July 1, 1998

FOR: The Commissioners

FROM: L. Joseph Callan /s/ Executive Director for Operations

SUBJECT: ANNUAL REPORT ON THE STATUS OF PREMATURELY SHUT DOWN PLANTS

PURPOSE:

To inform the Commission of the status of open issues and the progress of specific facilities toward decommissioning. The last report was sent to the Commission on May 30, 1997.

BACKGROUND:

In COMJC-92-002 of March 3, 1992, the Commission directed the staff to submit quarterly reports on the status of pending licensing and regulatory actions for prematurely shutdown plants. In SECY-95-087, the Commission approved, by negative consent, an annual reporting frequency.

DISCUSSION:

This report is divided into five sections: Rulemaking Activities, Decommissioning Guidance, Integrated Decommissioning Inspection Program, Public Meetings, and Current Plant Status. All power reactors that are currently being decommissioned were shut down prematurely (prior to the expiration of their 40-year license). Experience gained in regulating these facilities has, where appropriate, been included in rulemaking activities and the inspection program, as described below. Public meetings to provide information on the decommissioning process and obtain public comments are required by 10 CFR 50.82. The section on public meetings provides a summary of the meetings the staff has conducted. Activities at individual plants that occurred since the last report to the Commission are discussed in Current Plant Status.

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I. Rulemaking Activities

Since the previous report to the Commission the following rulemaking activities are underway:

On September 10, 1997, the Commission published in the *Federal Register* a notice of proposed rulemaking regarding financial requirements for decommissioning nuclear power reactors. The proposed amendments are in response to the potential rate deregulation of the power generating industry and respond to questions on whether current NRC regulations concerning decommissioning funds and their associated financial assurance mechanisms will need to be modified. In addition to expanding and clarifying allowable assurance mechanisms, the proposed action would require power reactor licensees to report periodically on the status of their decommissioning funds and on the changes in their external trust agreements. Also, the proposed amendment would allow licensees to take credit for the earning on decommissioning trust funds. The proposed rulemaking incorporated comments received from the advanced notice of rulemaking published in 1996. The final rule is scheduled to be issued later in 1998.

On October 30, 1997, the Commission published in the *Federal Register* a notice of proposed rulemaking to allow nuclear reactor licensees to reduce onsite and offsite insurance liability coverage at permanently shutdown reactors in a step wise fashion commensurate with the reductions in risk as the spent fuel cools and the onsite inventory of radioactive materials is reduced during decommissioning. The staff is now analyzing public comments and preparing the final rule for publication.

The staff is developing a draft rulemaking plan for physical protection for Part 50 reactor licensees who have submitted certification of permanent cessation of operations and are planning to store spent fuel in their spent fuel pool. The draft plan is expected to be complete in September 1998. The staff is also developing a draft rulemaking plan for staffing at permanently shutdown reactors that would lead to a rule clarifying onsite staffing and training requirements. If approved, the proposed rule is expected to be published in the *Federal Register* in FY99.

On July 10, 1997, the Commission approved a rulemaking plan for development of revised emergency preparedness rules for permanently shutdown reactors. The scope was expanded to include non-power reactors. The staff has decided to prepare a guidance document for decommissioning reactor emergency plans before revising decommissioning emergency preparedness rules. In this manner, the revised rules may be written so that prior NRC review of decommissioning emergency plans is not required. The staff is presently working to develop the necessary guidance. The proposed rule is expected to be published in the *Federal Register* in FY99.

II. Decommissioning Guidance

Since the last report to the Commission, the staff has worked on issuing guidance for licensees and for the public. The staff has completed and issued the draft guidance listed below:

- DG-1067, "Decommissioning of Nuclear Power Reactors." This document provides guidance on the regulations applicable to decommissioning and

was prepared to support a revision of the Decommissioning Rule in 1996.

- DG-1071, "Standard Format and Content for Post-Shutdown Decommissioning Activities Report." Provides guidance to licensees on the preparation of the PSDAR, which is a new requirement in the 1996 rule.

- DG-1078, "Standard Format and Content of License Termination Plans for Nuclear Power Reactors." Provides guidance to licensees on the preparation of a License Termination Plan, which is a new requirement of the 1996 rule.

- Draft NUREG-1628, "Staff Responses to Frequently Asked Questions Concerning Decommissioning of Nuclear Power Reactors." Many concerns expressed at public meetings are similar from one site to another. This document was developed to enhance public understanding by collecting frequently requested information into an easily obtainable source.

