

POLICY ISSUE INFORMATION

April 25, 2000

SECY-00-0094

FOR: The Commissioners

FROM: William D. Travers
Executive Director for Operations

SUBJECT: STATUS OF DECOMMISSIONING PROGRAM

PURPOSE:

To provide the Commission with a comprehensive overview of decommissioning activities, including the decommissioning of Site Decommissioning Management Plan (SDMP) sites and other complex decommissioning sites, and commercial reactor decommissioning, as requested in the June 23, 1999, Staff Requirements Memorandum (SRM). The status of progress made on the removal of contaminated sites from the SDMP list will be presented as requested in the August 26, 1999, SRM. In addition, the staff will summarize its efforts to rebaseline the decommissioning program and present current schedules for the cleanup of all decommissioning sites.

SUMMARY:

This paper subsumes the annual report to the Commission on SDMP sites and provides a comprehensive overview of the decommissioning program. Consistent with Commission direction, it is the first time that the staff has provided a combined overview of the decommissioning activities within the Office of Nuclear Material Safety and Safeguards (NMSS) and the Office of Nuclear Reactor Regulation (NRR).

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BACKGROUND:

The NMSS staff provided a report on the status of the decommissioning program and progress on the remediation of the SDMP sites in SECY-99-035, "Status of Decommissioning Program and Site Decommissioning Management Plan Sites," dated February 1, 1999. In addition, NMSS staff briefed the Commission on implementation of the License Termination Rule (LTR) and the Program on Complex Decommissioning Cases on July 29, 1999. Further, the NRR staff briefed the Commission on March 17, 1999, regarding commercial reactor decommissioning regulatory issues.

The Commission issued SRM (M990317C) dated June 23, 1999, requesting that the staff: (1) consider the viability of an integrated, risk-informed reactor decommissioning rule versus individual rulemakings, to address insurance, emergency preparedness, safeguards, backfit, fitness-for-duty, and staffing. If viable, the staff should outline its plans for pursuing a rule; and (2) provide a single coordinated annual report on all decommissioning activities. SECY-99-168, dated June 30, 1999, recommended approval of an integrated rulemaking approach and outlined plans for such a rulemaking. Accordingly, the staff subsumed previous rulemaking activities in the areas of emergency planning, insurance, safeguards, operator staffing, and backfit into one integrated rulemaking.

The Commission issued SRM (M990729B) dated August 26, 1999, requesting that the staff provide: (1) the status of the remaining active SDMP sites, including plans and schedules for each site; and (2) a summary report on all sites currently in the SDMP. The status of all SDMP and other complex decommissioning sites is addressed in this paper. The Commission also requested that the staff provide a paper that describes and analyzes the issues that need to be considered before the Commission could propose legislation aimed at facilitating the cleanup of sites in non-Agreement States. This latter issue will be the subject of a separate Commission paper.

DISCUSSION:

1. Summary of Decommissioning Program

The function of the decommissioning program is to regulate the decontamination and decommissioning of material and fuel cycle facilities, power reactors, and non-power reactors, resulting in the ultimate goal of license termination. A broad spectrum of activities associated with these program functions are discussed in Attachment 1. Principal program areas focused on licensing casework and status of sites undergoing decommissioning are discussed below.

Approximately 300 materials licenses are terminated each year. Most of these license terminations are routine and the sites require little, if any, remediation to meet the U.S. Nuclear Regulatory Commission's (NRC's) unrestricted release criteria. The decommissioning program is responsible for setting policies, procedures, and criteria, for routine terminations, and for the termination of licenses that are not routine because the sites require more complex decommissioning activities. Currently, there are 19 nuclear power plants, 9 research reactors, and 29 materials facilities undergoing non-routine decommissioning. Details on these sites are presented in Section 2 below.

