

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	6642 ¹
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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"

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

DECOMMISSIONING PROGRAM ACTIVITIES

DECOMMISSIONING PROGRAM ACTIVITIES

1.0 BACKGROUND

In a staff requirements memorandum (SRM) dated October 16, 2001, the Commission directed the staff to expand the "Annual Update on the Status of the Decommissioning Program" to include discussions on all aspects of decommissioning activities. As a result, this update now includes summaries of decommissioning activities for: (1) material facilities; (2) fuel cycle facilities; (3) power reactors, and research and test reactors; and (4) uranium recovery facilities. A summary of some of the more significant activities associated with each program area is provided below. Since development of guidance and regulations is an activity common to all program areas, it will be discussed in terms of the overall program.

2.0 DEVELOPMENT OF GUIDANCE AND REGULATIONS

On March 23, 2000, the staff provided the Commission with a paper (SECY-00-070) that provided recommendations on issues concerning the control of solid materials at licensed facilities. In an SRM dated August 18, 2000, the Commission decided to defer a final decision on whether to proceed with rulemaking and directed the staff to proceed with a National Academy of Sciences (NAS) study on possible alternatives for control of solid materials, and to continue the development of a technical information base to support a Commission policy decision in this area. In March 2002, the U. S. Nuclear Regulatory Commission (NRC) received a report, from the NAS, that reviewed the technical bases, policies, and precedents for controlling the release of solid materials. The staff has reviewed the report recommendations and has factored them into its recommendations to the Commission. In July 2002, the staff provided the Commission with recommendations (SECY-02-0133) on options for proceeding with rulemaking concerning the control of solid materials at licensed facilities. Based on its review of a National Academies report on possible alternatives and of SECY-02-0133, the Commission, on October 25, 2002, directed the staff to proceed with an enhanced participatory rulemaking to develop specific requirements for control of solid materials. On January 8, 2003, the staff provided the Commission with a rulemaking plan and proposed schedule for a rulemaking effort, and on January 27, 2003, the Commission approved the plan and schedule for the rulemaking. In February 2003, the staff published a *Federal Register* notice soliciting public comments on the potential rulemaking and the scope of the environmental impact statement (EIS) to support the rulemaking effort. NRC held a workshop on May 21-22, 2003, to solicit new input, with a focus on the feasibility of alternatives identified in the *Federal Register*. Over 2600 comments were received by the end of the public comment period, on June 30, 2003, which will be characterized in a scoping report that is planned for publication in Fall 2003. The staff plans to submit a draft rulemaking package to the Commission in July 2004, and publish it for public comment in September 2004.

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 license termination plan (LTP). The Commission approved the plan on April 26, 2000. The proposed rule was submitted to the Commission for approval on May 9, 2001, and published for comment in the *Federal Register* on September 4, 2001. The staff issued the final rule in April 2003.

In an SRM dated June 6, 2001, the Commission also 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 changes proposed are in four areas: (1) large sealed source

licensees--large irradiators--would no longer be able to use the \$75,000 certification amount as a basis for financial assurance, based on site-specific decommissioning cost estimates, and would have to base their financial assurance on a site-specific decommissioning cost estimate; (2) all waste broker licensees would have to provide financial assurance and would not be permitted to use the certification amounts; (3) the certification amounts for all licensees would be increased by 50 percent; and (4) licensees using a decommissioning cost estimate would have to update it at least every 3 years. 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.

In support of the Office of Nuclear Material Safety and Safeguards (NMSS) performance goals in the Strategic Plan, NMSS continued its efforts to consolidate, risk-inform, and performance-base the policies and guidance for its decommissioning program. The project involves reviewing, updating, and consolidating existing NMSS decommissioning guidance documents, decommissioning technical assistance requests, decommissioning licensing conditions, and all decommissioning generic communications issued over the past several years. The project is being conducted using Business Process Re-engineering (BPR) techniques. The BPR approach is being implemented to develop the product and manage the review and concurrence process, using self-managed teams consisting of NRC staff from Headquarters and regional offices, and representatives from Agreement States. The goal is to produce consolidated NMSS decommissioning guidance that allows the NRC staff to evaluate information submitted by licensees in a timely, efficient, and consistent manner that protects public health and safety. The end result will be a three-volume NUREG series (NUREG-1757, Consolidated NMSS Decommissioning Guidance") of reports grouped into decommissioning functional categories. Further ease of use will be realized by making the reports available on the internet. The project team published drafts for public comment of Volume 1, "Decommissioning Process for Materials Licensees," in January 2002; Volume 2, "Characterization, Survey and Determination of Radiological Criteria," in September 2002; and Volume 3, "Financial Assurance, Recordkeeping, and Timeliness," in January 2003. The final version of Volume 1 was published in September 2002. The overall project is on schedule to be completed by the end of fiscal year (FY) 2003. The updated, consolidated guidance will be provided to all users, both NRC and licensees, in hard-copy and/or electronic media. Since each group will have access to the same guidance, the expected results are more complete license documents that will expedite the approval process for both applicants and reviewers. As a result, it is expected that this project will serve to improve the overall decommissioning process. A complete listing of guidance developed during the past year is presented in Attachment 13.

RES provides data and models to NMSS to support assessments of public exposure to environmental releases of radioactive material from site decommissioning. Since SECY-02-0169 was published, RES has provided the Division of Waste Management with: (1) a report, to NRC on the condition assessment of concrete structures, which identified important characteristics and relevant parameters that must be measured, modeled, and monitored, to assure performance of an entombed structure as designed; (2) an advanced methodology for using geobaysian approaches to design 2-dimensional (D) and 3-D sampling programs, to more accurately and more efficiently assess volumetric contamination; (3) a report on techniques for determining the appropriate level of abstraction to be used in modeling specific aspects of a natural system; (4) a final report describing a systematic approach for building conceptual models of natural systems and accounting for the uncertainty associated with

alternative system descriptions; (5) an assessment of the status of documentation and support for parameter values and assumptions used in pathway models of frequently used dose codes; (6) the final report for a field demonstration project assessing conventional and surface complexation approaches to simulating sorption processes at a chemically complex site; (7) final values for solubilities of key radionuclides in soils from actual decommissioning sites; (8) a report on pore volume estimation techniques for use in financial assurance determinations for in-situ leach mine; (9) a report on using advanced monitoring and modeling techniques to evaluate uncertainties in ground-water recharge estimates; and (10) final 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 reuse, recycle and disposal) for releasing solid materials from regulatory control.

Two of the research efforts mentioned above deserve to be singled out. First, the work to finalize NUREG-1640 and to develop geobaysian approaches for more efficient assessment of volumetric contamination, are only a part of the overall support being provided for the clearance rulemaking. Other products which are being used directly in the rulemaking effort include the development of collective doses, assessment of doses from multiple sources, and the analysis of clearance of contaminated soils. These efforts constitute about one third of the current resources budgeted for research in this program. Second, the work on parameter and conceptual model uncertainty pursued through contracts, and in cooperation with other federal agencies (through the Working Group on Uncertainty of the MOU on Multimedia Environmental Modeling) is establishing a sound basis for handling these very complex issues in the course of environmental reviews at decommissioning and other sites.¹

During the past year RES also continued: (1) support for the Multi-Agency Radiation Survey and Site Investigation Manual and Multi-Agency Radiation Laboratory Analytical Protocols, efforts to establish a common approach to radiological measurements and surveys; (2) participation in activities of the Interagency Steering Committee on Radiation Standards (ISCORS), including the subcommittees on Clearance and Sewage Sludge; and (3) participation in working groups of the Interagency Steering Committee on Multimedia Environmental Models. Major activities in 2003-2004 will include: (1) completion of the technical basis work to support rulemaking on the control of solid materials; (2) continuation of work to assess the basis for parameter values and assumptions in dose models; (3) completion of a Beta-test version of FRAMES environmental modeling platform linked to the Corps of Engineers' ground-water modeling system; and (4) cooperation with the U.S. Department of Energy (DOE) on development of RESRAD-OFFSITE and RESRAD-BIOTA.

3.0 MATERIAL FACILITIES DECOMMISSIONING

Material facilities decommissioning activities include: (1) regulatory oversight of Site Decommissioning Management Plan (SDMP) sites and other complex decommissioning sites; (2) completing license termination file reviews; (3) undertaking financial assurance reviews; (4)

¹ University of Arizona (completed this year with the publication of a final strategy for assessing conceptual model uncertainty and selecting appropriate models), the Agricultural Research Service (developing a systematic process to choose the appropriate level of abstraction for a system model), and Pacific Northwest National Laboratory (combining approaches to handle both parameter and conceptual model uncertainty)

providing West Valley oversight; (5) examining issues and funding options to facilitate remediation of sites in non-Agreement States; (6) interacting with the U.S. Environmental Protection Agency (EPA) and ISCORS; (7) inspecting SDMP and other complex decommissioning sites; (8) maintaining the Computerized Risk Assessment and Data Analysis Lab (CRADAL); (9) evaluating Agreement State implementation of the license termination rule (LTR); (10) public outreach; (11) participating in International decommissioning activities; and (12) conducting a program evaluation.

! Activities associated with the SDMP and complex site decommissioning program include: (1) review and approval of decommissioning plans (DPs); (2) conduct of pre-DP development meetings with licensees; (3) review of licensee final status survey reports and conduct of confirmatory surveys; (4) conduct of in-process inspections; and (5) preparation of environmental assessments (EAs) and safety evaluation reports (SERs). Since publication of SECY-02-0169, the staff has prepared the EA and SER for Kaiser Aluminum and approved its DP.

! Staff routinely reviews financial assurance submittals for materials and fuel facilities, and maintains a financial instrument security program. Approximately 50 financial assurance submittals were reviewed in FY 2003.

March 2003 marked the first time that NMSS staff received status reports of the trust funds used by decommissioning reactor licensees as financial assurance. NMSS staff will coordinate its assessment of the decommissioning reactor trust fund reports with the Office of Nuclear Reactor Regulation's (NRR's) assessment of operating reactor trust fund reports.

! Until 1980, NRC licensed the reprocessing operation at the West Valley site under License CSF-1. In 1981, NRC put the license in abeyance to allow DOE to carry out the West Valley Demonstration Project (WVDP). The West Valley site property is owned by the New York State Energy Research and Department Authority.

NRC has a number of regulatory responsibilities for decommissioning the West Valley site, delineated by statute, regulation, policy statement, and agreements with DOE and other agencies. These responsibilities include: (1) prescribing requirements for decommissioning; (2) providing review and consultation to DOE on the project; (3) reviewing and providing guidance for the decommissioning EIS; (4) reviewing safety analysis reports; and (5) monitoring the activities under the project for the purpose of assuring the public health and safety.

The Commission's final policy statement on decommissioning criteria for the WVDP was issued on February 1, 2002. The policy statement prescribed the LTR as the decommissioning criteria for the WVDP, reflecting the fact that the applicable goal for the entire NRC-licensed site is compliance with the requirements of the LTR. The staff is implementing the policy statement and has developed and issued an implementation plan to guide staff activities.

