

# **POLICY ISSUE INFORMATION**

August 17, 2001

SECY-01-0156

FOR: The Commissioners

FROM: William D. Travers  
Executive Director for Operations

SUBJECT: 2001 ANNUAL UPDATE - STATUS OF DECOMMISSIONING PROGRAM

PURPOSE:

To provide the Commission with an annual comprehensive overview of decommissioning activities, including the decommissioning of Site Decommissioning Management Plan (SDMP) sites and other complex decommissioning sites, and commercial reactor decommissioning. Although this report is a stand-alone document, it also provides a status update on the decommissioning activities presented in SECY-00-0094.

SUMMARY:

This paper provides a comprehensive overview of the decommissioning program. Consistent with Commission direction, the staff has provided a stand-alone document that presents a combined overview of the decommissioning activities within the Office of Nuclear Material Safety and Safeguards (NMSS), Office of Nuclear Regulatory Research (RES), and the Office of Nuclear Reactor Regulation (NRR). Using SECY-00-0094 as a baseline, progress made in each of the program areas during the past year is described in this paper.

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## BACKGROUND:

The Commission issued a Staff Requirements Memorandum (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. In addition, SRM M990317C, dated June 23, 1999, directed the staff to provide a single coordinated annual report on all decommissioning activities instead of annual reports from separate offices. On April 25, 2000, the staff provided the Commission with SECY-00-0094, which was the first comprehensive, combined overview of the decommissioning activities within NMSS and NRR. This paper provides a similar comprehensive overview, and in addition, highlights the progress made in the decommissioning program during the past year.

The Commission has expressed interest in continuing the annual reporting process embodied in SECY-00-0094, highlighting significant accomplishments and changes. Further, the Commission expressed its desire to make the annual report a comprehensive, stand-alone, report, available for dissemination to all parties interested in the decommissioning program.

## DISCUSSION:

### 1. Summary of Decommissioning Program

The function of the decommissioning program is to regulate the decontamination and decommissioning of materials and fuel cycle facilities, and power and non-power reactors, with the ultimate goal of license termination. A broad spectrum of activities associated with these program functions is discussed in Attachment 1. Principal program areas pertaining to licensing casework and the 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 the termination of licenses that are not routine because the sites require more complex decommissioning activities. Currently, there are 19 nuclear power reactors undergoing routine decommissioning, and 27 materials facilities undergoing non-routine decommissioning. Details on these sites are presented in Section 2, below.

NMSS, NRR, and RES have responsibility for decommissioning program activities. NRR has project management responsibility for all stages of non-power reactor decommissioning and 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 support 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, the Agency Operating Plan is being used to track and manage major decommissioning tasks. NMSS and RES mutually track 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, and the Regions, along with Office of the General Counsel

(OGC), serves as an effective mechanism for integrating inter-Office and regional program activities and issue resolution. The Decommissioning Management Board was cited as one mechanism by which staff could enhance intra-agency communication and ensure that NRC's regulatory processes are integrated (OIG Management Challenge 5 & 6).

## 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. Attachment 2 provides the criteria for placing a site on the SDMP.

The License Termination Rule (LTR) (10 CFR Part 20, Subpart E) authorizes two different sets of cleanup criteria--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 for 12 sites, to August 20, 2000. In September 2000, the staff notified the Commission that all 12 DPs were approved by the deadline. All other sites must use the dose-based criteria of the LTR. In addition, Agreement States were expected to adopt equivalent dose criteria by September 20, 2000.

There are currently 24 SDMP sites and three additional complex decommissioning sites undergoing decommissioning (see Attachment 3). Twenty-two 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 (EPA) (see Attachment 5). NRC is currently committed to removing one site from the SDMP in fiscal year 2001 (FY2001) and FY2002. Historically, the goal has been to remove three sites from the SDMP each year. However, since the remaining sites are rather complex decommissioning cases and dose modeling required under the LTR places more demands on licensees; in FY2001 the goal was reduced to one site annually.

In the FY2000 Operating Plan, three sites -- Pesses Co. (METCOA); Minnesota Mining and Manufacturing (3M); and Watertown Mall -- were scheduled for removal from the SDMP. Pesses Co. (METCOA) was removed from the SDMP in September 1999. 3M and Watertown Mall were removed from the SDMP in September 2000. SECY-00-0172, which authorized the staff to remove 3M from the SDMP, requested that the staff include a thorough discussion of the technical basis for recommending removal of SDMP sites in the future. Future staff recommendations will include summaries of the licensees' dose assessments and the staff's confirmatory dose assessments. In SECY-00-0173, the Commission approved removal of the Watertown Mall site from the SDMP. The Commission also requested that the staff inform it of ongoing discussions regarding whether the Watertown GSA property should be added to the existing Watertown Mall license. To date, the staff has not licensed the Watertown GSA site

and does not plan to pursue licensing, if the U.S. Army Corps of Engineers can complete remediation in accordance with its proposed schedule.

