



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

July 1, 2020

Mr. John Ainsworth, Executive Director
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219

SUBJECT: CALIFORNIA COASTAL COMMISSION JULY 2020 MEETING ON SAN
ONOFRE NUCLEAR GENERATING STATION INDEPENDENT SPENT FUEL
STORAGE INSTALLATION INSPECTION AND MAINTENANCE PROGRAM

Dear Mr. Ainsworth:

On behalf of the California Coastal Commission (CCC), Mr. John Weber invited the U.S. Nuclear Regulatory Commission (NRC) staff to participate in the CCC's July 2020 meeting to discuss the San Onofre Nuclear Generation Station (SONGS) Independent Spent Fuel Storage Installation Inspection and Maintenance Program (IMP). Mr. Weber also provided a list of questions that the CCC is interested in as an update to our responses at the October 2019 CCC meeting.

We understand that as a condition of CCC's approval of the Coastal Development Permit (CDP) regarding the SONGS Holtec International Storage Module Underground Maximum Capacity facility, the licensee, Southern California Edison committed to develop an IMP. Also, we understand that the due date for the IMP submittal for CCC review and approval was accelerated to March 31, 2020.

Regarding attendance at the meeting, Ms. Andrea Kock, Director, Division of Fuel Management at NRC Headquarters, who is responsible for development of the NRC's spent fuel licensing and oversight programs, and Ms. Linda Howell, Deputy Director, Division of Nuclear Materials Safety, of our Region IV office, who is responsible for implementation of the oversight of the NRC's spent fuel inspection program at the SONGS site, will be participating in the CCC's July meeting on my behalf. Consistent with NRC's mission, the NRC will provide oversight of SONGS' inspection and maintenance activities to ensure compliance with NRC's requirements. The NRC staff will not provide comment on the draft IMP document, but we will be prepared to answer CCC questions on the NRC's spent fuel storage and transportation licensing and oversight programs and requirements for aging management. Also, enclosed please find our written responses to the questions that Mr. Weber indicated were of interest to the CCC.

If you have any questions, please contact the Project Manager for the SONGS site, Ms. Amy M. Snyder, Senior Project Manager. She can be reached at 301-415-6822 or Amy.Snyder@nrc.gov.

In accordance with Title 10 of the *Code of Federal Regulations*, Section 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of the NRC's Agencywide Documents Access and Management System (ADAMS). The ADAMS site is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Sincerely,

John W. Lubinski, Director
Office of Nuclear Material Safety
and Safeguards

Docket Nos.: 50-206; 50-361; 50-362
License Nos.: DPR-13; NPF-10; NPF-15

Enclosure:
As stated

cc: SONGS Listserv

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California Coastal Commission Questions on the Spent Fuel Storage and the San Onofre Nuclear Generating Station Site and U.S. Nuclear Regulatory Commission's Responses

Question (Q) 1. Update on long term spent fuel storage

Q1 a.: Status and reasonably anticipated schedule of interim waste facilities proposed in New Mexico and Texas

Response (R)1 a.: Currently, the U.S. Nuclear Regulatory Commission (NRC) staff is considering applications for two proposed consolidated interim storage facilities (CISFs). A status of both applications is provided below.

Holtec International Storage Module CISF, New Mexico

The NRC's safety and environmental reviews of the CISF license application submitted by Holtec International are on-going. We issued requests for additional information (RAIs), for both safety and environmental topics. We published the draft environmental impact statement (EIS) on March 10, 2020, and due to the recent events associated with the Corona Virus Disease 2019 (COVID-19) public health emergency (PHE), we extended the public comment period until July 22, 2020. On June 24, 2020, we again extended the comment period for an additional 60 days, to September 22, 2020, to accommodate holding in person public meetings in New Mexico. The NRC staff anticipates completing its safety and environmental reviews by the spring of 2021, but this may change after we evaluate the impact of the recent extended comment period and the impacts of the ongoing COVID-19 PHE.

Interim Storage Partners, LLC CISF, Texas

The NRC's safety and environmental reviews of the CISF license application submitted by Interim Storage Partners, LLC are on-going. We issued RAIs, for both safety and environmental topics. Additionally, we issued an environmental scoping summary report in November 2019 that addressed approximately 3200 unique comments. We published the draft EIS in May 2020 for a 120-day comment period. The NRC staff anticipates completing our safety and environmental reviews in summer 2021; however, currently we are evaluating a request for an extension of the comment period, based on events associated with the COVID-19 PHE and our ability to accommodate holding in person public meetings in Texas and New Mexico.