In June 2001, the General Accounting Office (GAO) issued a report (GAO-01-314) that included several recommendations. Specifically, GAO recommended that NRC and EPA, in coordination with New York State, agree on how their different cleanup criteria

should apply to the site. NRC has worked with involved Federal and State regulators in the development of a Regulators Communication Plan, to enhance communication and coordination on the decommissioning of the West Valley site. The plan, which is publicly available, identifies the roles and responsibilities of involved regulatory agencies, and applicable cleanup requirements and expectations.

! As noted in the 2000 Annual Update (SECY-02-0169), the Commission directed the staff, in a June 2002 SRM for SECY-01-0194, to conduct an analysis of LTR issues, emphasizing resolution of the institutional control issues--and with the goal of making the LTR provision for restricted release and alternate criteria more available for licensee use. This Commission direction was in response to both the continuing uncertainty about potential transfer of sites to DOE for long-term control under the Nuclear Waste Policy Act, Section 151(b), and the potential need for restricting site use at the AAR Manufacturing Group Inc. (AAR) site. The SRM also identified other important LTR implementation issues impacting the decommissioning of sites.

On October 1, 2002, the staff provided the Commission with an initial analysis that described the scope of each issue and the staff's plans for evaluation (SECY-02-0177). The results of the staff's analysis of LTR issues were provided on May 2, 2003, in SECY-03-0069. Particular emphasis was given to recommendations to resolve the restricted release and alternate-criteria issue, and an update to DOE's changes to its long-term stewardship policy and management. The staff also evaluated other LTR implementation issues dealing with the relationship of the LTR release limits to other release limits, realistic exposure scenarios, measures to prevent future legacy sites, and a new issue on intentional mixing. The staff recommended a variety of actions for Commission consideration, to address these issues, including: 1) a rulemaking, for measures to prevent future legacy sites; 2) revised guidance to support the rulemaking and to clarify restricted release, on-site burials, and realistic exposure scenarios; 3) revised inspection procedures and enforcement guidance to enhance monitoring, reporting, and remediation, to prevent future legacy sites; and 4) a Regulatory Issue Summary to inform a wide range of stakeholders about the LTR analysis of each issue, Commission direction, and actions planned to resolve each issue. For the new issue on intentional mixing, only planned evaluations were given. The results of these evaluations will be provided to the Commission in September 2003.

In summary, the outcomes of the staff's recommendations affect both existing and future decommissioning sites. For existing decommissioning sites, particularly the complex sites with long-lived radionuclides, many recommendations should facilitate decommissioning by addressing key challenges that these sites must address. Consistent use of more realistic exposure scenarios could result in more economical decommissioning, while maintaining safety. Furthermore, this recommendation could also result in fewer sites that might need to use the restricted release or alternate criteria. However, for those few sites that might still need to use the restricted-release or alternate criteria provisions of the LTR, viable options for restricting use are recommended. For future decommissioning sites, specific measures are recommended for financial assurance, licensee operations and reporting, and on-site disposal, that should reduce or mitigate the potential for future "legacy" sites that may not have the financial ability to complete decommissioning. Together, these measures

contribute to the Commission's preference for license termination, with unrestricted release, which results in the greatest opportunity to return the site to productive use.

- ! The Commission also tentatively approved SRM-SECY-00-0180, the staff's recommendation to request authorization and appropriations for State-directed remediation at formerly licensed sites in non-Agreement States where there is insufficient funding available. The Commission requested that the staff better define the number of sites, potential costs for remediation, and willingness of the States to direct remediation with appropriated funds. Similarly, the Commission also requested the staff to provide further information about currently licensed sites undergoing decommissioning that might have insufficient funds to decommission the facility. Staff analyzed the non-Agreement State sites that were formerly licensed or are currently licensed and in the process of decommissioning, with regard to: (1) the potential remediation costs; (2) the amount of financial assurance; (3) the financial capability of the responsible party to fund cleanup from assets outside of financial assurance; and (4) the possibility of another agency directing remediation if NRC decides to pursue Congressional funding. In May 2002, the staff reported its findings in SECY-02-0079. 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 resulting from the implementation process. Progress has been made through a more aggressive interaction with the sites. The staff is currently summarizing progress made and evaluating current conditions in determining if any changes to our approach are needed. The staff will report its findings to the Commission in the fall of 2003.
- ! The staff continues to work with other Federal agencies, including EPA and DOE, through ISCORS, to address issues related to the radiation protection. ISCORS is nearing completion of its assessment of the origin, nature, and risk associated with radionuclides in sewage sludge from publicly owned treatment works. The study has found that naturally occurring radionuclides are the primary contributor to radiation exposures. ISCORS is developing a web site that will be a catalog of parameters (such as inhalation and ingestion rates) used in dose modeling by different agencies and codes, to foster harmonization and consistency in the selection of parameters. ISCORS is also a forum for Federal agencies to discuss the wide range of radiation protection issues in decommissioning, including standards for cleanup (EPA's "Federal Guidance for the General Public"); use of institutional controls; cleanup criteria for radioactive dispersal device events; disposition of solid materials; and international initiatives related to protection of biota from ionizing radiation.
- ! CRADAL provides the staff with a high-performance computing capability that includes a platform to conduct intensive numerical calculations and parallel computing in support of licensing activities.
- ! All Agreement States were expected to adopt dose criteria equivalent to, or more restrictive than, the LTR, by August 20, 2000. Of the 33 Agreement State Programs, 27 State Programs have adopted dose criteria equivalent to, or more restrictive than, the LTR, and six have yet to adopt dose criteria.

! Decommissioning staff interacts with the public in several ways. In March 2001, the staff completed development of a Communication Plan for Regulation of Decommissioning. The goals of NRC's decommissioning communications activities are to increase public confidence in NRC's commitment and ability to carry out licensing and regulatory responsibilities for the decommissioning of nuclear facilities, and increase the efficiency, effectiveness, and realism of analyses supporting license termination decisions. The Plan provides guidance for developing individual Communication Plans for specific activities associated with the regulation of radiological decommissioning. These include, but are not limited to, the decommissioning of commercial nuclear power reactors, fuel cycle and materials licensees, and sites on the SDMP. Since publication of SECY-02-0169, the staff has prepared and begun implementation of site-specific communication plans for the 13 reactors transferred from NRR to NMSS. The staff continues to implement communication plans for all SDMP and complex sites. Site-specific communication plans are useful tools to help ensure that the appropriate stakeholders are identified and contacted and focuses the staff on messages NRC wants to convey. One of the activities identified in the Communication Plans for each site is participation in public meetings to inform the public about major licensing actions. During the past year the staff participated in public meetings regarding the WVDP site, the B & W Parks Shallow Land Disposal Area, the Cabot Performance Materials Inc. Site, the Combustion Engineering Hematite Site, and the Combustion Engineering Windsor Site. The staff also held a public meeting in Charlevoix, Michigan, to discuss the Big Rock Point License Termination Plan.

In 2003, the staff completed an effort with the Nuclear Energy Institute (NEI) to develop a shared view of acceptable generic approaches for dealing with several license termination issues while ensuring that the requirements of the LTR were met. This shared view provided opportunities for standardized approaches of developing, reviewing, approving, and implementing LTPs. In an effort to clarify existing guidance associated with the LTR (10 CFR Part 20, Subpart E), NRC and NEI adopted an approach whereby the NEI License Termination Task Force generated questions and answers (Q&As), and submitted them to NRC for review. The submittal was placed on NRC's web site for the public. NRC reviewed the Q&As, and provided comments to NEI. NRC's response to NEI was also placed on the web site. NEI could address disapproved Q&As and resubmit them, or withdraw them. Approved Q&As would be incorporated into the consolidated draft decommissioning guidance. The draft guidance, including Q&As, is released for public comment, and posted on NRC's web site. The NRC writing and review teams developing the consolidated guidance (discussed above) addressed the public comments on the Q&As. Final Q&As are included in the final consolidated guidance, released to the public, and posted on NRC's web site.

! Decommissioning staff has also taken significant steps in enhancing public participation in the decommissioning process. Under an interagency agreement with NRC, the U.S. Institute for Environmental Conflict Resolution (USIECR) has completed a project for NRC on effective public involvement in facility decommissioning. NRC hosted a workshop in September 2002, to discuss the results of the project – best practices for public involvement in general, with specific application to restricted-use decommissioning of NRC-licensed facilities (per 10 CFR 20.1403). The workshop was designed for, and attended by, licensees, as well as by NRC and Agreement State regulators.

NRC has concluded that the development of “best practices” for meeting the performance objectives of its public involvement regulations is useful. USIECR has prepared a guidance document for NRC entitled, “Best Practices for Effective Public Involvement in Restricted-Use Decommissioning of NRC-Licensed Facilities.” The guidance is based, in part, on information obtained from stakeholders, at NRC licensed sites, that have experience with public involvement concerning radioactive contamination and long-term management of contaminated sites.

The staff also participated in a number of industry conferences and workshops. Examples of conferences and workshops attended by the staff during the past year include Waste Management ‘03, American Nuclear Society conferences, and Health Physics Society meetings.

- ! Decommissioning staff take part in a variety of international decommissioning activities such as: (1) technical assistance to the international community; (2) participation in international regulatory organizations; (3) hosting foreign assignees; (4) bilateral technical exchanges; and (5) participation in international symposia.

- ! The Strategic Plan for FY 2000-2005 identified a program evaluation entitled *Changes to the Decommissioning Process*. This program evaluation focuses 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 will be made of the program over the 3-year period from FY 2001 through FY 2003. The effectiveness of the overall program and the effectiveness of specific changes to the program will be evaluated, using a variety of tools. For overall program effectiveness, the staff will use: 1) documented agency operating plan performance data; 2) an analysis of the LTR implementation issues; 3) a business process improvement assessment of the licensing process; 4) the Office of Management and Budget’s Program Assessment Rating Tool; and 5) independent reviews by the Commission, the Advisory Committee on Nuclear Waste, and stakeholders. Evaluations of 18 specific changes to the program will include how the outputs and outcomes from each change contributed to meeting the agencies’ performance goals and strategies. Information will be obtained from agency documents and staff interviews. Finally, based on the results of these evaluations, challenges to the program will be identified and corresponding recommendations will be made to address the challenges. The staff plans on completing this program evaluation in fall 2003.

4.0 FUEL CYCLE FACILITIES DECOMMISSIONING

The Division of Fuel Cycle Safety and Safeguards (FCSS) regulates facilities that mill and enrich uranium and fabricate it into fuel for use in nuclear reactors, and facilities that fabricate nuclear fuel that is a combination of uranium and plutonium oxides. Several types of fuel cycle facilities are licensed for the mining and milling of uranium through its enrichment and fabrication into nuclear fuel used for nuclear power plants. These include: uranium fuel fabrication facilities, uranium hexafluoride production (conversion) facility, gaseous diffusion enrichment facilities, and uranium milling facilities. Regulation of fuel cycle facilities is accomplished through a combination of regulatory requirements; licensing; safety oversight, including inspection, assessment of performance, and enforcement; operational experience evaluation; and

regulatory support activities. The following is a status of current decommissioning activities at fuel cycle facilities:

Conversion Facilities:

Honeywell - This facility is located in Metropolis, IL, and is the only operational conversion facility in the United States. There are two CaF₂ settling ponds on this site. In calendar year (CY) 2001, NRC determined that the material in the ponds could be treated as exempt material, as defined in 10 CFR 40.13(a), and should be disposed of accordingly. In CY 2003, the licensee will continue to remediate these ponds and dispose of material at an appropriate disposal facility.