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. Since release of SECY-00-0094, the staff has added one additional site -- Department of Army (Frankford Arsenal, Philadelphia, PA) to the list of contaminated sites, because the Army is not able to remediate the site in a timely manner. As a result of the ORNL review, and subsequent follow-up by the Regions, 39 formerly licensed sites were found to have residual contamination levels, exceeding NRC's criteria for unrestricted release, that could require additional staff attention to ensure timely remediation (see Attachment 6). Eighteen sites have been re-released after successful remediation, and 11 have been closed by transfer to Agreement States or a Federal entity. One site, Atlantic Research Corporation, was re-released in 2000. 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 site conditions change. The staff continues to work toward review of all remaining ORNL-identified sites (43 sites), with each Region budgeted at 0.1 full-time equivalents (FTEs), in FY2001 for this purpose. The Regions expect to complete all reviews by the end of FY2001.

In calendar year 2000, the Division of Waste Management (DWM) staff continued implementation of the rebaselining initiative that began in September 1999. The objective of rebaselining is to develop and implement a comprehensive integrated plan for successfully bringing SDMP and complex decommissioning sites to closure. Site status summaries are maintained, and updated monthly, for each SDMP and complex decommissioning site (see Attachment 7). These summaries describe the status of each site and identify the technical and regulatory issues impacting removal of the site from the SDMP or completion of decommissioning. The staff also developed and maintains Gantt charts for each site, which are updated quarterly, to guide the management of decommissioning activities. The Gantt charts identify all major decommissioning activities and schedules for completion. 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. 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: (a) assuming a more proactive role in interacting with licensees undergoing decommissioning; (b) expanding the acceptance review process, to include a limited technical review, to reduce the need for additional rounds of questions; (c) ensuring that institutional controls and financial assurance requirements are adequate before a technical review of the DP; (d) implementing other procedures to reduce the number of requests for additional information; (e) conducting in-process/side-by-side confirmatory surveys; and (f) relying more heavily on licensees' quality assurance programs, rather than conducting large-scale confirmatory surveys. Furthermore, the staff is incorporating strategies to achieve the performance goals identified as part of the Agency's strategic planning process and Strategic Plan for FY2000 - 2005. Examples of strategies being incorporated include: focusing on

resolving key issues such as institutional control for restricted release; partial site release; conducting stakeholder workshops to seek licensee, industry, and public input; updating, consolidating and risk informing/performance orienting decommissioning guidance; and working with industry to identify and resolve technical and policy issue associated with decommissioning; and developing a stakeholder database and website.

A table summarizing the decommissioning schedule for all SDMP and complex decommissioning sites is provided in Attachment 9. The schedules presented 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) five of 27 SDMP and complex decommissioning sites have not yet submitted DPs (the last DP should be submitted in 2002); (2) NRC has approved 14 of 22 DPs submitted to date [the last DP (Fansteel, Inc.) should be approved by 2009]; and (3) 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 initially developed independently by the staff and presented in SECY-00-0094, without formal licensee input, using the standard assumptions presented in Attachment 10 and the site-specific assumptions stated in the site summaries. During the past year, the staff discussed these schedules with licensees to factor in licensee input. Licensee input has resulted in many modifications to the decommissioning schedules presented in SECY-00-0094.

Attachment 9 contains the site decommissioning schedules for sites located in the Commonwealth of Pennsylvania, even though Pennsylvania is scheduled to become an Agreement State by FY2004. In preparing the FY2002 - FY2004 budget, it was assumed that nine current SDMP sites will have their licenses terminated after successful remediation or be transferred to the Commonwealth of Pennsylvania by the end of FY2003. Transferring sites to Agreement States raises some sensitive issues, as 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, inspection, and 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 removed 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 removed from the spent fuel pool. In this case, NRR retains project management oversight while NMSS is responsible for reviewing the LTP, and preparing the safety evaluation report, the environmental assessment, and the license termination order and 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 Maine Yankee, Saxton, and Connecticut Yankee. A license amendment approving the Trojan LTP was issued in February 2001. The staff has developed a generic schedule for reviewing LTPs (see Attachment 13). Attachment 14 provides a schedule for reactor decommissioning activities.

