSI pad; and (2) the slope/subsurface stability analysis. The potential amplification effects on the newer pad have since been reviewed and resolved, as documented in NRC Inspection Report 05000255/2006002. The NRC staff has recently completed its review of the licensee's revised slope stability analysis for the newer pad, and concludes that the slope stability issue for the newer pad has also been resolved, as discussed below.

On October 19, 2006, NMC completed a revised slope stability analysis for the newer ISFSI pad [NMC Calculation (Doc) No: EA-EC7408-02, Revision 0, "Re-evaluation of Slope Stability under ISFSI Pad for Revised Load Due to 24PTH System"]. NMC performed the re-evaluation to address NRC questions associated with the unresolved inspection item, and to confirm the stability of the newer pad for the possible use of a cask design heavier than that currently in service. The NRC staff has reviewed the licensee's new evaluation, and concludes the following:

1. The soil properties the licensee determined from three samples taken in the vicinity of the newer ISFSI storage pad were adequate for use in the design of the pad. The short-term effects of rain and snowfall on the critical soil parameters would be insignificant, because a small change in moisture content

would result in only a small change in total density, which would not affect the overall stability of the ISFSI pad.

2. The licensee's revised evaluation appropriately considered the weight of the as-built pad, the weight of the heavier cask system, and the in-situ soil properties, in response to an earthquake. NRC guidance, and government and commercial standards for the design of foundations of similar structures indicate that a minimum acceptable factor of safety of 1.15 is appropriate when considering transient loadings such as a design basis seismic event. NMC's revised evaluation concluded that this design criterion is met for all areas and soils beneath and immediately around the pad. The NRC staff has reviewed this analysis and concludes that NMC has satisfactorily demonstrated that the as-built pad has an adequate factor of safety of a minimum of 1.15 against the postulated sliding soil-mass loads resulting from an earthquake.

3. The NRC staff has determined that the analysis, results, and conclusions presented in the new NMC evaluation satisfy the design requirements for the newer pad and confirm that a factor of safety of 1.15 will exist to provide adequate margin against the effects of sliding soil slopes. The staff concludes that the slope stability analysis for the newer ISFSI pad is adequate to support the placement of existing casks and additional casks of heavier design, as analyzed by NMC in the referenced evaluation.

III. Conclusion

The NRC staff has reviewed the basis for the Petitioners' requested actions. Based on

the foregoing discussion, the staff concludes that the concerns about the stability of the newer ISFSI pad during an earthquake have been adequately resolved such that no further action by the licensee is needed. NMC has performed written evaluations that establish that the newer cask storage pad at the Palisades ISFSI has been designed to adequately support the static and dynamic loads of the stored casks, considering potential effects of earthquakes, in compliance with 10 CFR 72.212(b)(2)(i)(B) and 72.212(b)(3). The staff concludes that the Petitioners' concerns have been adequately addressed by the licensee's revised slope stability evaluation. Therefore, the requested action, to condemn and stop the use of the two ISFSI concrete pads holding dry spent fuel storage casks at the Palisades site, is denied. The NRC staff will consider enforcement action, as appropriate, for the unresolved inspection item concerning the licensee's initial slope stability evaluation (URI 0720007/2004-002-2).

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, this 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 this decision within that time.

Dated at Rockville, Maryland, this day of 2006.

FOR THE NUCLEAR REGULATORY COMMISSION

Jack R. Strosnider, Director
Office of Nuclear Material Safety
and Safeguards

PROPOSED