Q1 b.: Status of long-term/permanent storage, including Yucca Mountain

R1 b.: The NRC distinguishes between storage of spent nuclear fuel (SNF) and disposal. Commercial SNF is currently being stored safely and securely at each reactor site in the U.S., in spent fuel pools or dry casks. NRC has determined that waste can be stored safely in pools or casks for 100 years or more. Dry casks are licensed for a period of up to 40 years, which can be renewed upon application with justification and safety analyses.

The U.S. policy for nuclear waste management, as set forth in the Nuclear Waste Policy Act, is for permanent disposal of spent fuel in a geologic repository. The Department of Energy (DOE) is responsible for developing and operating a geologic repository for disposal of spent nuclear fuel and other high-level radioactive waste, to be licensed by the NRC. The NRC staff completed its safety evaluation report for the DOE's application for a geologic repository at Yucca Mountain in January 2015. Also, the NRC staff completed a supplement to the DOE EIS in May 2016.

Enclosure

Completion of the safety evaluation report and the EIS supplement does not represent an agency decision on whether to authorize construction. A final licensing decision could come only after completion of the Commission's adjudicatory process. The adjudicatory proceeding is currently suspended.

Q1 c.: Status of spent fuel loading order for future interim storage facilities. How would the queue for fuel from facilities across the country be established and on what basis? More specifically, with what is known now [about] when might SONGS [San Onofre Nuclear Generating Station] spent fuel be moved once an appropriate storage facility is established?

R1 c.: If a CISF were to be approved by the NRC, the CISF licensee would be responsible for the business and logistical decisions that would ultimately determine the rate and timing of spent nuclear fuel movement from specific sites, including the SONGS site, for acceptance of spent fuel that falls within the parameters of the CISF license. The NRC would provide oversight, consistent with our statutory authorities, to ensure the safe and secure transport of spent nuclear fuel to a licensed CISF. However, the NRC has no regulatory role beyond its safety and security functions in determining the timing of spent fuel shipments.

Q1 d. An update on related Congressional bills establishing priorities/criteria for determining the queue would be helpful.

R1 d.: The following bills introduced in the 116th Congress contain provisions that would address whether and how priority is given to the storage or acceptance of certain categories of spent fuel from commercial nuclear power plants.

The "Nuclear Waste Policy Amendments Act of 2019" (S. 2917), introduced on November 20, 2019, by Senator John Barrasso (R-WY), would, if passed, make a number of amendments to the Nuclear Waste Policy Act of 1982 on a range of topics. With respect to the issue of priority being given to the storage of certain categories of spent fuel, the bill would authorize DOE to enter into one monitored retrievable storage facility agreement before the NRC has issued a final repository decision and would require this agreement, to the extent allowable, to give priority to the storage of DOE-owned civilian waste from facilities that have ceased commercial operation and are located in a high seismicity area and in close proximity to a major body of water. The Senate Committee on Environment and Public Works held a hearing on May 1, 2019, on a discussion draft bill that was released as a precursor to this bill. The bill has not advanced since its introduction last year. A similar bill in the House is H.R. 2699.

The "Nuclear Waste Policy Amendments Act of 2019" (H.R. 2699), introduced on May 14, 2019, by Representative Jerry McNerney (D-CA), would, if passed, amend the Nuclear Waste Policy Act of 1982 to advance the interim storage and permanent disposal of nuclear waste. On the topic of priority given to the storage of certain categories of spent fuel, the bill would authorize DOE to enter into one monitored retrievable storage facility agreement before the NRC has issued a final repository decision and would require the agreement, to the extent allowable, to prioritize the storage of DOE-owned civilian waste from facilities that have ceased commercial operation and are in an area of high seismicity and close to a major body of water. The House Energy and Commerce Committee ordered an amended version of the bill on November 20, 2019. A similar bill (S. 2917) was introduced in the Senate.

The “Nuclear Waste Administration Act of 2019” (S. 1234), introduced on April 30, 2019, by Senator Lisa Murkowski (R-AK), would establish a new federal agency (the Nuclear Waste Administration) and require it to site, construct, and operate a pilot facility for the storage of “priority waste,” at least one additional facility for the storage of nonpriority nuclear waste, and at least one repository for the permanent disposal of nuclear waste. The bill would define “priority waste” as spent fuel removed from a commercial power reactor that has been permanently shut down and any “emergency delivery.”¹ The Senate Committee on Energy and Natural Resources held a hearing on this bill on June 27, 2019. There is no companion bill in the House.