Fuel Manufacturers:

BWX Technologies - This facility is located in Lynchburg, VA. This facility has decommissioned several landfills that were used for disposal of facility waste. The landfills were supposed to be nonradioactive, but contained small amounts of contamination. In CY 2001, remediation of two of the three remaining landfills were completed in accordance with an NRC-approved DP. The DP for the remaining landfill is under review and is anticipated to be approved in CY 2003.

Nuclear Fuel Services - This facility is located in Erwin, TN. There are currently four decommissioning projects on the site: Pu Building; 200 Complex; North-site burial ground; and Southwest burial trenches'. The Southwest burial trenches remediation was completed in CY 2001, but the licensee has not yet demonstrated that the decommissioning criteria were met. This issue will need to be addressed at the time of license termination. Under the existing license, the licensee will continue to decommission the Pu and the 200 complex buildings in CY 2003. The North-site decommissioning activities are continuing under the approved DP.

Framatome Richland - This facility, located in Richland, WA, has five lagoons, which were used as part of the waste-water treatment process. The State of Washington has ordered the licensee to drain the lagoons and begin decommissioning by 2004. During the past year, the licensee met with the NRC staff to discuss scheduling and cleanup criteria, and began to decommission the lagoons. Decommissioning will continue in CY 2003.

General Atomics - This facility is located in San Diego, CA. It was licensed to fabricate low-enriched light-water reactor fuel. The site is undergoing site-wide decommissioning, under an NRC and State-of-California-approved site-wide DP.

Enrichment Facilities

There are currently two enrichment (gaseous diffusion) facilities in the United States, located in Portsmouth, OH, and Paducah, KY. NRC has certified these facilities, and according to the lease agreement between the United States Enrichment Corporation and DOE, at the end of plant life, DOE will resume ownership of the facilities and is responsible for future decommissioning activities on these sites.

5.0 REACTOR DECOMMISSIONING

Reactor decommissioning activities include: (1) NMSS project management and technical review responsibility for licensee submittals in support of decommissioning; (2) NRR project management and licensing oversight for two decommissioning reactor facilities; (3) conduct of core inspections; (4) project management for 15 licensed research and test reactors; and (5) supporting development of rulemaking and guidance.

! The transfer of project management responsibilities for decommissioning power reactors was completed in January 2003. 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 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 early demonstration reactors in decommissioning—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 review and approval of the LTPs for Maine Yankee, Saxton, and Connecticut Yankee. The staff is currently reviewing the LTP for Big Rock Point, that was submitted in April 2003. Attachment 10 provides a schedule for reactor decommissioning activities.

! NRR retained project management and inspection responsibilities for research and test reactors. 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 DOE. Further, four of the 11 test and research reactors with decommissioning orders or amendments, and one of the four test and research reactors in possession-only status still have fuel in storage at the reactor. Plant status summaries for research and test reactors under NRR project management are provided in Attachment 11.

6.0 URANIUM RECOVERY FACILITIES DECOMMISSIONING

Uranium recovery decommissioning activities in FCSS include: (1) regulatory oversight of decommissioning uranium recovery (milling) sites; (2) review of site characterization plans and data; (3) review and approval of DPs; (4) preparation of EAs; (5) conduct decommissioning inspections, including confirmatory surveys; (6) decommissioning cost estimate reviews (including annual surety updates); and (7) oversight of license termination. The staff also reviews the DOE ground-water corrective-action plans and Long-Term Surveillance Plans for the Title I remediated mill sites and assists the Office of State and Tribal Programs with review of Agreement-State uranium recovery site completion reports and inspections.

- Staff activities associated with decommissioning involves evaluation of plans and accomplishments for soil, structures, and ground water. Reclamation evaluations include stabilization of the tailings pile (engineered cover design, construction, and function, and surface water diversion) at mills, and restoration of the land surface (re-contouring and seeding).

- Staff worked with DOE and Wyoming concerning the issue of State mineral rights on land to be transferred to DOE at Title II sites that have completed decommissioning.
- The staff has improved decommissioning guidance by revising two standard review plans (SRPs) that address: evaluation of reclamation and DPs and associated cost estimates; disposal of non-11e.(2) byproduct material; applications for alternate concentration limits; and requests for license termination. These final SRPs have been published as NUREG-1620, (mills) and NUREG-1569 (in-situ leach facilities).
- The annual public meeting with staff and the National Mining Association was held in Denver, Colorado, on June 10 and 11, 2003. Presentations included topics on NRC's inspection program, land-transfer issues, SRPs, and surety issues.
- DPs for Shootaring and Quivira-Ambrosia Lake (mills previously on stand-by status) were received, and are under review. EAs are being written for these licensing actions.
- Meetings in November 2002 with EPA and New Mexico included discussion of ground-water background values (to support future alternate-concentration limits application) and de-listing the Homestake mill site, a Superfund site.
- The license for the Green Mountain Ion-exchange facility was terminated on March 30, 2003. License termination activities continue for three sites (Petrotomics Shirley Basin, Bear Creek, and L-Bar).
- One mill site (Pathfinder Lucky Mc) was authorized to use alternate concentration limits for ground-water, and thus allowed to stop corrective actions. The licensee demonstrated by modeling that the proposed criteria would still keep constituent values within the range of background at the point of exposure for 1000 years. By ending the pumping and evaporation of ground water, the site will be able to complete decommissioning.
- In response to an SRM, the staff wrote a Commission Memorandum concerning the proposal to accept institutional controls at the Split Rock mill site to address ground water contamination and thus allow cessation of corrective action so that the license can be terminated.
- Staff assisted with a Commission Paper concerning the decommissioning of Sequoyah Fuels Corporation (SFC) in July 2002. After the Commission decision, the site license was transferred to FCSS for decommissioning of the 11e.(2) byproduct material.
- Issues related to ground-water corrective action continue at Homestake, Split Rock, Petrotomics Shirley Basin, Quivira, Lisbon, and Churchrock.

**CRITERIA FOR PLACING A SITE ON THE
SITE DECOMMISSIONING MANAGEMENT PLAN LIST**

CRITERIA FOR PLACING A SITE ON THE SDMP

For a site to be placed on the original Site Decommissioning Management Plan (SDMP) it had to meet one of the following five criteria:

1. Problems with a viable responsible organization (e.g., inability to pay for, or unwillingness to perform, decommissioning);
2. Presence of large amounts of soil contamination or unused settling ponds or burial grounds that may be difficult to dispose of;
3. Long-term presence of contaminated, unused facility buildings;
4. License previously terminated; or
5. Contamination or potential contamination of the groundwater from onsite wastes.

In accordance with SECY-98-155, the following criteria is used to add new sites to the SDMP list:

1. Restricted-use sites; or
2. Complex unrestricted-use sites (sites requiring detailed site-specific dose modeling, sites subject to heightened public, State, or Congressional interest; or sites with questionable financial viability).

**CURRENT SITE DECOMMISSIONING MANAGEMENT PLAN (SDMP)
AND COMPLEX DECOMMISSIONING SITES**

**CURRENT SDMP AND COMPLEX DECOMMISSIONING SITES
(by State)**

	Name	Location	Date Put On SDMP	Date DP Submitted	Date DP Approved	Cleanup Criteria	Projected Removal	Attach. 7 Summary
1	**C. E. Windsor	Windsor, CT	NA	12/03*	9/04*	LTR-UNRES	TBD	Page 7
2	Jefferson Proving Ground (Dept. Of Army)	Madison, IN	2/95	8/99 revised 6/02	11/04*	LTR-RES	1/06	Page 13
3	Watertown GSA	Watertown, MA	3/90	10/92	9/93	LTR-UNRES	9/03	Page 30
4	AAR Manufacturing, Inc.	Livonia, MI	8/94	4/96 revised 9/03*	5/98 11/04*	LTR-RES	1/05	Page 1
5	Dow Chemical Co.	Bay City, MI	3/92	10/95 revised 1/02	7/97 12/03*	LTR-UNRES	12/04	Page 8
6	Michigan Department of Natural Resources	Kawkawlin MI	3/90	3/03	9/04* +	LTR-UNRES	4/09	Page 20
7	SCA Services	Kawkawlin, MI	3/92	9/03*	3/07* +	LTR-RES	7/11	Page 25
8	**C.E. Hematite	Hematite, MO	NA	4/04*	4/05*	LTR-UNRES	TBD	Page 6
9	**Mallinckrodt Chemical Inc.	St. Louis, MO	NA	(Phase1) 11/97 (Phase2) 5/03	5/02 8/04* +	LTR-UNRES	7/08	Page 19

	Name	Location	Date Put On SDMP	Date DP Submitted	Date DP Approved	Cleanup Criteria	Projected Attach. 7 Removal Summary	
10	Heritage Minerals	Lakehurst, NJ	5/92	11/97	8/99	Action- UNRES	4/04*	Page 11
11	Shieldalloy Metallurgical Corp.	Newfield, NJ	3/90	9/02	10/06* +	LTR-RES	9/10	Page 28
12	Fansteel, Inc.	Muskogee, OK	3/90	8/99 Revised 5/03	11/03*	LTR-UNRES	2023	Page 9
13	Kaiser Aluminum	Tulsa, OK	8/94	(Phase 1) 8/98 (Phase 2) 5/01	2/00 6/03	Action- UNRES LTR-UNRES	5/07	Page 14
14	Kerr-McGee	Cimarron, OK	3/90	4/95	8/99	Action- UNRES	5/07	Page 15
15	Kerr-McGee	Cushing, OK	3/90	4/94	8/99	Action- UNRES	12/05	Page 17
16	Sequoyah Fuels Corp.	Gore, OK	6/93	3/99	NA	NA	NA	Page 26
17	Babcock & Wilcox	Vandergrift, PA	10/93	1/96	10/98	Action- UNRES	10/04	Page 3
18	Babcock & Wilcox (Shallow Land Disposal Area)	Vandergrift, PA	10/95	6/01	5/05* +	LTR-UNRES	10/09	Page 4

Name	Location	Date Put On SDMP	Date DP Submitted	Date DP Approved	Cleanup Criteria	Projected Attach. 7 Removal Summary		
19	Cabot Corp.	Reading, PA	3/90	8/98	10/03*	LTR-UNRES	9/04	Page 5
20	**Kiski Valley Water Pollution Control Auth.	Vandergrift, PA	NA	12/03*	12/04*	LTR-UNRES	6/12	Page 18
21	Molycorp, Inc.	Wash., PA	9/93	6/99	8/00	Action-UNRES	10/05	Page 21
22	Molycorp, Inc.	York, PA	3/90	8/95	6/00	Action-UNRES	6/04	Page 22
23	Permagrain Products	Media, PA	3/90	4/98	7/98	Action-UNRES	10/04	Page 23
24	Safety Light Corp.	Bloomsburg, PA	3/90	12/00	12/01	LTR-UNRES	12/04	Page 24
25	Westinghouse Electric	Waltz Mill, PA	3/90	4/97	1/00	LTR-UNRES	5/04	Page 31
26	Whittaker Corp.	Greenville, PA	3/90	12/00 Revised 12/02	12/03*	LTR-UNRES	9/07	Page 32
27	**Union Carbide	Lawrenceberg, TN (Buildings) (Soil)	NA	8/98	7/00 12/00	Action-UNRES LTR-UNRES	12/05	Page 29

* - Estimated Date ** - Complex Decommissioning Site (Non-SDMP)

+ - Timeline for approving DP is protracted due to (1) satisfying NEPA requirements, (2) conduct of public hearing, (3) Multi-phase DP submittals, or (4) combination of all the above

Action - SDMP Action Plan Criteria

LTR - License Termination Rule Criteria

Name	Location	Date Put On SDMP	Date DP Submitted	Date DP Approved	Cleanup Criteria	Projected Attach. 7 Removal Summary
RES - Restricted Use						
UNRES - Unrestricted Use						

NOTES:

- NFS is a complex decommissioning site not listed above because; (1) it is an operating licensee undergoing partial decommissioning, (2) project managed by the Division of Fuel Cycle Safety and Safeguards.
- The cleanup criteria identified in this table presents the staff's most recent information, but does not necessarily represent the current or likely outcome.
- The staff is currently working with AAR to develop options that would make restricted release (under the LTR) more available.

