

POLICY ISSUE INFORMATION

September 15, 2003

SECY-03-0161

FOR: The Commissioners

FROM: William D. Travers
Executive Director for Operations

SUBJECT: 2003 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, commercial reactors, research and test reactors, uranium mill tailings facilities, and fuel cycle facilities. This report provides a status update on the decommissioning activities presented in last year's report (SECY-02-0169), as well as current key decommissioning program issues.

SUMMARY:

Consistent with Commission direction, this paper provides a combined overview of all 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-02-0169 as a baseline, progress made in each of the program areas, through at least August 1, 2003, is described in this paper.

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BACKGROUND:

In a Staff Requirements Memorandum (SRM) dated June 23, 1999, the Commission directed the staff to provide a single coordinated annual report on all decommissioning activities, instead of annual reports from separate offices. In addition, an SRM dated August 26, 1999, requested 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 response to these SRMs, the staff provided comprehensive overviews of decommissioning activities in annual reports, SECY-00-0094 and SECY-01-0156, dated April 20, 2000, and August 17, 2001, respectively.

In the SRM associated with SECY-01-0156, dated October 16, 2001, and the September 28, 2001, Commission briefing on decommissioning activities and status, the Commission requested that the staff discuss all aspects of decommissioning activities. As a result, SECY-02-0169 included discussions on the decommissioning programs for uranium mill tailings facilities, non-power reactors, and fuel cycle facilities. Further, SECY-02-0169 included a discussion on the status of routine decommissioning activities, and highlighted decommissioning activities that required Commission attention and identified high-priority issues to be addressed in the next year.

DISCUSSION:

1. Summary of Decommissioning Program

The U.S. Nuclear Regulatory Commission (NRC) regulates the decontamination and decommissioning of materials and fuel cycle facilities, power reactors, research and test reactors, and uranium recovery facilities, 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 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 NRC's unrestricted release criteria. The decommissioning program includes termination of licenses that are not routine because the sites involve more complex decommissioning activities. Currently, there are 47 materials facilities, 7 fuel cycle facilities, 20 nuclear power reactors, 15 research and test reactors, and 17 uranium recovery facilities that are undergoing non-routine decommissioning or are in long-term safe storage. Details on these sites are presented in Section 2, below.

NMSS, NRR, and RES share responsibility for decommissioning program activities. NRR has project management responsibility for all stages of research- and test-reactor decommissioning and oversight of the initial stages of power-reactor decommissioning. NMSS regulates the decommissioning of nuclear material facilities, fuel cycle facilities, and uranium recovery facilities, and has oversight of power reactors (once the plant has completed regulatory and safety milestones that ensure that the plant more closely represents a materials facility temporarily storing and processing radioactive waste than a commercial power reactor). RES provides substantial technical support through the development of guidance, and development

of data and models to support dose assessments. An example of a RES product since publication of SECY-02-0169 is NUREG-1640, "Radiological Assessments for Clearance of Materials from Nuclear Facilities," which provides evaluations of doses to the critical group from various scenarios (including transportation and handling for recycle, and disposal) for releasing solid materials from regulatory control. A more complete discussion of RES activities is described in Attachment 1, and a listing of NUREG reports published by RES in the past year is included in Attachment 13.

The staff continues to take steps to ensure integration of decommissioning activities. First, NMSS and RES mutually track and manage decommissioning activities. Second, the Decommissioning Management Board (hereafter, the Board) meets monthly to provide management input on decommissioning activities and issues. The Board, composed of managers from NMSS, RES, NRR, and the Regions, along with the Office of the General Counsel (OGC), serves as an effective mechanism for integrating inter-Office and regional program activities and issue resolution. The Board is a mechanism by which the staff has enhanced intra agency communication. In addition, it ensures that NRC's regulatory processes are integrated.

The decommissioning process is becoming more efficient as the staff continues: (a) assuming a more proactive role in interacting with licensees undergoing decommissioning, including conducting pre-submittal meetings with licensees; (b) using an expanded 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 beginning a technical review of a decommissioning plan (DP); (d) implementing other procedures (e.g., focused site visits 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 Plans for fiscal years (FYs) 2000-2005. Examples of strategies being incorporated include: focusing on resolving key issues, such as institutional control for restricted release and partial site release; participating in stakeholder workshops to seek licensee, industry, and public input; updating, consolidating, and risk-informing/performance-orienting decommissioning guidance; working with industry to identify and resolve technical and policy issues associated with decommissioning; and developing both a stakeholder database and website.