- Draft NUREG-1625, "Proposed Standard Technical Specifications (TSs) for Permanently Defueled Westinghouse Plants." Provides guidance on removing unnecessary requirements from Technical Specifications and adding or revising requirements appropriate to the permanently defueled condition.

III. Integrated Decommissioning Inspection Program

The staff reviewed the regional implementation of the inspection programs of the Offices of Nuclear Reactor Regulation (NRR) and Nuclear Material Safety and Safeguards (NMSS) for power reactors that have permanently ceased operation. In order to implement a coordinated assessment of licensee performance at these facilities, the staff has developed a single decommissioning inspection program to combine inspection elements from the NRR and NMSS inspection programs. We believe that this initiative will contribute to consistency of inspection, efficiency in project management oversight, and elimination of duplicative staff effort. Program implementation is underway.

IV. Public Meetings

The NRC is required to hold public meetings after receipt of the post-shutdown decommissioning activities report (PSDAR) and the license termination plan (LTP).

The staff conducted 11 public meetings from May 1997 through June 1998. Although not specifically required by the regulations, the staff has also conducted "pre-PSDAR" meetings to provide information on the decommissioning process to the local community in a timely manner after a licensee submits written certification of permanent cessation of operation. Based on public response to the "pre-PSDAR" meetings, the staff plans to continue this practice.

V. Current Plant Status

Since the last report in May 1997, four additional units have shut down prematurely: Big Rock Point, Maine Yankee, and Zion Units 1 and 2.

A. Big Rock Point

Big Rock Point submitted a Decommissioning Plan (D-Plan) in 1995, in anticipation of the expiration of their operating license in 2000. The licensee chose the SAFSTOR (safe storage) option. In 1996, the D-Plan was converted to a PSDAR.

In 1997, the licensee determined that the relatively small size of the plant, 67 MW electric, was likely to make it too expensive to operate in an increasingly competitive environment. On June 26, 1997, Big Rock Point submitted a certification that it would permanently cease operations as of August 30, 1997. The licensee submitted certification of permanent removal of fuel from the reactor vessel on September 23, 1997.

Big Rock Point revised the PSDAR on September 19, 1997, to change its decommissioning option to DECON (decontamination and dismantlement). Since this represented a significant change to the licensee's PSDAR, the staff conducted a public meeting on November 13, 1997, to inform the public of the change.

The licensee performed a reactor coolant system (RCS) chemical decontamination during December 1997 and January 1998. Removal of major equipment is scheduled for the third quarter of 1998.

B. Dresden 1

Commonwealth Edison Company (CECo), licensee for the Dresden station, expects to maintain Unit 1 in SAFSTOR until Dresden Units 2 and 3 are ready for decommissioning. If license renewal for Units 2 and 3 is not initiated, all three Dresden units will be decommissioned by removal of radioactive material and dismantlement beginning no earlier than 2011.

An update to the licensee's PSDAR was received in June 1998, and a public meeting will be held on July 23, 1998.

C. Haddam Neck

The licensee for Haddam Neck, Connecticut Yankee Atomic Power Company, submitted its PSDAR in August 1997 and chose the DECON option. The licensee has 1,019 spent fuel assemblies in its spent fuel pool, and it plans to keep the spent fuel in wet storage until DOE will accept it. The licensee

has filed suit against DOE to recover $90 million for expenses related to extended storage of the spent fuel. Since the last report to the Commission, the licensee has brought in a new management team for Haddam Neck, divested its nuclear services division, and restructured its organization to focus on decommissioning activities.

The licensee received a confirmatory action letter (CAL) from Region I in March 1997, which addressed improvements that needed to be made to Haddam Neck's radiation protection program. The CAL provided for NRC's review before the licensee performed any significant radiological work. The restrictions of the CAL were lifted on May 5, 1998.

In May 1997, the NRC imposed a civil penalty of $650,000 on the licensee for longstanding deficiencies during the time the plant was still operating. These deficiencies were in engineering programs and practices, operations, inadequate corrective actions, and inadequate implementation of the emergency preparedness program. Inspection Report 50-213/98-01, issued May 13, 1998, noted that weaknesses remain in some of those areas.

The licensee made a considerable effort to locate potentially contaminated materials released offsite in previous years, and more than 80 locations have been identified. Remediation efforts by the licensee are continuing. The licensee plans to begin active decommissioning activities in June 1998, beginning with a chemical decontamination of the reactor coolant system.