**SITES REMOVED FROM THE SITE DECOMMISSIONING MANAGEMENT
PLAN (SDMP) AFTER SUCCESSFUL REMEDIATION**

**SITES REMOVED FROM THE SDMP AFTER SUCCESSFUL REMEDIATION
(by State)**

	Name	Location	Date On SDMP	Date of Lic. Term.	Date Off SDMP	Current Use
1	Pratt & Whitney	Middletown, CT	6/92	6/71	10/95	Property and warehouses remain under Pratt & Whitney control
2	Texas Instruments, Inc.	Attleboro, MA	3/90	3/97	3/97	Managed under active MA license
3	Watertown Mall	Watertown, MA	3/90	1970	9/00	Commercial retail and recreational use
4	Anne Arundel County / Curtis Bay	Anne Arundel County, MD	1/93	NA	7/97	Site is currently used for baseball fields and a prison
5	Frome Investments	Detroit, MI	8/94	NA	7/96	Currently operating as a warehouse
6	Minnesota Mining & Manufacturing (3M)	Pine County, MN	3/90	10/67	8/00	Site is currently forest land.
7	Lake City Army Ammunition Plant	Independence, MO	3/90	NA	10/01	U.S. Army facility

	Name	Location	Date On SDMP	Date of Lic. Term.	Date Off SDMP	Current Use
8	Allied Signal Aerospace	Teterboro, NJ	3/90	1975	2/92	Aerospace operation still active under new owner (Honeywell), property under owner control.
9	RTI Inc.	Rockaway, NJ	5/92	2/97	1/97	Property attached to facility owned and operated by Sterigenics, Intl, NRC License No. 29-30308-01.
10	Chevron Corp.	Pawling, NY	4/92	1975	6/94	Recreation area controlled by the Department of Interior
11	Alcoa	Cleveland, OH	3/90	2/61	4/96	ALCOA's Cleveland works remains a large, multiple-function aluminum refining, casting and refinishing facility
12	Chemetron Corp. (Bert Ave)	Cleveland, OH	3/90	7/99	7/99	This ravine-like, former uncontrolled landfill is now an engineered disposal cell with a thick soil cover, topped by a level, grassy field with unrestricted use

	Name	Location	Date On SDMP	Date of Lic. Term.	Date Off SDMP	Current Use
13	Chemetron Corp. (Harvard Ave)	Cleveland, OH	3/90	7/99	7/99	This site is now owned by McGean-Rohco, Inc. There is a closed engineered disposal cell at the west end of the property(where the main processing building stood) and the buildings remaining on the site are being used for industrial chemical production and processing.
14	Clevite Corp.	Cleveland, OH	8/94	NA	9/98	Building used for multiple small businesses and light manufacturing
15	Elkem Metals Inc.	Marietta, OH	1/95	1985	9/99	This site is a manufacturer of manganese products for the steel industry, with several onsite storage facilities.
16	Old Vic	Cleveland, OH	3/92	7/93	12/93	This site is now the location of an ongoing warehousing operation.
17	Babcox & Wilcox	Apollo, PA	9/93	4/97	1/97	Fenced field
18	Budd Co.	Philadelphia, PA	3/90	4/93	4/93	Property secure; under owner control
19	Cabot Corp.	Boyerton, PA	3/90	Active	9/98	Active license
20	Cabot Corp.	Revere, PA	3/90	9/01	9/01	Property secure; under owner control

	Name	Location	Date On SDMP	Date of Lic. Term.	Date Off SDMP	Current Use
21	Pesses Co. (METCOA)	Pulaski, PA	3/90	7/86	9/99	Abandoned buildings and property controlled inside security fence
22	Schott Glass Technologies	Durea, PA	3/90	4/92	9/98	Security fence maintained around owner controlled area
23	UNC Recovery Systems	Wood River Junction, RI	3/90	9/95	10/95	Property remains under UNC ownership, CERLCA issues being addressed
24	Amax Inc.	Washington, WV	3/90	6/94	6/94	Department of Energy site

**SITES REMOVED FROM THE SITE DECOMMISSIONING
MANAGEMENT PLAN (SDMP) BY TRANSFER TO AGREEMENT
STATES OR U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)**

**SITES REMOVED FROM THE SDMP BY TRANSFER TO AGREEMENT STATES OR EPA
(by State)**

	Name & Location	Date On SDMP	Date Transferred	Cleanup Criteria	Status
1	Kerr-McGee (West Chicago) Chicago, IL	3/90	11/90	Surface- 20 pCi/g U _{total} Subsurface-50 pCi/g U _{total}	Active decommissioning, estimated completion date-2004. No unforeseen factors delaying decommissioning.
2	Englehard Corp. Plainville, MA	1/92	3/97	Buildings - SDMP Soils - To be determined	Analyzing chemical contamination, not actively decommissioning. No unforeseen factors delaying decommissioning.
3	Nuclear Metals, Inc. Concord, MA	6/93	3/97	SDMP - but licensee wants to revise criteria	Current Licensee, active decommissioning. No unforeseen factors delaying decommissioning. No license termination planned.
4	Wyman Gordon N. Grafton, MA	4/91	3/97	To Be Determined	Groundwater monitoring, no plans to decommission. No unforeseen factors delaying decommissioning. No estimated site closure date.
5	West Lake Landfill (to EPA) Bridgeton, MO	6/92	6/95	Site will utilize cap or cover rather than soil cleanup criteria. If soil remediation is required - 40 CFR 192.	EPA waiting for revised remediation plan. No estimated date for completion.

	Name & Location	Date On SDMP	Date Transferred	Cleanup Criteria	Status
6	Advanced Medical Systems, Inc. Cleveland, OH	3/90	8/99	LTR	No decommissioning to date. No unforeseen factors delaying decommissioning. No estimated license termination date.
7	BP Chemicals America Lima, OH	4/92	8/99	SDMP	Active decommissioning. Estimated license termination date is 2003. No unforeseen factors delaying decommissioning.
8	Horizons, Inc. Cleveland, OH	8/94	8/99	SDMP	Non-licensee. Clean-up complete.
9	Northeast Ohio Reg. Sewer Dist. Cleveland, OH	4/92	8/99	SDMP	On hold - no activity. No estimated clean-up completion date. No unforeseen factors delaying decommissioning.
10	RMI Titanium Co. Ashtabula, OH	8/91	8/99	SDMP	Active decommissioning. No unforeseen factors delaying decommissioning. Estimated termination date - 2005+
11	Shieldalloy Metallurgical Corp. Cambridge, OH	3/90	8/99	LTR	Active decommissioning. Estimated termination date - 2003+ if terminated at all.

LTR - License Termination Rule Criteria

SDMP - SDMP Action Plan Criteria

CONTAMINATED FORMERLY LICENSED SITES UNDERGOING DECOMMISSIONING

CONTAMINATED FORMERLY LICENSED SITES UNDERGOING DECOMMISSIONING

	Name	Location	Date of Lic. Term.	Status
1	AAR Manufacturing, Inc.	Livonia, MI	1970	On SDMP. In process of decommissioning
2	Department of the Army	Frankford Arsenal, Philadelphia, PA	1981	Remediation Complete
3	Englehard Minerals	Great Lakes, IL	1983	In process of decommissioning
4	Englehard Minerals	Ravenna, OH	1975	In process of decommissioning
5	Homer Laughlin	Newell, WV	1972	Under Regional review
6	Kaiser Aluminum	Tulsa, OK	1971	On SDMP. In process of decommissioning
7	Salmon River	Salmon, ID	1959	Under NRC Headquarters review
8	Superior Steel (Superbolt)	Pittsburgh, PA	1958	In process of decommissioning
9	Union Carbide	Lawrenceburg, TN	1974	On Complex Site list. In process of decommissioning
10	United Nuclear	New Haven, CT	1974	In process of decommissioning
11	U.S. Army Chemical Corp.	Fort McClellan, AL	1965	In process of decommissioning
12	Westinghouse Electric	Blairsville, PA	1961	In process of decommissioning

OTHER SITES UNDERGOING DECOMMISSIONING

OTHER SITES UNDERGOING DECOMMISSIONING

	Name	Location	Status
1	Augustana College	SD	In process of decommissioning
2	Battelle Columbus laboratory	Coumbus, OH	In process of decommissioning
3	Curtis-Wright Cheswick	Cheswick, PA	In process of decommissioning
4	Eglin Air Force Base	FL	In process of decommissioning
5	Envirotest Laboratories	WY	In process of decommissioning
6	Kerr McGee Tech. Center	OK	In process of decommissioning
7	Kirtland Air Force Base	NM	In process of decommissioning
8	NWI Breckenridge	Breckenridge, MI	In process of decommissioning
9	Stepan Chemical Company	Maywood, NJ	In process of decommissioning
10	UniTech Services Group Inc.	Royersford, PA	In process of decommissioning
11	University of Wyoming	WY	In process of decommissioning

SITE STATUS SUMMARIES

AAR MANUFACTURING INC.

1.0 SITE IDENTIFICATION

Location: Livonia, MI
License No.: STB-0362 (terminated)
Docket No.: 04000235
License Status: Terminated
Project Manager: Kristina Banovac

2.0 SITE STATUS SUMMARY

Thorium contaminated surface and subsurface soil has been identified at several locations in open land areas on the site. Ground water contamination is not present.

AAR submitted the final remediation plan (RP) on October 14, 1997, and the U.S. Nuclear Regulatory Commission (NRC) approved the revised RP on May 22, 1998. Remediation at the site began on October 12, 1998. AAR conducted geoprobe sampling onsite, to more precisely locate areas of contamination. As a result of the geoprobe sampling, additional soil contamination was identified in the open area on the western side of the property.