The Strategic Plan for FYs 2000-2005 identified a program evaluation entitled, *Changes to the Decommissioning Process*. This program evaluation will focus on the decommissioning of material and fuel cycle facilities and those power reactors that NMSS had responsibility for during FY 2001 and FY 2002. Evaluations of the program will be made for the 3-year period from FY 2001 through FY 2003. Evaluations of 18 specific changes to the program, will include how the outputs and outcomes from each change contribute to meeting the agency's performance goals and strategies. Based on the results of these evaluations, challenges to the program will be described and corresponding recommendations will be made to address the challenges. The staff plans on completing this program evaluation in fall 2003.

2. Decommissioning Activities

a. Material Facilities

Currently, there are 47 materials facilities undergoing non-routine decommissioning. Of these, 27 are SDMP and complex sites, nine are contaminated formerly licensed sites, and the remaining 11 facilities are either licensed sites undergoing partial site decommissioning, or, are nonroutine, but generally non-complex, decommissioning efforts.

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 list.

The License Termination Rule (LTR) (10 CFR Part 20, Subpart E) authorized 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 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 August 20, 2000. As of August 12, 2003, 27 States had adopted the LTR, or other legally binding requirements, and six States had not.

There are currently 22 SDMP sites and five additional complex sites undergoing decommissioning (see Attachment 3). Twenty-four 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). Sequoyah Fuels Corporation (SFC), will no longer be tracked under the SDMP because decommissioning project management responsibility was transferred from the Division of Waste Management to the Division of Fuel Cycle Safety and Safeguards (FCSS) after the July 25, 2002, Commission conclusion that the front end waste at SFC could be classified as Atomic Energy Act Section 11e.(2) byproduct material. NRC is currently committed to removing one site from the SDMP in FY 2003 and FY 2004.

Although NRC completed its evaluation of formerly licensed sites in September 2001, 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, 42 formerly licensed sites were found to have residual contamination levels exceeding NRC's criteria for unrestricted release. After successful remediation, 19 sites have been closed, and 11 have been closed by transfer to Agreement States or a Federal entity. Twelve sites under NRC jurisdiction remain open pending remediation (see Attachment 6). Three of these formerly licensed sites were added to the SDMP and Complex Sites list because these sites require non-routine decommissioning activities. The remaining sites are not complex enough to warrant placement on the SDMP at this time.

Several Agreement States continue to evaluate license files transferred to them under the Terminated License Review Project. Approximately 70 files remain to be reviewed. NRC established a grant program to provide financial assistance to Agreement States to support reviews of outstanding NRC formerly licensed files. Since the grant program began in January 2001, two sites have been found to have contamination levels exceeding NRC's unrestricted release criteria.

In addition to the SDMP sites, complex sites, and contaminated formerly licensed sites, the decommissioning program regulates a number of other sites undergoing decommissioning. These sites are either licensed sites undergoing partial site decommissioning, or are non-routine but generally non-complex (see Attachment 7).

In calendar year 2003, the Division of Waste Management staff continued to implement its 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 8). These summaries describe the status of each site and identify the current technical and regulatory issues impacting removal of the site from the SDMP, or completion of decommissioning. The staff also 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. Site decommissioning schedules are based on a set of standard assumptions developed by the staff and licensee input. 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.

Schedules can be influenced by the quality and timeliness of licensee submittals and modifications in the licensee's remediation schedule. However, the staff's streamlining efforts should mitigate these schedule impacts somewhat. Summarizing the information presented in Attachment 3: (1) 4 of 27 SDMP and complex decommissioning sites have not yet submitted DPs (the last DP should be submitted in 2004); (2) NRC has approved 12 of 23 DPs submitted to date; and (3) the last site (Fansteel) should be removed from the SDMP by 2023. Fansteel has an extremely protracted schedule because of its bankruptcy and uncertainty regarding future decommissioning plans. Site decommissioning schedules are based on a set of standard assumptions developed by the staff as well as site specific licensee input.