In February 2001, the responsibility for reactor decommissioning rulemaking and generic activities was transferred from NRR's Division of Licensing and Project Management (DLPM) to the Division of Regulatory Improvement Programs (DRIP). Project management responsibilities for 15 of the 17 power reactors under NRR oversight remained with DLPM. Decommissioning project management of two early demonstration reactors, GE VBWR and Saxton, will remain with the Non-Power Reactor Section in DRIP. The purpose of the February 2001 reorganization was to align rulemaking and generic activities in the organization (DRIP) responsible for those activities within NRR.

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 such 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 staffs plan for proceeding with the integrated rulemaking is before the Commission at this time.

As of February 11, 2001, NRR divided the responsibility for the decommissioning of power reactors between two main groups, Division of Licensing Project Management (DLPM), and Division of Regulatory Improvement Program (DRIP). This division allows the rulemaking for decommissioning to be consolidated with all other NRR rulemaking responsibilities in DRIP and DLPM project managers to continue to process licensing actions.

### 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 has completed, and is developing several guidance documents that will help licensees prepare decommissioning documents, and provide the staff with a uniform approach for reviewing licensee submittals. The staff published NUREG-1727, "NMSS Decommissioning Standard Review Plan," (SRP) in September 2000. The staff conducted several workshops with stakeholders to obtain input on the development of the SRP. A listing of the major decommissioning guidance documents, completed and under development, is presented in Attachment 15.

A Commission meeting was conducted on March 17, 1999, regarding decommissioning of power reactors. At that time, the Commission directed the staff to consider developing a risk-informed approach to decommissioning regulations. The staff committed to perform a detailed technical study on decommissioning plant spent fuel pool accident risk. The spent fuel pool risk study was completed and publicly issued on January 17, 2001. The staff developed a policy options paper for the Commission -- SECY-01-0100, dated June 4, 2001, entitled, "Policy Issues Related to Safeguards, Insurance, and Emergency Preparedness Regulations at Decommissioning Nuclear Power Plants Storing Fuel in Spent Fuel Pools."

The staff prepared a rulemaking plan to standardize the process for allowing the partial site release of a reactor facility or site before approval of the LTP. The plan was sent to the Commission in SECY-00-0023, dated February 2, 2000. The Commission approved the rulemaking plan on April 26, 2000. The Advisory Committee on Nuclear Waste was briefed on the proposed rule in March 2001, and the proposed rule package was sent to the Commission on May 9, 2001. The staff will go forward and issue the proposed rule after receiving the SRM. In addition, as discussed in Attachment 1, the staff is reexamining its approach for control of solid materials.

In SRMs dated July 20, 2000, and September 5, 2000, the Commission directed the staff to develop a Rulemaking Plan to address the entombment option for power reactors. On June 1, 2001, the staff forwarded SECY-01-099, "Rulemaking Plan and Advanced Notice of Proposed Rulemaking: Entombment for Power Reactors," which contained three options for proceeding.

The staff has undertaken an effort to update the 1988 Generic Environmental Impact Statement (EIS) on Decommissioning (NUREG-0586) for power reactors. The current schedule calls for issuance of a draft update, for comment, in fall 2001. The staff has worked closely with EPA, industry, and interested members of the public in defining the scope of the draft EIS.

#### RESOURCES:

The total decommissioning program staff budget, for FY2001 and FY2002, is 82 FTEs and 75 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; development of rules and guidance; and environmental impact statements and assessments. These figures do not include overhead associated with the decommissioning program. Resource breakdown for staff (in FTEs), and contractor support (in thousands of dollars), as reflected in the FY2001 budget to Congress, by Office, follows:

	FY01		FY02		TOTAL	
	Staff	Contractor	Staff	Contractor	Staff	Contractor
NMSS	33	3450	32	4470	65	7920
NRR	18	500	13	300	31	800
RES	11	2117	11	2122	22	4239
OGC	2		2		4	
Regions	18		17		35	
<b>TOTAL</b>	82	6067	75	6892	157	12,959

COORDINATION:

OGC 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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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 of a 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. "Major Decommissioning Guidance Documents"



	FY01	FY02	TOTAL
	Staff Contractor	Staff Contractor	Staff Contractor
NMSS	33 3450	32 4470	65 7920
NRR	18 500	13 300	31 800
RES	11 2117	11 2122	22 4239
OGC	2	2	4
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