NMSS, NRR and the Office of Nuclear Regulatory Research (RES) have responsibility for decommissioning program activities. In general, NRR has oversight of the initial stages of power reactor decommissioning; NMSS regulates the decommissioning of nuclear material facilities and has oversight of power reactors once the spent fuel is no longer stored in the spent fuel pool; and RES provides technical contributions through the development of guidance and dose-modeling techniques. The staff has taken steps to ensure that integration of decommissioning activities within the Agency occurs. First, as noted in SECY-99-035, the Agency Operating Plan is being used to track and manage major decommissioning issues. In some cases, NMSS tracks RES decommissioning activities in the Agency Operating Plan. Second, the Decommissioning Management Board (hereafter the Board) meets bi-weekly to provide management input on decommissioning activities and issues. The Board, composed of managers from NMSS, RES, NRR, OGC, and the Regions, serves as an effective mechanism for integrating inter-Office and regional coordination of program activities and issue resolution.

2. Decommissioning Activities

a. SDMP and Other Complex Site Decommissioning

NMSS initially presented the SDMP to the Commission in SECY-90-121, dated March 29, 1990. The SDMP was created in response to SRMs dated August 22, 1989, and January 31, 1990, which directed the staff to develop a comprehensive strategy for achieving closure of decommissioning issues in a timely manner, and to develop a list of contaminated sites in order of cleanup priority, respectively. Attachment 2 provides the criteria for placing a site on the SDMP.

The LTR (10 CFR Part 20, Subpart E) authorizes two different sets of cleanup criteria for SDMP sites--the SDMP Action Plan criteria, and dose-based criteria. Under the provisions of 10 CFR 20.1401(b), any licensee that submitted its Decommissioning Plan (DP) before August 20, 1998, and received NRC approval of that DP before August 20, 1999, could use the SDMP Action Plan criteria for site remediation. In the SRM on SECY-99-195, the Commission granted an extension of the DP approval deadline to August 20, 2000. All other sites must use the dose-based criteria of the LTR.

There are currently 26 SDMP sites and three additional complex decommissioning sites undergoing decommissioning (see Attachment 3). Twenty sites have been removed from the SDMP after successful remediation (see Attachment 4). In addition, 11 sites have been removed from the SDMP by transfer to an Agreement State or the U.S. Environmental Protection Agency (see Attachment 5). The NRC is currently committed to removing three sites from the SDMP in fiscal year 2000 (FY00) and FY01. The staff should be able to remove three sites from the SDMP in FY00. However, since the remaining SDMP sites are rather complex decommissioning cases and dose modeling required under the LTR places more demands on licensees, it is likely that fewer sites will be removed from the SDMP in FY01.

In addition to regulating the cleanup of SDMP and complex decommissioning sites, the decommissioning program is responsible for overseeing the cleanup of contaminated sites identified under the Oak Ridge National Laboratory (ORNL) Terminated License Review Project. As a result of the ORNL review, and subsequent follow-up by the Regions, a total of

38 formerly licensed sites were found to have residual contamination levels exceeding NRC's criteria for unrestricted release (see Attachment 6). Seventeen of these sites have been re-released after successful remediation, and 11 have been closed by transfer to Agreement States or a Federal entity. Ten sites remain open pending remediation. Two of the formerly licensed sites were added to the SDMP because these sites will require non-routine decommissioning activities. The remaining sites are considered to be non-complex and, therefore, do not warrant placement on the SDMP at this time. However, it is possible that these sites may be added to the SDMP if the staff's assessment of site conditions change. The staff continues to work toward review of all remaining ORNL identified sites, with each Region budgeted at 0.1 full-time equivalents (FTEs) per year for this purpose.

In September 1999, the Division of Waste Management (DWM) began rebaselining the materials decommissioning program to determine the current status of each SDMP and complex decommissioning sites, and to develop a comprehensive integrated plan for successfully bringing the sites to closure. To facilitate planning, site status summaries as of December 31, 1999, were developed for each SDMP and complex decommissioning site (see Attachment 7). These summaries indicate the status of each site and identify the technical and regulatory issues impacting removal of the site from the SDMP or completion of decommissioning. For those licensees that have submitted a DP, the schedules are based on the staff's assessment of the complexity of the DP review. For those licensees that have not submitted a DP, the schedules are based on other information available to the staff and the decommissioning approach anticipated by the staff. The comprehensive plan for each site includes identification of all major milestones and management of the sites, using project management software. An example of a site Gantt chart is presented in Attachment 8.