b. Fuel Cycle Facilities

NMSS provides licensing oversight and decommissioning project management to fuel cycle facilities, including conversion plants, enrichment plants, and fuel manufacturing plants. Most of these facilities have been in operation for 20 or more years. As technology improves and operations at these facilities change, there are often unused areas on the site with residual contamination. Pursuant to 10 CFR 70.38 (NRC's "Timeliness Rule"), any licensee with a building or outdoor area, with residual contamination, that has not been in use for two years, must begin decommissioning, submit a DP, or request an extension to the time period for submitting a DP. The NRC staff continues to work closely with the States and EPA to regulate remediation of unused portions of fuel cycle facilities. In 2003, one conversion facility

(Honeywell), and four fuel manufacturers (BWX Technologies, Nuclear Fuel Services, Framatome Richland, and General Atomics), although still operating, continued some decommissioning activities. Details on the status of each of these facilities is presented in Attachment 1.

c. Reactor Decommissioning

In SECY 02-0198, "Changes in Staff Regulatory Oversight of Decommissioning Commercial Nuclear Power reactor Plants," dated November 8, 2002, the staff informed the Commission about the realignment of the staff project management of decommissioning commercial nuclear power plants. The result of the realignment is the transfer of responsibility for project management of most decommissioning power reactors from NRR to NMSS earlier in the decommissioning process. The delineations of responsibilities are presented in NMSS Policy and Procedures Letter 1-77, Rev.0, "Reactor Decommissioning Program Procedures for Interfacing with NRR," and NRR Office Instruction No. COM-101, "NRR Interfaces with NMSS," dated October 4, 2002, and November 19, 2002, respectively. These documents establish procedures defining the interactions, licensing program management responsibilities, and support functions for the decommissioning of commercial nuclear reactors, spent fuel storage at decommissioning power-reactor facilities, radiological transportation issues, and partial site-release requests. The transfer of project management responsibilities for decommissioning power reactors was completed in January 2003 with the transfer of 13 reactors to NMSS.

NMSS currently has regulatory project management responsibility for 15 decommissioning power reactors. NRR retained project management responsibility for two decommissioning reactors (Indian Point - Unit 1, Millstone - Unit 1) because extensive stakeholder interest in these sites (for both the operating and decommissioning units) makes it more efficient for NRR to retain, as a single point of contact, project management responsibilities for the permanently shutdown units. In addition, project management for three decommissioning early demonstration reactors—Vallecitos, Nuclear Ship Savannah, and Saxton remains with NRR. Plant status summaries for all decommissioning reactors are provided in Attachment 9. During the past year NMSS completed the review and approval of License Termination Plans (LTPs) for Maine Yankee, Saxton, and Connecticut Yankee. The staff currently is reviewing the LTP for Big Rock Point, which was submitted in April 2003. Attachment 10 provides a schedule for reactor decommissioning activities.

Currently, 11 research and test reactors have decommissioning orders or amendments. Additionally, four research and test reactors are in "possession-only" status, either waiting for shutdown of another research or test reactor at the site, or for removal of the fuel from the site by the U.S. Department of Energy (DOE). Further, 4 of the 11 test and research reactors with decommissioning orders or amendments, and 1 of the 4 test and research reactors in possession-only status still have fuel in storage at the reactor. NRR is responsible for project management and inspection of these facilities. Plant status summaries for research and test reactors under NRR project management are provided in Attachment 11.

d. Uranium Recovery Facilities

The NRC authority over Atomic Energy Act Section 11e.(2) byproduct material at licensed uranium (or thorium) mill sites was established in Title II of the Uranium Mill Tailings Radiation

Control Act (UMTRCA) of 1978. NRC and the Agreement States that are authorized for 11e.(2) byproduct material (Colorado, Illinois, Texas, and Washington) oversee decommissioning at licensed sites. Under Title I of that Act, DOE was authorized to remediate the 24 designated abandoned uranium mill sites, with State and NRC concurrence on remedial plans, activities, and completion reports. NRC also was authorized to concur in the long-term surveillance plan for each site and place it under general license to DOE, when remediation was complete.