The “Storage and Transportation of Residual and Excess (STORE) Nuclear Fuel Act of 2019” (H.R. 3136), introduced on June 5, 2019, by Representative Doris Matsui (D-CA), would, if passed, establish a program for the interim storage of high-level radioactive waste and spent fuel. The bill would address the issue of prioritization by requiring DOE, when entering into agreements for acceptance of title, transportation, and interim storage of high-level radioactive waste or spent fuel, to prioritize acceptance of any “emergency delivery,” as well as high-level radioactive waste or spent fuel from commercial power reactors that have been permanently shut down. This bill has not advanced since its introduction last year. Also, there is no companion bill in the Senate.

The “Spent Fuel Prioritization Act of 2019” (H.R. 2995), introduced on May 23, 2019, by Representative Mike Levin (D-CA), would, if passed, require DOE, in deciding the order in which it will accept high-level radioactive waste or spent fuel for disposal or storage, to give priority based on the operating status of the reactor at which the spent fuel or waste is located, the population of that area, and the earthquake hazard of that area. The bill would require DOE to give the highest priority to spent fuel and waste from reactors that are decommissioned or decommissioning, are located in the largest population areas, and are located in areas with the highest earthquake hazard. This bill has not advanced since its introduction last year. Also, there is no companion bill in the Senate.

Any questions or concerns related to bills should be addressed to Congress. Also, please note that these bills may change during the legislative process, and thus it is possible that the scope of a bill could change.

Q2. NRC inspections related to fuel loading and the transfer to Holtec system

Q2 a.: Summary of inspection activities and outcomes at SONGS since fuel loading resumed in summer 2019

R2 a.: The NRC performed 18 unannounced Independent Spent Fuel Storage Installation (ISFSI) inspections at the SONGS site between July 2019 and June 2020 to inspect key dry cask loading operations and other activities associated with the Holtec International Storage Module (HI-STORM) Underground Maximum Capacity (UMAX) storage system and the ISFSI. Last October, the NRC provided an update to the California Coastal Commission regarding the NRC’s inspections of the Holtec International Storage Module Underground Maximum Capacity (HI-STORM UMAX) system. In 2020, we inspected this SONGS ISFSI on or about the following dates: January 16-18, February 5-6, March 9-12, April 13-30 (Remote), and May 20-24, and

1. S. 1234 and H.R. 3136 contain similar definitions for the term “emergency delivery.” In essence, “emergency delivery” is defined in the bills as spent fuel and high-level radioactive waste accepted for storage before the date provided in the contractual delivery commitment schedule and may include spent fuel and high-level radioactive waste from certain defense activities.

June 23. The inspections did not result in any findings associated with fuel transfer operations since the licensee resumed fuel loading activities in July 2019.

During these inspections, our inspectors observed key portions of fuel loading activities, including loading spent nuclear fuel into canisters, transporting loaded canisters within the site to the ISFSI, and downloading the loaded canisters into the HI-STORM UMAX storage system. Specifically, the NRC staff inspected: (1) licensee practice runs; (2) training for personnel to perform the fuel loading campaign; (3) fuel loading activities, including processing, welding, and preparing the canisters for movement; (4) transfer and downloading of canisters from the spent fuel pool into the HI-STORM UMAX facility; (5) canister cleaning activities on site; and (6) loading of a fuel canister containing damaged fuel.

Q2 b.: Anticipated inspection schedule moving forward, recognizing that fuel transfer is anticipated to be complete summer 2020

R2 b.: Since these inspections are unannounced (non-public), we do not provide comments or information on the timing of our spent fuel inspections outside the agency. Management in the NRC's Region IV office plans to maintain unannounced oversight activities of fuel transfer operations at the SONGS site at least once per month to inspect fuel loading activities while fuel transfer operations are still ongoing.

Q3. NRC requirements related to dry-cask fuel storage at SONGS

Q3 a.: Site-specific licensing requirements related to Holtec system's Certificate of Compliance

R3 a.: The NRC has a regulatory framework in place to ensure the safe and secure storage of spent nuclear fuel. We conduct an extensive review of each storage cask design before issuing a certificate of compliance (CoC) and provide oversight on the fabrication of storage casks. Storage cask designs are issued through changes to NRC regulations including opportunity for public comment. We conduct thorough reviews and only approve designs that meet those requirements.

The HI-STORM UMAX system is approved for use under a general license (encompassed by the SONGS site's Title 10 of the *Code of Federal Regulations* [10 CFR] Part 50, "Domestic Licensing of Production and Utilization Facilities" specific license). A general license authorizes storage of spent fuel in casks previously approved by the NRC at a site already licensed to possess fuel to operate a nuclear power plant. Storage cask designs are issued for a CoC after NRC review and approval.