The staff approved a revision to the Haddam Neck Quality Assurance Plan and issued a license amendment to revise the Administrative Controls section of the technical specifications (TSs). The license amendment reduced staffing requirements and eliminated reactor operator licensing and training. A certified fuel handler position is now allowed as the senior watch-standing position. Additionally, the staff is reviewing a license amendment request for defueled TSs. The staff is reviewing requested exemptions to revise financial protection requirements, emergency preparedness, and physical security to reflect the defueled condition of the plant.

A public meeting on the licensee's PSDAR was held October 27, 1997.

D. Humboldt Bay

The facility remains in a SAFSTOR status, and spent fuel is stored in the spent fuel pool. The licensee, Pacific Gas & Electric Company, has changed its decommissioning plans by accelerating the schedule for license termination. The target date for license termination has been advanced from 2015 to 2004. The changes include a plan to seek regulatory approval for an onsite independent spent fuel storage installation (ISFSI). The application for NRC's approval of the ISFSI is scheduled to be submitted in 1999. One partial dismantlement activity (removal of the 250-foot vent stack to reduce risk from seismic events) will be performed in mid-1998 under the provisions of 10 CFR 50.59. The licensee submitted an updated PSDAR to the NRC on February 27, 1998, and a public meeting was held in the vicinity of the plant on April 29, 1998, to discuss the NRC's decommissioning regulations and the PSDAR.

E. Indian Point Unit 1

On January 31, 1996, the staff, after notifying the Commission, issued an order approving the SAFSTOR decommissioning plan for Indian Point Unit 1. Unit 1 will remain in SAFSTOR until Unit 2 is shut down, after which the licensee, Consolidated Edison Company of NY, intends to dismantle both units. Since the unit is in SAFSTOR, there has been little decommissioning activity at the site. Spent fuel is currently stored in the spent fuel pool. The staff plans to conduct a public meeting at Indian Point before the end of the current year.

F. La Crosse

On April 30, 1987, the La Crosse Boiling Water Reactor was permanently shut down for economic reasons. Dairyland Power Cooperative maintains the facility in long-term SAFSTOR, but periodically dismantles and decontaminates some structures, systems and components, in part, to maintain the proficiency of their staff and to utilize the current availability of low-level waste disposal facilities.

A public meeting to discuss the licensee's PSDAR was held on May 13, 1998.

G. Maine Yankee

On August 7, 1997, Maine Yankee Atomic Power Company announced permanent cessation of operations and permanent removal of fuel from the reactor vessel. On August 27, 1997, the licensee submitted its PSDAR, indicating its choice of the DECON alternative. The staff conducted a press conference in Brunswick, Maine, on September 30, 1997, to explain the decommissioning process to local media and conducted a public meeting in Wiscasset, Maine, on October 7, 1997, to explain the decommissioning process to the local community. On November 6, 1997, the staff conducted a public meeting in Wiscasset, Maine to discuss the PSDAR.

In March 1998, the licensee performed a RCS chemical decontamination. The utility plans to award a contract to dismantle the plant in August 1998. Work is scheduled to begin in September 1998.

The staff has issued two license amendments since the cessation of operations. The first was a change to the TS for facility staffing that removed the requirement for licensed operators and allowed the use of certified fuel handlers as the senior watch-standing position. The staff also issued a license amendment that replaced the TSs in their entirety. The staff is currently processing seven licensing actions, including two TS changes (a modification to certain license conditions and a change in the fuel pool storage water level) and five exemptions associated with emergency planning requirements and exercise requirements, security requirements, and onsite and offsite financial protection requirements. The staff is also responding to an NEI request (prompted by the Maine Yankee emergency planning exemption request) regarding the applicability of the backfit rule to permanently shutdown reactors.

H. Rancho Seco

Under its SAFSTOR decommissioning plan, the Sacramento Municipal Utility District (SMUD), licensee for Rancho Seco, plans to transfer the spent fuel from the Rancho Seco spent fuel pool to an onsite ISFSI licensed separately by NMSS under 10 CFR Part 72. Construction of the ISFSI is now on hold because of ISFSI vendor performance concerns.

In late 1994, SMUD informed the NRC that it had begun a reevaluation of decommissioning methods different from the long-term SAFSTOR decommissioning plan approved by the NRC. In January 1997, SMUD completed its reevaluation and is now considering changing

from SAFSTOR to a dismantlement alternative. The licensee is undertaking some limited dismantlement of mildly radioactive systems consistent with its existing decommissioning plan and will evaluate the effectiveness and cost of the dismantlement before deciding to change decommissioning alternatives. Currently, the licensee is dismantling secondary plant systems located in the turbine building.