As part of the rebaselining process, the staff is also implementing streamlining objectives such as: assuming a more proactive role in interacting with licensees undergoing decommissioning; implementing procedures to reduce the number of requests for additional information; conducting in-process/side-by-side confirmatory surveys; and, relying more heavily on licensees quality assurance programs rather than conducting large scale confirmatory surveys. Further, the staff is incorporating strategies to achieve the performance goals identified as part of the Agency's strategic planning process and draft Strategic Plan for FY00-05. Examples of strategies being incorporated include: focusing on resolving key issues such as institutional control for restricted release, partial release, and rubbleization; conducting stakeholder workshops to seek licensee, industry, and public input; and, enhancing the decommissioning standard review plan.

A table summarizing the decommissioning schedule for all SDMP and complex decommissioning sites is provided in Attachment 9. The schedules depicted may be influenced by the quality and timeliness of licensee submittals and modifications in the licensee's remediation schedule. However, the staff's streamlining efforts may mitigate these schedule impacts somewhat. From the table, the following conclusions can be drawn: (1) 6 of 29 SDMP and complex decommissioning sites have not yet submitted DPs (the last DP should be submitted in 2002); (2) 3 sites have submitted partial DPs; (3) the NRC has approved 10 of 23 DPs submitted to date [the last DP (Fansteel, Inc.) should be approved by 2009]; and (4) the last site (Fansteel) should be removed from the SDMP by 2020. Fansteel has an extremely protracted schedule because its current license allows continuation of reprocessing waste residue for 10-12 more years. Each site schedule was developed independently by the staff,

without formal licensee input, using the standard assumptions presented in Attachment 10 and the site-specific assumptions stated in the site summaries. Changing any of the site-specific or standard assumptions could have a significant impact on the site decommissioning schedules but this approach represents a reasonable model for planning.

The site decommissioning schedules presented in Attachment 9 are based on the assumption that the NRC will retain regulatory responsibility for SDMP and other complex decommissioning sites located in States likely to become Agreement States soon. The staff made this assumption because it represents a worse-case resource and planning requirement for the staff. This approach facilitates planning because it eliminates an unknown. However, it is possible that as many as 16 current SDMP sites may be transferred to Agreement States (Minnesota-1, Oklahoma-5, Pennsylvania-10) in or before 2002. Issues associated with transferring sites to Agreement States are discussed in SECY-97-188, SECY-98-011, and SECY-98-273.

b. Reactor Decommissioning

NMSS and NRR signed a Memorandum of Understanding (MOU) on March 10, 1995, which delineates the responsibilities for power reactor decommissioning between NRR and NMSS. In accordance with the MOU, NRR along with the appropriate Region, will be responsible for project management, and inspection oversight for a power reactor undergoing decommissioning until the spent fuel is permanently removed from the spent fuel pool. Once the spent fuel is permanently transferred from the spent fuel pool, the facility is transferred to NMSS and NMSS assumes responsibility for project management, and along with the appropriate Region, inspection oversight. However, a facility may submit a license termination plan (LTP) before the spent fuel is permanently transferred from the spent fuel pool. In this case, NMSS staff is responsible for reviewing the LTP, and preparing the safety evaluation report, the environmental assessment, and the license termination order or amendment. NMSS is also responsible for confirmatory surveys and license termination activities, including assurance that appropriate site release criteria have been met.

NRR currently has regulatory project management responsibility for 17 power reactors. Plant status summaries for reactors under NRR project management are provided in Attachment 11. Regulatory project management responsibility for two reactors (Fermi 1 and Peach Bottom Unit 1) has been transferred from NRR to NMSS. Plant status summaries for Fermi 1 and Peach Bottom Unit 1 are provided in Attachment 12. NMSS is currently reviewing the LTPs for Trojan, Maine Yankee, and Saxton, and expects to receive the LTP for Connecticut Yankee in 2000. The staff has developed a generic schedule for reviewing LTPs (see Attachment 13). Attachment 14 provides a schedule for reactor decommissioning activities.