Before using this NRC-approved CoC at the site, the licensee was required to demonstrate that the cask system design was appropriate for the site conditions at the SONGS site. The final safety analysis report for the HI-STORM UMAX storage system contains the necessary information to support the use of the NRC approved spent nuclear fuel dry storage system under the provisions of 10 CFR Part 72, "Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater Than Class C Waste." Southern California Edison (SCE) had to perform site-specific analysis of the use of this system at the SONGS site, to demonstrate that the seismic, environmental, groundwater, and other relevant factors at the site meet the regulatory requirements for the safe storage of spent nuclear fuel in a dry cask storage system. The NRC's Region IV Office and its Office of Nuclear Material Safety and Safeguards staff have confirmed that the SONGS HI-STORM

UMAX spent fuel storage system met the Part 72 criteria for use at the SONGS site via numerous technical reviews and onsite inspection activities.

The NRC remains confident that reasonable assurance of adequate protection of the public health and safety can be maintained for as long as fuel is stored in accordance with the requirements of the SONGS site license, the CoC for the HI-STORM UMAX system, and other applicable NRC requirements.

Q3 b.: Inspection and monitoring requirements (general overview)

R3 b: The NRC's safety oversight program for spent fuel storage is designed to provide reasonable assurance of compliance with NRC requirements. The oversight program includes inspections and assessments of licensee and vendor activities with a focus on assuring public health and safety. For ISFSI inspections at a reactor site that is undergoing decommissioning, inspections are conducted on a periodic basis. As stated earlier (R2 b.), management in our Region IV office plans to maintain oversight activities of fuel transfer operations at the SONGS site at least once per month to inspect fuel loading activities, while fuel transfer operations are still ongoing.

Throughout site decommissioning and during the operation and eventual decommissioning of the ISFSI, the NRC requirements include that the licensee establish programs for:

- demonstration of technical and financial qualifications to operate the ISFSI facility safely;
- maintenance of an emergency plan;
- maintenance of a quality assurance program;
- maintenance of a physical protection plan;
- maintenance of a decommissioning funding plan; and
- maintenance of a training and qualifications program.

The NRC staff ensures that the licensee's programs and plans in these areas are adhered to through reviews of licensee submitted reports and inspections.

Q3 c.: Timing and general summary of required elements of Aging Management Plans for the two different ISFSI systems (storage systems)

R3 c.: The NRC's regulatory framework provides reasonable assurance for the continued safe and secure storage of spent fuel throughout a renewal period. The NRC requirements for renewal of a CoC include: 1) time-limited aging analyses that demonstrate that structures, systems, and components important to safety will continue to perform their intended function for the requested period of extended operation; and 2) a description of the aging management program (AMP) for management of issues associated with aging that could adversely affect structures, systems, and components important to safety. The AMP is composed of 10 AMP elements, which will be used to describe the program to manage issues for two different storage systems at the SONGS site. These AMP elements describe preventative actions, ways to detect aging effects, and items that are monitored or inspected.

At the SONGS site, SCE uses two different storage systems, the HI-STORM UMAX storage system and the TN Standardized Advanced NUHOMS Horizontal Modular Storage System. Both these storage systems are approved for use under a general license.

Regarding the NUHOMS system, we currently are reviewing the CoC renewal application. If the NRC safety review results in CoC renewal, SCE would be required to develop procedures for implementing the approved AMPs, including the AMP elements, to the NUHOMS storage system at its site.

The HI-STORM UMAX system is in its initial CoC period of 20 years. The CoC for the HI-STORM UMAX system will expire in 2035, unless an application for renewal of the system is approved. Under the NRC Regulations in 10 CFR Part 72, a renewal application must include AMPs.

Since the publication of the NRC's 2014 final rule on the continued storage of spent nuclear fuel (79 FR 56251; September 19, 2014), we have issued guidance that defines acceptable approaches to managing aging during extended storage through inspections, monitoring activities, and preventive actions. Two of the NRC's guidance documents addressing aging management are: (1) NUREG-1927, Revision 1, "Standard Review Plan for Renewal of Specific Licenses and Certificates of Compliance for Dry Storage of Spent Nuclear Fuel"; and (2) NUREG-2214, "Managing Aging Processes in Storage Report." Also, we developed a temporary instruction (TI), NRC TI 2690/011, "Review of Aging Management Programs at Independent Spent Fuel Storage Installations." The TI served as an information-gathering activity and the results of the inspections will be used to develop guidance within the NRC inspection program to evaluate licensees' performance of these aging management activities.