The NRC staff is reviewing a revised combined emergency plan that addresses both the Part 50 reactor site and the Part 72 ISFSI site. The NRC staff also is reviewing a license amendment request to update the spent fuel shipping cask licensing basis before fuel from the spent fuel pool is moved to the ISFSI.

I. San Onofre Unit 1

Southern California Edison Company (SCE), licensee for San Onofre Nuclear Generating Station (SONGS) 1, continues to conduct activities in accordance with its permanently defueled Technical Specifications (PDTSs), which were approved in December 1993. In November 1994, SCE submitted the SONGS decommissioning plan in which it proposed the SAFSTOR decommissioning alternative. Currently, SCE intends to dismantle Unit 1 simultaneously with Units 2 and 3 beginning in 2013. The Decommissioning Plan was not reviewed by the staff and became the PSDAR in accordance with the 1996 decommissioning rule. Since the last report to the Commission, the staff issued one license amendment, which made administrative and editorial changes to the PDTS.

SCE is storing spent fuel from Unit 1 in all three spent fuel pools. Although the decommissioning plan indicates that SCE may move the fuel to an alternative onsite storage facility as early as 1998, the licensee has not yet submitted any licensing action requests related to an ISFSI.

The licensee expects to submit an updated PSDAR in December 1998. A public meeting will be scheduled after the update is received.

J. Trojan

The Trojan Nuclear Plant is using the DECON option. The licensee for Trojan, Portland General Electric Company (PGE), proposed on March 31, 1997, to remove the reactor

vessel, fill the vessel with concrete to fix contamination, and ship the vessel (which will serve as its own shipping container) to the U.S. Ecology low-level waste site at Hanford, Washington. The staff is reviewing this proposal.

The licensee intends to store the spent fuel in an onsite ISFSI licensed under 10 CFR Part 72. PGE chose the Sierra Nuclear TranStor storage, which utilizes a ventilated concrete cask and a welded stainless steel basket. The NRC staff is reviewing the PGE Part 72 license request. The licensee intends to begin movement of fuel from the spent fuel pool to the ISFSI in 1999.

During 1997, the licensee used a steam reformation process and a proprietary catalyst to convert filter bags holding spent fuel debris into a form suitable for storage in sealed metal containers in either the spent fuel pool or an ISFSI. This unreviewed safety question was reviewed by the staff and a license amendment allowing the steam reformation process was issued.

K. Yankee Rowe

The licensee for Yankee Rowe, Yankee Atomic Electric Company, chose the DECON option and has removed all of the primary system components and much of the secondary side components from the plant. The containment and other major structures remain. The spent fuel pool building is the only remaining "vital" area and has a safeguards program in place. The spent fuel pool has been segregated from remaining decontamination and dismantlement activities by providing it with independent electrical and cooling systems.

The licensee has initiated the final site survey and has applied for approval of its license termination plan. The staff has performed the first of four scheduled confirmatory inspections of the final site survey work. Three local citizens' groups filed petitions for leave to intervene on the License Termination Plan which were denied by Licensing Board order dated June 12, 1998.

A public meeting to discuss the license termination plan was held on January 13, 1998.

L. Zion Units 1 and 2

On January 14, 1998, Commonwealth Edison Company (CECo) announced its intention to permanently shut down Zion Station Units 1 and 2. On February 13, 1998, CECo certified the permanent cessation of operations at Zion Units 1 and 2. On March 9, 1998, CECo certified that all fuel had been removed from the Zion Units 1 and 2 reactor vessels and stated that those units will remain permanently defueled.

On June 16, 1998, the Executive Director for Operations approved the realignment of Regional decommissioning inspection responsibility from the Division of Reactor Projects to the Division of Nuclear Materials Safety (DNMS). The transfer to DNMS effectively ends the Resident Inspection program

at Zion. Region-based inspection resources will continue to implement the required inspection program.

CECo has not submitted a PSDAR; however, it has indicated its intention to place Zion Units 1 and 2 in SAFSTOR until approximately 2010. Currently, the fuel from both units is stored in the common spent fuel pool. The NRC staff is reviewing the CECo-certified fuel handler program and an amendment request, which asks that the licensee be permitted to not implement the improved operating reactor TSs that have been approved by license amendment and continue to follow its current custom TSs. The amendment request also addresses organizational issues and operator staffing. The staff has recently received a hearing request on this amendment. CECo intends to submit Zion's decommissioning TSs and decommissioning final safety evaluation report by the end of CY 1998.

The NRC held a public meeting on June 1, 1998, near the Zion nuclear plant, to explain the decommissioning process to the local community.

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