On September 17, 1999, AAR submitted a proposed revision to the approved RP. The proposed plan involved remediation of only soils containing thorium concentrations exceeding 116 pCi/g, which is the unimportant quantity (0.05 weight percent) of source material, exempt from regulation, established in 10 CFR 40.13(a).

After staff consultation with the Commission on this policy, NRC informed AAR that the revised remediation approach was not acceptable, by letter dated August 9, 2002. AAR is currently pursuing the restricted release option for a portion of its site.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

AAR is not a licensee. This site was owned and operated by Brooks & Perkins, Inc. from 1959 until the license was terminated in 1971. AAR purchased Brooks & Perkins in 1981. Since AAR is not directly responsible for the contamination onsite, it believes it should not be responsible for the cost of site remediation. If remediation costs become large, it is possible that AAR may legally challenge its responsibility to fund the remediation activities.

By SRM dated June 18, 2002, the Commission directed the staff to consider creative options that would make restricted release more available to a site, using AAR as a pilot for consideration of alternative approaches. 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 is currently pursuing the restricted release option for a portion of its site and plans to enter into a settlement agreement with the 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 decommissioning plans, the staff will complete its review and inform the Commission of its results and any policy issues that result from AAR's proposal.

Elevated levels of thorium have also been identified along the fence separating AAR and CSX Transportation, Inc. (CSX). Although contamination appears to be very limited, there is the potential that financial responsibility for the contamination on CSX property may become an issue. No remediation has been performed by CSX.

To date, public interest in remediation activities at the site is minimal.

4.0 ASSUMPTIONS

- An environmental impact statement (EIS) will not be required.
- AAR will pursue restricted release.
- Standard assumptions.

5.0 ESTIMATED DATE FOR CLOSURE 1/05

B&W PARKS OPERATING FACILITY

1.0 SITE IDENTIFICATION

Location: Parks Township, Armstrong County, PA
License No.: SNM-414
Docket No.: 07000364
License Status: Active
Project Manager: Amir Kouhestani

2.0 SITE STATUS SUMMARY

Principal radioactive contaminants at the site are americium (Am)-241, plutonium (Pu), uranium, cobalt (Co)-60, and cesium (Cs)-137. The potential for groundwater contamination at the site is currently being evaluated under a monitoring sampling study.

B&W Parks Operating Facility (BWXT) submitted the decommissioning plan for the below-grade structures and soil in January 1996. BWXT is requesting unrestricted release of the site. The NRC approved the decommissioning plan in October 1998. BWXT earlier completed decommissioning of the above-grade structures at the site under its license, and in November 2001, completed its decommissioning of the soils and sub-grade structures and utilities under its decommissioning plan.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

None

Public interest in the in the site may increase at the time of license termination. No financial assurance issues have been identified at this time.

4.0 ASSUMPTIONS

- Standard assumptions.
- Confirmatory surveys for individual building footprints will be done by Region I as remediation is completed.
- The site-wide confirmatory survey will be performed by the Oak Ridge Institute for Science and Education (ORISE).

5.0 ESTIMATED DATE OF CLOSURE 10/04

B&W PARKS SHALLOW LAND DISPOSAL AREA

1.0 SITE IDENTIFICATION

Location: Parks Township, Armstrong County, PA
License No.: SNM-2001
Docket No.: 07003085
License Status: Active
Project Manager: Amir Kouhestani

2.0 SITE STATUS SUMMARY

Principal radioactive contaminants at the site are natural, enriched, and depleted uranium, and lesser quantities of Am-241, plutonium, and thorium. The U.S. Army Corps of Engineers (USACE) plans to study the potential for ground water contamination at the site.

This site is designated by USACE as a Formerly Utilized Sites Remedial Action Program (FUSRAP) site. In December 2001, Congress directed USACE to remediate the site. In March 2002, USACE issued a final site Preliminary Assessment (PA) in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA). The PA concludes that USACE will remediate the site in accordance with CERCLA and FUSRAP requirements, and consistent with the USACE-NRC Memorandum of Understanding (MOU). In December 2001, staff conditioned the B&W Parks Shallow Land Disposal Area (BWXT-SLDA) license to allow for an eventual suspension of the license when USACE completes its Record of Decision for the site under CERCLA, and requests jointly with the licensee, license suspension consistent with the MOU. In June 2003, USACE initiated its on-site investigative activities.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

In the event that USACE's congressionally mandated site remediation does not take place, NRC staff anticipates that BWXT may request license termination, with restrictions on future land use. The Pennsylvania Department of Environmental Protection (PADEP) has stated that it will not assume responsibility for the site (i.e., become the institutional control authority) if it is decommissioned with land-use restrictions.

There is significant public and Congressional interest in the site. Congressman Murtha is closely following USACE's site remediation efforts.

No financial assurance issues have been identified at this time.

4.0 ASSUMPTIONS

- Standard assumptions.
- The current site decommissioning schedule is largely dependent on availability of federal funding for this FUSRAP site.
- BWXT will request license termination with restrictions on future land use, should they be required to cleanup the site.

5.0 ESTIMATED DATE OF CLOSURE 10/09

CABOT PERFORMANCE MATERIALS INC. (CABOT)

1.0 SITE IDENTIFICATION

Location: Reading, PA
License No.: SMC-1562
Docket No.: 04009027
License Status: Active (possession only)
Project Manager: Ted Smith

2.0 SITE STATUS SUMMARY

Contamination at the site consists of surface and subsurface uranium and thorium contamination, in the form of slag. Ground water contamination has not been identified at the site.

The March 2000, decommissioning plan (DP), as supplemented in November 2002, proposes unrestricted release of the site in its current condition. NRC staff issued a Request for Additional Information (RAI) in March 2003, for additional information regarding site characterization, source term modeling, and previously unconsidered aspects of meeting the "as low as is reasonably achievable" (ALARA) requirements of the LTR at the site. A licensee response is anticipated in fall 2003.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

While conducting research and analysis on slags, the NRC staff identified potential issues regarding both the quantity and concentration of radioactive slag at the site. These and similar questions have been raised by PADEP as significant concerns about the adequacy of the characterization of the site. The licensee is currently considering the use of gamma logging and emplacement of a riprap cover as an engineered barrier to address these questions.

No major financial assurance issues are associated with this site. A potential financial assurance concern would arise if off-site disposal were required.

Public interest in the decommissioning activities at the site has been increasing since late 2002.

4.0 ASSUMPTIONS

- Cabot's proposal for unrestricted release without remediation is valid.
- Cabot's site characterization is acceptable.
- Standard assumptions.

5.0 ESTIMATED DATE FOR CLOSURE 9/04

COMBUSTION ENGINEERING (C.E.) HEMATITE

1.0 SITE IDENTIFICATION

Location: Festus Township, Jefferson County, MO
License No.: SNM-33
Docket No.: 07000036
License Status: Active
Project Manager: G. Mike McCann, R III

2.0 SITE STATUS SUMMARY

Contamination at the site consists of uranium and thorium in the soil and groundwater.

Westinghouse plans to follow the site studies and future remedial activities in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the goals of the National Contingency Plan. Westinghouse has identified several areas of Concern (14 areas) on site and has proposed a work plan for the site Remedial Investigation/Feasibility Study in accordance with CERCLA.

On June 7, 2000, Westinghouse submitted notification of its intent to cease principal licensed activities. In a letter dated October 30, 2000, Westinghouse proposed an alternate schedule for submission of a final DP. By letter dated May 30, 2001, NRC approved an April 2004, DP submittal date. Westinghouse has performed, within its permitted license activities, certain equipment decontamination and dismantlement and has shipped equipments to its facility in South Carolina.

There is local, state, and Congressional interest in how the site is decommissioned.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

No financial assurance issues have been identified at this time. The staff has not identified any major offsite environmental issues that will not be addressed during decommissioning of the facility.

4.0 ASSUMPTIONS

- Standard assumptions.

5.0 ESTIMATED DATE FOR CLOSURE TBD

COMBUSTION ENGINEERING (C.E.) WINDSOR

1.0 SITE IDENTIFICATION

Location: Windsor, CT
License No.: 06-00217-06
Docket No.: 030-03754
License Status: Timely Renewal
Project Manager: James Kottan, R I

2.0 SITE STATUS SUMMARY

Radioactive contamination at the site consists of soils and building and equipment surfaces contaminated with uranium and by-product material from operations that occurred from the late 1950s until 2001.

A revised site-wide DP was received by NRC on April 7, 2003. Estimated time for remediation of areas associated with NRC licensed activities is approximately one year after approval of the DP. The acceptance review of the DP will be delayed until the licensee submits a revised dose modeling scenario including revised DCGLs. The revised DCGLs are expected to be submitted sometime by December 2003.

Under the current license, the licensee is removing interior systems, components, ducts, piping, conduit, etc. from the buildings in Building Complexes 2, 5, and 17. Equipment and material is being cleared from the site using Reg Guide 1.86 criteria as permitted by the current license. The present license also permits the licensee to deconstruct the buildings of Building Complexes 2, 5, and 17 down to grade level only.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

Although the State of Connecticut had filed a hearing request, which was later withdrawn, public interest in the area is not high.

There are no major technical or regulatory issues.

4.0 ASSUMPTIONS

Standard assumptions.

5.0 ESTIMATED DATE FOR CLOSURE TBD

DOW CHEMICAL COMPANY (DOW)

1. SITE IDENTIFICATION

Location: Bay City, MI
License No.: STB-527
Docket No.: 04000017
License Status: Active
Project Manager: Sam Nalluswami

2.0 SITE STATUS SUMMARY

Contamination at the site consists of thorium contaminated slag storage piles. Ground water contamination at the site has been identified.

Dow submitted a DP on October 12, 1995. Dow is requesting unrestricted release of the site. The DP was approved in July 1997. In September 2000, Dow informed the NRC that decommissioning of the Bay City site had been complicated by a larger volume of contamination than originally estimated, the presence of wetlands, and winter flooding. In January 2002, Dow submitted a revised supplement to amend the previously approved DP. The staff issued an RAI on December 26, 2002. The staff and licensee are working to resolve the RAI issues.

There are no immediate radiological hazards at the site.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

The staff has not identified any major off-site environmental issues that will not be addressed during decommissioning of the facility.

Dow will submit a decommissioning funding plan with a detailed cost estimate upon acceptance of a decommissioning approach, but before approval of the DP.

There has been minimal public interest in the decommissioning activities at this facility.

4.0 ASSUMPTIONS

- Standard assumptions.

5.0 ESTIMATED DATE FOR CLOSURE 12/04

FANSTEEL INC.

1.0 SITE IDENTIFICATION

Location: Muskogee, OK
License No.: SMB-911
Docket No.: 040-07580
License Status: Expired (possession only)
Project Manager: Jim Shepherd

2.0 SITE STATUS SUMMARY

Contaminants at the site include natural uranium and decay products, and natural thorium and decay products. Chemical contamination in the form of metals including tantalum, niobium, chromium, antimony, tin, barium, arsenic; ammonia fluoride and methyl isobutyl ketone are also present. Soil and Groundwater contamination are non-uniformly distributed.