3. Guidance and Rulemaking Activities

In an SRM dated July, 8, 1998, the Commission directed the staff to prepare various guidance documents in support of the "Final Rule on Radiological Criteria for License Termination." As a result, the staff is in the process of developing several guidance documents that will help licensees prepare decommissioning documents, and provide the staff with uniform criteria for reviewing licensee submittals. The staff conducted several workshops with stakeholders to obtain input on the development of the Standard Review Plan (SRP) for decommissioning.

A listing of the decommissioning guidance documents under development and a schedule for completion are presented in Attachment 15. In addition to the Regulatory Guides and SRPs identified in Attachment 15, the staff has also developed building surface concentration screening values and surface soil concentration values to support implementation of the LTR. These values were published in the Federal Register on November 18, 1998, and December 7, 1999, respectively. In addition, DWM provides support to ongoing rulemaking efforts regarding the control of solid materials.

SECY-99-168, dated June 30, 1999, recommended that risk posed by spent fuel pools at decommissioning reactors be assessed and the results of the risk assessments be used as a technical basis for developing an integrated approach to decommissioning reactor rulemaking in the areas of emergency planning, insurance, safeguards, operator staffing and backfit. The SRM for SECY-99-168 was issued on December 21, 1999, and approved the staff's development of an integrated rulemaking plan for decommissioning regulations. A draft technical study on spent fuel pool risks at decommissioning reactors was issued for public comment on February 15, 2000. Based on the decommissioning risks and report recommendations, NRR staff is currently developing regulatory options and will propose a rulemaking plan as required by the SRM for Commission approval by June 30, 2000.

The staff prepared a rulemaking plan to standardize the process for allowing the partial site release of a reactor facility or site prior to approval of the LTP. The plan was sent to the Commission in SECY-00-0023, dated February 2, 2000.

RESOURCES:

The total decommissioning program staff budget for FY00, 01, and 02 is 85 FTEs, 87 FTEs, and 83 FTEs, respectively. These resource figures include licensing casework directly related to SDMP and other complex decommissioning sites, inspections, Region follow-up on formerly terminated license sites, project management and technical support for decommissioning power reactors, and development of rules and guidance. Resource breakdown for staff (in FTEs), and contractor support (in \$K), as reflected in the FY01 budget to Congress, by Office follows:

	Staff	FY2000 Contractor (FTEs) Support (\$K)	Staff	FY2001 Contractor Support (\$K)	Staff	FY2002 Contractor Support (\$K)
	(FTEs)		(FTEs)		(FTEs)	
NMSS	31	2823	29	2895	26	3385
NRR	22	740	23	500	21	0
RES	10	2625	11	2357	11	2425
OGC	3		3		3	
Regions	19		21		22	
TOTAL	85	6188	87	5752	83	5810

COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objections. The Office of the Chief Financial Officer has reviewed this paper for resource implications and has no objections.

/RA/

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For Operations

ATTACHMENTS:

1. "Decommissioning Program Activities"
2. "Criteria for Placing Site on the SDMP"
3. "Current SDMP and Complex Decommissioning Sites"
4. "Sites Removed from the SDMP after Successful Remediation"
5. "Sites Removed from the SDMP by Transfer to Agreement States or EPA"
6. "Contaminated Formerly Licensed Sites"
7. "Site Status Summaries for SDMP and Complex Decommissioning Sites"
8. Example Site Gantt Chart
9. "Schedule for Termination of SDMP and Complex Decommissioning Sites"
10. "Assumptions Used to Develop SDMP and Complex Decommissioning Site Gantt Charts"
11. "Status Summaries for Reactors Undergoing Decommissioning"
12. "Plant Status Summaries for Fermi Unit 1 and Peach Bottom Unit 1"
13. "Generic LTP Review Schedule"
14. "Schedule for Reactor Decommissioning Activities"
15. "Decommissioning Guidance Documents Under Development"

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