NMSS provides project management and technical review for decommissioning and reclamation of facilities that are regulated under 10 CFR Part 40, Appendix A. These licensees include conventional uranium mills and other facilities that process ore primarily for its source material content, such as uranium in situ leach, heap leach, and ion-exchange facilities. Currently, there are 17 NRC-licensed (UMTRCA Title II) sites in decommissioning. Attachment 12 provides the status of these sites. At four of the Title I sites, NRC has concurred with DOE ground-water restoration plans (two active and two natural flushing), and five other site plans are under review. NRC has also concurred that no ground-water remediation is required at nine sites. The surface decommissioning at all Title I sites is complete.

3. Guidance and Rulemaking Activities

In response to the NMSS performance goals in the Strategic Plan, NMSS implemented a project to consolidate and update the policies and guidance of its decommissioning program. The final product will be completed in FY 2003, and consists of a three-volume NUREG series that addresses the following topics: (1) decommissioning process; (2) characterization, survey, and determination of radiological criteria; and (3) financial assurance, recordkeeping, and timeliness. Volume 1, "Decommissioning Process for Materials Licensees," was published as a final report in September 2002.

The staff has undertaken an effort to update the 1988 "Generic Environmental Impact Statement (EIS) on Decommissioning" (NUREG-0586) for power reactors. The staff worked closely with EPA, industry, and interested members of the public in defining the scope of the draft EIS. In October 2001, the staff published Draft Supplement 1 for comment. The staff issued the Final Supplement in November 2002.

In previous years, the staff considered broad-scope regulatory improvements for decommissioning nuclear power plants in the areas of security, emergency planning, and insurance. However, because of continuing staff efforts by the staff to reassess vulnerabilities and redefine the threats in the area of safeguards and security, the priority for decommissioning regulatory improvements for decommissioning reactors has been reduced. Given the absence of any anticipated nuclear power plant decommissionings shortly, and the uncertainties related to safeguards and security regulation, resources are being deferred for nuclear power plant decommissioning rulemakings that are not currently in progress or related to security matters and will not be included in the FY 2004 or FY 2005 budgets. If any plants do unexpectedly shut down permanently, decommissioning regulatory issues would continue to be addressed through the amendment and exemption process in a manner similar to the current practice.

In September 2001, the staff published a proposed rule adding a new section 10 CFR 50.83, to standardize the process for allowing a licensee to release part of its reactor facility or site for

unrestricted use (partial site release) before receiving NRC approval of its LTP. The staff issued the final rule in April 2003.

In an SRM dated June 6, 2001, the Commission directed the staff to develop a rulemaking to amend the financial assurance requirements for materials licensees in 10 CFR Parts 30, 40, and 70. The staff had notified the Commission of its intent to amend the financial assurance requirements in SECY-01-0084, "Rulemaking Plan: Financial Assurance Amendments for Materials Licensees." The proposed rule was published in the *Federal Register* on October 7, 2002, and the comment period closed on December 23, 2002. SECY-03-0090, requesting authorization to publish the final rule for financial assurance amendments, was sent to the Commission on June 3, 2003.

A listing of the major decommissioning documents developed during the past year is presented in Attachment 13.

4. Issues Requiring Commission Attention

In addition to the items discussed in Section 3, several other issues will continue to require future Commission attention. Decommissioning funding is one such issue. The Commission previously asked the staff to analyze decommissioning funding issues in Agreement States and non-Agreement States. In accordance with SRM-SECY-99-0193, staff currently is administering a grant program to facilitate cleanup of formerly terminated NRC sites in Agreement States. Similarly, following the Commission's direction in SRM-SECY-00-0180, staff worked toward a Memorandum of Understanding with DOE for long-term stewardship of potential restricted release sites (SECY-02-0008), and staff conducted a financial analysis of decommissioning sites in non-Agreement States (SECY-02-0079), and reported its findings in May 2002. The Commission approved (SRM-SECY-02-0079) the staff's recommendation to proceed with the aggressive regulatory posture and requested the staff to prepare a summary report on the outcomes and any recommendations that occurred as a result of the implementation process. Progress has been made through a more aggressive interaction with the sites. The staff currently is summarizing progress made and evaluating current conditions in determining if any changes to our approach are needed and will provide a report to the Commission in the fall of 2003.