Fansteel decontaminated approximately 35 acres of the 110-acre Muskogee facility designated as the "Northwest Property," and the NRC released this area for unrestricted use. Fansteel has an NRC license dated March 25, 1997, to complete the processing of ore residues, calcium fluoride residues, and wastewater treatment residues containing uranium and thorium, in various site impoundments. In November, 2001, Fansteel notified NRC that it had suspended operation of the facility. The current license expired in September, 2002; the renewal application was denied because Fansteel wrote off the cost of the facility in its bankruptcy and did not provide sufficient financial assurance.

On January 15, 2002, Fansteel and its U.S. subsidiaries filed for voluntary bankruptcy (Chapter 11) in the U.S. Bankruptcy Court for the District of Delaware; one subsidiary in Mexico and one in Barbados were not included in this action.

On July 24, 2003, Fansteel submitted a request for license amendment to approve the DP submitted on January 14, 2003, as amended by letter dated May 8, 2003, containing a phased decommissioning approach. Fansteel is requesting unrestricted release of the site. The staff is currently reviewing the DP.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

Fansteel has provided a total of about \$4.5 million in financial assurance. The previous Fansteel estimate for decommissioning, by deposition to the Bankruptcy Court, is \$57 million for off-site disposal of all wastes greater than 10 pCi/g total, a license condition limit. The revised estimate of \$26 million is based on dose criteria of 10 CFR 20.1402 using an industrial land use scenario with no ground water pathway. It estimates an additional \$14 million for commitments to Oklahoma Department of Environmental Quality (ODEQ), primarily ground water remediation. Because it is in a bankruptcy proceeding, Fansteel states it is not able to provide the additional assurance.

There is high public interest about the decommissioning of this site from two primary parties: the State of Oklahoma and the Cherokee Nation.

4.0 ASSUMPTIONS

- The proposed phased decommissioning and use of license conditions in lieu of licensee submittals will satisfactorily resolve all issues.
- Standard assumptions.

5.0 ESTIMATED DATE FOR CLOSURE 2023+

HERITAGE MINERALS INC. (HMI)

1.0 SITE IDENTIFICATION

Location: Lakehurst, New Jersey
License No.: SMB-1541
Docket No.: 040-08980
License status: Renewed - 9/20/99 (possession/decommissioning only)
Project Manager: Craig Gordon, R I

2.0 SITE STATUS SUMMARY

Contamination at the site consists of monazite sand from process operations involving rare mineral extraction.

Heritage Minerals Inc. (HMI) submitted its DP/Final Status Survey Plan (FSSP) in November 1997. NRC approved the DP/FSSP in October 1999. The HMI DP/FSSP provided the basis for disposal of thorium contaminated sand and remediation of mill buildings and equipment. HMI requested unrestricted release for the site after license termination.

HMI did not meet the 24 month requirement to complete site decommissioning, and as a result, a predecisional enforcement conference was held on January 8, 2003, to discuss a potential violation. The decision to take enforcement action is being held in 60-day abeyance pending HMI's response to those issues related to remediating the site to decommissioning plan commitments. A sampling program was performed in November 2002, to quantify licensable and residual material remaining onsite.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

ORISE surveys showed that removal of contaminated material around the pile area and in the two process (mill) buildings was not sufficient to meet NRC unrestricted use guidelines. HMI initially disagreed with the ORISE methodology for counting residual contamination on surfaces and equipment in the mills, but submitted a revised protocol for measuring surface contamination which meets NRC guidelines. A dose assessment based on licensee and ORISE survey data was prepared by the NRC staff to determine derived concentration guideline limit (DCGL) values for residual material. The DCGLs were comparable to approved DP commitments and SDMP Action Plan guidelines.

HMI does not believe they should be responsible for contaminated areas from previous operations which are below the level for exempt source material quantities. Additional soil excavation was performed in April 2003, and a final survey report for the outdoor areas was submitted to NRC in June 2003.

The entire site covers a large area in Lakehurst, New Jersey, while the licensed material was limited to a very small outdoor area and mill buildings. NRC-licensed portions of the site are within an area of enhanced background, raising regulatory issues with New Jersey over continued radiological exposure if NRC terminates the license. The State believes that NRC jurisdiction should extend to other areas which contain exempt quantities of uranium and thorium, but do not exceed unrestricted use criteria. The primary State issue is that once NRC

terminates the license, the large contaminated areas of the site not covered by the license could involve costly remediation, some of which may be the State's responsibility.

4.0 ASSUMPTIONS

- Enforcement action will not impede the licensee's progress to plan and schedule completion of remediation activities.
- Standard assumptions.

5.0 ESTIMATED DATE FOR CLOSURE 4/04

JEFFERSON PROVING GROUND

1.0 SITE IDENTIFICATION

Location: Madison, Indiana
License No.: SUB-1435
Docket No.: 04008838
License Status: Active (possession only)
Project Manager: Tom McLaughlin

2.0 SITE STATUS SUMMARY

Contamination on site consists of depleted uranium (DU) in the soil. However, there is a concern for future groundwater contamination. The site has been closed for the testing of all ordnance including depleted uranium rounds since 1995. The monitoring of DU in soil, groundwater, surface water, and sediment continues on a bi-annual basis. The U.S. Army submitted a revised DP in June 2002. NRC approved the DP on October 1, 2002.

The staff is proposing to remove the JPG site from the Site Decommissioning Management Plan (SDMP) through the establishment of a possession-only license that could be indefinite. Decommissioning will be deferred until the Army can safely collect data needed to validate their off-site transport models. The possession-only license will be issued for a 5-year renewable period, and the status of unexploded ordnance remediation technology will be evaluated at the license renewal to determine if it is appropriate to begin site decommissioning. The Army plans to submit a license amendment request in September 2003.

There are no immediate radiological hazards at the site. Unexploded ordnance at the site represents a significant non-radiological hazard. The staff has not identified any major off-site environmental issues that will not be addressed during decommissioning of the facility.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

The presence of unexploded ordnance, the associated risk, and cost for cleanup of this material, as well as potential contamination of groundwater, are complicating remediation.

The licensee has signed a memorandum of agreement with the Department of the Interior and the Department of Defense (Air Force) for long-term institutional control of the site.

In January 2000, Save the Valley, a local environmental group, requested a hearing on the DP, citing that the DP does not adequately describe the decommissioning process and does not provide adequate assurance for long-term control.

No financial assurance issues have been identified at this time.

4.0 ASSUMPTIONS

- Standard assumptions.

5.0 ESTIMATED DATE FOR CLOSURE Indefinite possession-only license

KERR McGEE - CIMARRON

1.0 SITE IDENTIFICATION

Location: Crescent, OK
License No.: SNM-928
Docket No.: 07000925
License Status: Active (possession only)
Project Manager: Ken Kalman

2.0 SITE STATUS SUMMARY

Contamination at the site consists of uranium contamination in groundwater at Burial Area 1, and Technetium-99 (Tc-99) in the groundwater in the vicinity of Waste Pond 1 and 2. Concentrations of Technetium-99 that are within applicable release criteria have also been found in Burial Area 1.

The licensee submitted a DP in April 1995, and a DP groundwater evaluation report in July 1998. In coordination with the ODEQ, the NRC approved Cimarron's DP in August 1999. The staff added a license condition to note that it would not terminate Cimarron's license until Cimarron demonstrates that the total uranium concentrations in all wells have been below the groundwater release criteria for eight consecutive quarterly samples (2 years). Cimarron is scheduled to submit its remediation work plan in September 2003.

In April 1996, the NRC amended Cimarron's license to release, for unrestricted use, the Phase I subareas of the site - areas that had no history of licensed activities, and concentrations of uranium in the soil below NRC's guidelines. Cimarron is also submitting FSSRs for the unrestricted release of other discrete subareas of the site. NRC staff released Subarea K in May 2002, and will not release Subarea G until there is satisfactory resolution of issues pertaining to the occurrence of Tc-99 in Subarea G.

The site is also licensed for on-site disposal of up to 500,000 cubic feet of Option 2 (of the 1981 Branch Technical Position) contaminated soil. NRC staff reviewed Cimarron's Subarea N Report (submitted in January 2002) and performed its independent confirmatory survey in June 2002. Due to a recent occurrence of groundwater exceeding the 180 pCi/l release limit in a nearby portion of Subarea K, NRC is delaying release of Subarea N until the groundwater issue is resolved. Cimarron will not submit its Subarea F FSSR until it has resolved all groundwater issues in that subarea. As a result, Cimarron currently anticipates submitting the Subarea F FSSR in May 2005. NRC currently anticipates terminating the license in May 2007. There are no immediate radiological hazards at the site.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

Groundwater samples have shown concentrations of uranium, technetium-99, fluorides, and nitrates. Technetium-99 concentrations appear to be diminishing over time. NRC staff is currently in a dialogue with Cimarron regarding uranium-contaminated groundwater plume emanating from the vicinity of Burial Area 1. Cimarron is considering alternatives for groundwater remediation. ODEQ will retain controls over the non-radiological groundwater components.

There is minimal public interest in the decommissioning activities at this site. No financial

assurance issues have been identified at this time.

4.0 ASSUMPTIONS

- At the time of license termination Cimarron will be able to submit a report to demonstrate that uranium concentrations in the groundwater have been below 180 pCi/l for the past two years.
- Standard assumptions.

5.0 ESTIMATED DATE FOR CLOSURE 5/07

KERR McGEE - CUSHING REFINERY

1.0 SITE IDENTIFICATION

Location: Cushing, Oklahoma
License No.: SNM-1999
Docket No.: 070-03073
Licensing Status: Active/Decommissioning
Project Manager: Derek Widmayer

2.0 SITE STATUS SUMMARY

Contamination at the site consists of uranium and thorium in the soil and groundwater.

The licensee submitted a DP for the site, in April 1994, that included a request for on-site disposal. The licensee revised the DP on August 17, 1998. The licensee is requesting unrestricted release of the site. In place of on-site disposal, the licensee proposed to ship the waste exceeding the SDMP Action Plan Criteria to Envirocare, for disposal. The staff completed its review of this revised DP (license amendment 10, dated August 23, 1999). The licensee has completed shipping about 90 percent of its radioactive contaminated waste to Envirocare. The licensee has released portions of the site for unrestricted use (license amendments 13 and 16).

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

During a meeting on January 15, 2002, the licensee informed the staff that there is contaminated groundwater leaving the licensed site. The licensee has developed a residual groundwater contamination limit and has submitted a license amendment to incorporate these alternate concentration limits into the license.

There is moderate public interest in site remediation activities. No financial assurance issues have been identified at this time.

4.0 ASSUMPTIONS

- Standard assumptions.

5.0 ESTIMATED DATE FOR CLOSURE 12/05

KISKI VALLEY WATER POLLUTION CONTROL AUTHORITY (KVVWPCA)

1.0 SITE IDENTIFICATION

Location: Vandergrift, PA
License No.: No license
Docket No.:
License Status: Non-licensee
Project Manager: Ken Kalman

2.0 SITE STATUS SUMMARY

Contamination consists of uranium-contaminated sludge ash, with an average concentration of ~147 pCi/g and ~4 percent enrichment distributed in an on-site lagoon. The contamination resulted from the incineration and subsequent re-concentration of effluents released (within regulatory limits) from the nearby Babcox & Wilcox facilities. KVVWPCA and its contractors have characterized the contamination in the lagoon with extensive sampling. NRC transmitted site-specific remediation guidance to KVVWPCA in November 1999. KVVWPCA plans on submitting its remediation plan by December 31, 2003. It is anticipated that KVVWPCA will request unrestricted release of the site.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

KVVWPCA is not a licensed facility and currently it is unlikely that it possesses the funds necessary to remove and dispose of the contaminated sludge ash off-site. For on-site remediation alternatives, NRC would apply the requirements of 10 CFR Part 20 Subpart E. For off-site disposal alternatives (excluding disposal at a licensed, LLW disposal facility), the requirements of 10 CFR 20.2002 would apply and any residual contamination at the KVVWPCA site would have to meet the requirements of Subpart E. Disposal of all the sludge ash at a licensed LLW disposal facility would be an acceptable, but expensive option.

NRC staff is coordinating with the Pennsylvania Department of Environmental Protection (PADEP) and KVVWPCA, in advance of the December 31, 2003, remediation plan submittal. PADEP has requested that NRC defer regulation of the KVVWPCA ash lagoon to the State, under Pennsylvania's Solid Waste Management Act and Clean Streams Law. NRC staff is considering, and has not yet responded to, PADEP's July 7, 2003, request. Additionally, PADEP informed KVVWPCA in an April 3, 2003, letter, that disposal of the waste in an appropriately licensed or permitted facility is in the best interest of all parties, that disposal of the waste in a Pennsylvania municipal waste landfill would be prohibited, and that PADEP believes that permanent placement of the ash in the lagoon "would constitute unlawful shallow land burial of low level radioactive waste."

There is political and public interest about remediation of the KVVWPCA site.

4.0 ASSUMPTIONS

- Standard assumptions.

5.0 ESTIMATED DATE FOR CLOSURE 6/12

MALLINCKRODT CHEMICAL INC. (MALLINCKRODT)

1.0 SITE IDENTIFICATION

Location: St. Louis, MO
License No.: STB-401
Docket No.: 40-6563
License Status: Decommissioning
Project Manager: John Buckley

2.0 SITE STATUS SUMMARY

Contaminants at the Mallinckrodt site are: U-238; U-235; U-234 and progeny; Th-230; Ra-226; Th-232; Th-228 and progeny; Ra-228; and K-40. Groundwater contamination is not present.

Decommissioning at the Mallinckrodt site will take place in two phases. Phase 1 will decommission the buildings and equipment to the extent that whatever remains on-site will be released for unrestricted use. Phase 2 will complete the decommissioning of the building slabs and foundations, paved surfaces, and all subsurface materials to the extent that they can be released for unrestricted use.

Mallinckrodt submitted the Phase 1 DP on November 20, 1997. After several RAI and several revisions to the DP, NRC approved the Phase 1 DP on May 3, 2002. Remediation at the site began in July 2002. Mallinckrodt submitted its Phase 2 DP on May 15, 2003. Mallinckrodt is requesting to remediate the site to meet the unrestricted release criteria of 10 CFR Part 20, Subpart E.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

The Mallinckrodt site has been in operation since 1867 and has produced a wide range of products. In addition to the extraction of columbium and tantalum carried out under NRC license STB-401, various uranium compounds were extracted under contract to the Manhattan Engineering District and the Atomic Energy Commission (MED-AEC). Remediation of MED-AEC radiological constituents is currently being performed under the U.S. Department of Energy's (DOE's) FUSRAP by USACE. USACE and Mallinckrodt have yet to agree on who has remediation responsibility for several areas within the facility. Further, since the NRC and the USACE are regulating remediation at the Mallinckrodt site, there is the potential that two different release criteria will be used at the site, making it difficult to release the areas remediated under NRC jurisdiction.

No financial assurance issues have been identified at this time. The staff has not identified any major off-site environmental issues that will not be addressed during decommissioning of the facility. Public interest in the decommissioning activities at the site is moderate.

4.0 ASSUMPTIONS

- Standard assumptions.

5.0 ESTIMATED DATES FOR CLOSURE Phase 1 - 1/06, License Termination - 7/08

MICHIGAN DEPARTMENT OF NATURAL RESOURCES (MDNR)

1.0 SITE IDENTIFICATION

Location: Kawkawlin, Bay County, Michigan
License No.: SUC-1581
Docket No.: 04009015
License Status: Active (possession only)
Project Manager: Sam Nalluswami

2.0 SITE STATUS SUMMARY

The site covers about 3 acres and is contaminated with thorium. The contamination came from magnesium-thorium alloy production at a defunct former licensee. The contaminated soil is covered with a 1.5 m (5 ft) thick clay cap and encapsulated with 0.9 m (3 ft) thick bentonite slurry walls. Ground water contamination is not an issue at this site.

MDNR submitted the DP on March 3, 2003, with addendums on April 22, 2003. MDNR is requesting unrestricted release of the site. The DP acceptance review indicated insufficient information for a detailed technical review and the DP was rejected in August 2003.

There are no immediate radiological hazards at the site. The staff has not identified any major off-site environmental issues that will not be addressed during decommissioning of the facility.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

In 1984, the neighboring licensee undertook encapsulation measures at the site to isolate and prevent the migration of the non-radiological hazardous wastes. Encapsulation measures included the installation of a 1.5m-thick (5 ft) clay cap and 0.9m-thick (3 ft) bentonite slurry walls. As a result, this site involves buried waste that is likely mixed with hazardous chemical wastes. Remediation of the site will require coordination with Michigan Department of Environmental Quality (MDEQ), which regulates hazardous chemicals. The licensee concluded that the mixture of non-radiological hazardous and radioactive waste would make the wastes unacceptable at a chemical or radioactive waste disposal site (other than an authorized mixed-waste disposal facility).

Currently, the State of Michigan does not want the clay cap over the wastes to be removed, because of the non-radiological hazards of the site. However, it is uncertain whether the site can be sufficiently characterized and decommissioned without removal of parts of the cap.

No financial assurance issues have been identified at this time. There is minimal, if any, public interest, to date. Public interest is expected to continue to be minimal if the clay cap is not removed and waste removal is kept to a minimum.

4.0 ASSUMPTIONS

- Standard assumptions.

5.0 ESTIMATED DATE FOR CLOSURE 4/09

MOLYCORP INC.

1.0 SITE IDENTIFICATION

Location: Washington, PA
License No.: SMB-1393
Docket No.: 040-08778
License Status: Timely renewal
Project Manager: Tom McLaughlin

2.0 SITE STATUS SUMMARY

Molycorp produced a ferro-niobium alloy from an ore that contained natural thorium with some uranium. The operation resulted in the production of thorium-bearing slag that was used as fill over portions of the site.

Molycorp submitted its original DP in July 1995. After consultation with NRC staff, the licensee stated its intention to submit a revised DP in two parts. Part I of the DP addressed cleanup of the contaminated portion of the site to comply with the SDMP criteria. Part II would address disposal of material from York and Washington in an impoundment on the Washington site and would comply with the LTR. Part 1 of the revised DP was submitted on June 30, 1999. The staff approved the Part I DP on August 8, 2000.

In January 2001, Molycorp withdrew its amendment request for approval of the Part II DP (on site disposal cell). While Molycorp will continue to decommission the Washington facility under its previously approved Part I DP, it will now dispose of the material off site and will ultimately seek a unrestricted release of the site. On February 26, 2001, Molycorp informed NRC that it finished removal of all its stored above ground waste and shipped the material to the Envirocare facility in Clive, Utah.

Molycorp now has torn down all of its buildings and has sent non-rad contaminated materials off site and rad materials to Waste Control Specialists (WCS). All buildings and foundations have been removed from the site. (The licensee is conducting a new site characterization to determine the amount and extent of contamination.)

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

Public concern in the Canton Township, City of Washington area, is moderate. Congressional interest also mirrors that found in the local communities.

4.0 ASSUMPTIONS

- Standard assumptions.

5.0 ESTIMATED DATE FOR CLOSURE 10/05

MOLYCORP INC.

1.0 SITE IDENTIFICATION

Location: York, PA
License No.: SMB-1408
Docket No.: 04008794
License Status: Timely renewal
Project Manager: Tom McLaughlin

2.0 SITE STATUS SUMMARY

Molycorp purchased the site in 1930 and processed rare earth ores, containing low quantities of thorium and uranium, in large volumes from 1965 to 1992. Contaminants at the site include thorium and uranium. Low concentrations of uranium are found in the ground water at the site.

Molycorp submitted its original DP in August of 1995, proposing to clean-up the site to meet the SDMP Action Plan criteria for unrestricted use. The licensee provided a supplement to the DP on June 30, 1999. The DP was approved on June 6, 2000.

All the building structures have now been taken down. About two-thirds of the site has been excavated and radiological contaminated material shipped off site to WCS. On May 21, 2002, Molycorp informed NRC that a significant increase in volume of contaminated material being shipped off site has adversely impacted both the project time line and budget. On June 17, 2002, Molycorp requested an extension from the regulatory requirements of the Timeliness Rule. The extension from the Timeliness Rule was granted on June 24, 2002. Molycorp is completing the FSS of the remaining 2 acres and will submit the results in November 2003.

There are no immediate radiological hazards at the site.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

Public interest appears minimal at the present time. No financial assurance issues have been identified at this time.

4.0 ASSUMPTIONS

- Standard assumptions.

5.0 ESTIMATED DATE FOR CLOSURE 6/04

PERMAGRAIN PRODUCTS, INC.

1.0 SITE IDENTIFICATION

Location: Karthaus, PA
License No.: 37-17860-02
Docket No.: 030-29288
License Status: Active
Project Manager: James Kottan, RI

2.0 SITE STATUS SUMMARY

Strontium-90 (Sr-90) is the main contaminant of concern at the facility which used the Sr-90 in the manufacture of thermoelectric generators. Sr-90 contamination is found in surface and subsurface soil. Contaminated groundwater is not present at the site.

The Commonwealth of Pennsylvania (Commonwealth) owns the site, leases it to Permagrain Products, Inc. (PPI), and has provided the financial assurance. PPI submitted its DP in April 1998 and began decommissioning in July 1998. The PPI site will be remediated sufficient to release the site for unrestricted use.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

On November 12, 2002, NRC was notified by PPI that commercial operations at the site had ceased as of November 11, 2002, in preparation for a potential bankruptcy filing. NRC was notified on November 26, 2002 that limited commercial production work had resumed at the site. Since that time, however, PPI has gone into bankruptcy. Because PPI has gone into bankruptcy, the license was transferred to the Commonwealth, Department of Environmental Protection, Bureau of Radiation Protection on December 17, 2002.