Issues associated with the staff's response to the June 18, 2002, SRM on SECY-01-0194 will require Commission attention during the coming year. The SRM instructed the staff to consider creative options that would make restricted release (under the LTR) more available to a site, using AAR Manufacturing Group Inc. (AAR) as a pilot for consideration of alternative approaches. The SRM advised the staff to interact with AAR to determine if there are options AAR would like the NRC staff to consider, that the staff believes are viable, and that can be accomplished in a time frame acceptable to both AAR and NRC. If an alternative option is proposed for AAR, the option should be consistent with the LTR, but could be different from existing guidance documents supporting the rule. AAR currently is pursuing the restricted release option for a portion of its site, and plans to enter into a settlement agreement with NRC on the restrictions and controls needed for restricted-release. The agreement would include using a deed restriction that would outline the restrictions on the site, such as prohibiting farming and developing residential properties on the site; the deed restriction would transfer to each subsequent owner of the property through the deed. The agreement and restrictive

covenant legally would allow NRC or local and State governments to monitor and enforce the restrictions. Once AAR submits its restricted release DPs, the staff will complete its review and inform the Commission of its results and any policy issues that result from AAR's proposal.

In FY 2004, the staff intends to initiate several efforts to improve the decommissioning program. To increase the public awareness of and access to the status of sites undergoing decommissioning, the staff will enhance the information on the NRC Decommissioning Webpage by posting decommissioning site summaries and site-specific communications plans. In future reports to the Commission on the Decommissioning program, the staff will rely on the Webpage site summaries in lieu of providing the site summaries in the annual report to the Commission. Further, the staff will list SECY papers provided throughout the year instead of summarizing the issues in the annual report. This will improve staff communication with the Commission by focusing the paper on major program activities and accomplishments, by providing less duplicative information to the Commission, and by providing a more streamlined product to the Commission. The staff is also evaluating the continued need to maintain an SDMP program within the context of a comprehensive decommissioning program, and plans to provide the Commission with a recommendation with respect to continuing the current process associated with the SDMP decommissioning program.

RESOURCES:

The total decommissioning program staff budget, for FY 2003 and FY 2004, is 68 full-time equivalents (FTEs) and 57 FTEs, respectively. These resource figures include: licensing casework directly related to SDMP and other complex decommissioning sites; inspections; project management and technical support for decommissioning power reactors, uranium mill tailings facilities and fuel cycle facilities; development of rules and guidance; and EIS' and environmental assessments. These figures do not include supervisory, non-supervisory indirect, and other indirect resources associated with the decommissioning program. Resource breakdown for staff (in FTEs), and for contractor support (in thousands of dollars), as reflected in the FY 2003 budget to Congress, by Office, follows:

	Staff (FTE)	FY03 Contractor (\$ K)	Staff (FTE)	FY04 Contractor (\$ K)
NMSS	39	2399	32	2251
NRR	4	253	1	19
RES	13	3314	12	4149
OGC	3	0	3	0
Regions	9	264	9	223
TOTAL	68	6230	57	6642¹

¹Note that in the FY05 budget, RES program resources are presented separate from the regulation of the decommissioning program.

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 by Carl J. Paperiello Acting for/

William D. Travers
Executive Director
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. "Other Sites Undergoing Decommissioning"
8. "Site Status Summaries for SDMP and Complex Decommissioning Sites"
9. "Status Summaries for Reactors Undergoing Decommissioning"
10. "Schedule for Reactor Decommissioning Activities"
11. "Research and Test Reactors Decommissioning Status"
12. "Title II Site Decommissioning Status"
13. "Major Decommissioning Documents"

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*See Previous Concurrence

OFC	DCB		DCB		DCB		Tech Ed		RES		NRR		OGC		OSP	
NAME	J Buckley*		C Craig*		D Gillen*		E Kraus*		C Trottier*		H Berkow *		S Treby* NLO		J Piccone*	
DATE	8/11/03		8/13/03		8/27/03		8/25/03		8/26/03		8/20/03		8/26/03		8/25/03	
OFC	OCFO		IMNS		FCSS		DWM		NMSS		DEDMRS		EDO			
NAME	R Hesselink*		C Miller*		R Pierson*		J Greeves*		M Virgilio*		C Paperiello		W Travers			
DATE	8/27/03		8/26/03		8/21/03		9/02/03		9/5/03		9/15/03		9/15/03		/ /03	