In June 2002, the U.S. Department of Justice rejected the Commonwealth's claim that the Federal Government should provide the funding to remediate the site because of a past contract between Martin Marietta and the Atomic Energy Commission. The Commonwealth had informed the NRC that the portion of the site containing legacy contamination will be placed into a secure, monitored status until this funding issue is resolved. In April 2003, the Commonwealth received seven million dollars from the Federal Government to continue clean-up of the facility. In February 2003, the Commonwealth submitted a license renewal application, including a revised DP. Decommissioning efforts will resume in 2003 after NRC renews the license, including the revised DP.

Public interest in the decommissioning activities at the site is low.

4.0 ASSUMPTIONS

- The licensee is grandfathered under Option 1 of the Branch Technical Position.
- The change to greenfielding the site will not jeopardize the release guideline status.
- Standard assumptions.

5.0 ESTIMATED DATE FOR CLOSURE 10/04, dependent upon funding

SAFETY LIGHT CORPORATION

1.0 SITE IDENTIFICATION

Location: Bloomsburg, PA
License No.: 37-00030-02
Docket No.: 030-05980
License Status: Active
Project Manager: Marie Miller, RI

2.0 SITE STATUS SUMMARY

Safety Light Corporation (SLC) is licensed to perform site characterization and decommissioning activities. Contamination at the site is from the manufacturing operations of self-luminous watch and instrument dials and other items involving Ra-226, Cs-137, Sr-90, and Am-241. Radioactive waste was disposed on site in three primary locations: silos, lagoons, and a waste dump. Primary soil contaminants include Ra-226 and Cs-137 with small amounts of Am-241. The onsite ground water is also contaminated with H-3, Sr-90, and Cs-137.

In October and December 2000, SLC submitted a DP to the NRC which called for a "task by task" approach to decommissioning because of limited funding availability. The DP presents decommissioning activities which will make the site suitable for unrestricted release. This approach was approved by NRC in December 2001, and on August 15, 2002, NRC amended the SLC license to approve the work plan for processing and sorting waste that was removed from two underground silos in the fall of 1999.

NRC staff continues to coordinate activities with U.S. Environmental Protection Agency (EPA) and PADEP regarding remediation of the SLC site. An EPA Administrative Order of Consent with SLC for the sorting, characterization, and re-packaging of the drums of mixed waste and radioactive waste that were removed from the onsite silos, became effective on February 3, 2003. A separate EPA Order will be prepared for disposal of the waste. Disposal costs are expected to exceed the licensee's decommissioning funds, so EPA is expected to propose a unilateral Order and use EPA emergency removal funds.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

Lack of financial assurance remains the key issue. Effective remediation work cannot be performed because of limited funding. SLC is proposing that the remaining funds be used to characterize, re-package and dispose of waste that was removed from underground silos.

Public interest in the decommissioning activities at the site is limited.

4.0 ASSUMPTIONS

- Standard assumptions.

5.0 ESTIMATED DATE FOR CLOSURE 12/04

SCA SERVICES (SCA)

1.0 SITE IDENTIFICATION

Location: Kawkawlin, Bay County, Michigan
License No.: SUC-1565
Docket No.: 04009022
License Status: Active (possession only)
Project Manager: Sam Nalluswami

2.0 SITE STATUS SUMMARY

A portion of the site is contaminated with thorium from magnesium-thorium alloy production at a defunct former licensee. The contaminated soil is covered with a clay cap and encapsulated with slurry walls. There are also hazardous wastes present at the site. Site characterization including the potential for ground water contamination is being evaluated. The site is being regulated under the State superfund law. NRC issued a license amendment on October 10, 2001, extending the submittal date of the DP to September 30, 2003. The licensee is investigating a restricted-release option.

There are no immediate radiological hazards at the site. The staff has not identified any major off-site environmental issues that will not be addressed during decommissioning of the facility.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

The licensee undertook cap repair measures at the site to isolate and prevent the migration of the non-radiological hazardous wastes. Remediation of the site will require coordination with Michigan Department of Environmental Quality, which regulates hazardous chemicals. The mixture of non-radiological hazardous and radioactive waste would make the wastes unacceptable at a chemical or radioactive waste disposal site (other than an authorized mixed-waste disposal facility). The licensee agreed to implement a monitoring program and to place a restriction on the deed prohibiting intrusion. Currently, the State of Michigan does not want the clay cap over the wastes to be removed, because of the non-radiological hazards of the site.

There is minimal, if any, public interest to date. Public interest is expected to remain minimal if the clay cap is not removed. No financial assurance issues have been identified to date.

4.0 ASSUMPTIONS

- SCA Services will choose restricted release.
- SCA Services will find acceptable long-term institutional control for the site.
- Standard assumptions.

5.0 ESTIMATED DATE FOR CLOSURE 7/11

SEQUOYAH FUELS CORPORATION (SFC)

1.0 SITE IDENTIFICATION

Location: Gore, OK
License No.: SUB-1010
Docket No.: 04008027
License Status: Expired (possession only)
Project Manager: Myron Fliegel

2.0 SITE STATUS SUMMARY

There is surface, subsurface, and groundwater contamination from uranium and thorium throughout the site, and uranium, thorium, and radium in raffinate sludge ponds. There is also chemical contamination of arsenic, molybdenum, and copper in the soils, which being addressed under a Resource Conservation and Recovery Act (RCRA) Administrative Order on Consent (AOC) issued by the EPA Region 6.

In January 2001, SFC requested that NRC determine that the majority of waste at the facility should be classified as byproduct, as defined in Atomic Energy Act paragraph 11(e)(2). By SRM dated July 25, 2001, the Commission concluded that the front-end waste at SFC could be classified as Section 11e.2 byproduct material. By letter dated September 30, 2002, SFC submitted a license amendment application to possess byproduct material. By memo from DWM to FCSS, dated November 12, 2002, project management responsibility for the site was transferred to the Uranium Processing Section. This site will be removed from the SDMP within the next year.

There are no immediate radiological hazards at the site.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

By SRM SECY-02-0095, the Commission approved classifying the front-end waste at the SFC site as byproduct material and disposing of it in accordance with Appendix A to 10 CFR 40. In order to do so, SFC must revise the license to possess byproduct material and submit a reclamation plan to comply with the thirteen criteria of Appendix A. Criterion 5, related to ground water protection may be problematic.

There is a significant volume of waste at the site that cannot be classified as byproduct material. Final disposition of this waste must be resolved before approval to decommission is granted.

The licensee estimate to decommission the site is about \$87 million, of which approximately \$22 million is direct remediation cost, and \$2 million to a fund for long-term site control and monitoring, based on the calculations used for Title II sites; the balance is SFC overhead costs (salaries, taxes, utilities, etc.). Total financial assurance is currently \$6.15 million.

As discussed in Section 2 above, SFC is collecting additional data on ground water movement and contaminant transport. Preliminary results show high concentrations of uranium along outfall 005, that flows from the NW corner of the process area to the Illinois River. SFC proposes "monitored natural attenuation" as the remediation alternative for groundwater. This is an EPA approach for remediation of chemical contamination that requires, among other things, that the

plume be accurately monitored and that mass reduction be demonstrated by means other than dilution. SFC has not demonstrated the requisite monitoring and mass reduction. This issue must be addressed in a reclamation plan.

There is a high level of interest by local environmental groups and local citizens, many of whom are opposed to on-site disposal and license termination.

4.0 ASSUMPTIONS

None

5.0 ESTIMATED DATE FOR CLOSURE TBD

SHIELDALLOY METALLURGICAL CORPORATION (SHIELDALLOY)

1.0 SITE IDENTIFICATION

Location: Newfield, NJ
License No.: SMB-1507
Docket No.: 04007102
Licensee Status: Active, 9/02 Request for Possession-Only
Project Manager: Ken Kalman

2.0 SITE STATUS SUMMARY

Contamination at the Shieldalloy Metallurgical Corporation (SMC) site is in the form of facility generated slag, and baghouse dust. The major contaminants are natural uranium and natural thorium. The site is also on the National Priorities List under CERCLA, because of past operations involving chromium-contaminated on-site groundwater. Remediation of the groundwater is currently taking place.

In August 2001, SMC notified the NRC that they had ceased production activities using source material. On August 27, 2001, the licensee provided notification and intent to decommission. The license is in timely renewal, and was amended on November 4, 2002, to authorize only decommissioning activities that were previously permitted. The licensee submitted a revised license renewal application on May 1, 2003.

SMC submitted its DP on August 30, 2002. The DP was rejected and on May 16, 2003, SMC provided a schedule to develop a revised DP by November 2003. SMC is proposing restricted release of the facility.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

In the past, SMC has found it difficult to sell the slag material. Several attempts to export the material have failed. SMC intended to sell the baghouse dust to a local cement manufacturer, however, no buyer has been found. Regardless of whether the sales occur, SMC has proposed to dispose of these materials on-site in an engineered cell.

SMC has less than adequate financial assurance for decommissioning. To date, public interest in the decommissioning activities of this site is minimal.

4.0 ASSUMPTIONS

- The site would be released under restricted-use conditions, because SMC is proposing on-site stabilization. This assumes that the licensee's institutional controls would be approved by the NRC.
- If the slag and baghouse dust are removed from the site, there would only be low levels of residual radioactivity in some buildings and soils. Unrestricted release of the site would then be an option.
- Standard assumptions.

5.0 ESTIMATED DATE FOR CLOSURE 2010

UNION CARBIDE CORPORATION

1.0 SITE IDENTIFICATION

Location: Lawrenceburg, TN
License Nos.: SNM-724, SMB-720
Docket Nos.: 070-00784, 040-07044
License Status: Previously Terminated
Project Manager: Ken Kalman

2.0 SITE STATUS SUMMARY

The contaminant at the Union Carbide site is enriched uranium. Uranium contamination is present in buildings and soil. Ground water contamination is not an issue at this site.

The UCAR Carbon Company, Inc. (UCAR) DP was approved in two phases: Phase 1, decommissioning activities associated with buildings was approved on July 27, 2000; Phase 2, decommissioning activities associated with soil was approved on December 1, 2000. UCAR is using the cleanup criteria found in the 1993 "Guideline for Decommissioning of Facilities" for buildings and structures. UCAR is "grand fathered," and thus able to use these criteria for buildings. This decommissioning approach will allow release of the site for unrestricted use.

There are no immediate radiological hazards at the site.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

No financial assurance issues have been identified to date. Public interest about decommissioning activities at the site is minimal. The staff has not identified any major off-site environmental issues that will not be addressed during decommissioning of the facility.

4.0 ASSUMPTIONS

- UCAR will not become a licensee.
- Standard assumptions.

5.0 ESTIMATED DATE FOR CLOSURE 12/05

WATERTOWN GSA

1.0 SITE IDENTIFICATION

Location: Watertown, MA
License No.: none
Docket No.: none
Project Manager: Craig Gordon, R I

2.0 SITE STATUS SUMMARY

General Services Administration (GSA) owns the property, and is responsible for performing the required site remediation of contaminated soils and groundwater in areas previously used by the Army for burning licensable quantities of uranium scrap and storage of radioactive waste. The site is currently unlicensed.

USACE, under agreement with General Services Administration, assumed management of site decommissioning activities in 1992. Site remediations were performed in 1981, 1988, and 1996 in which large amounts of contaminated soil were disposed. The final characterization survey submitted in 1996 was supplemented by a 2000 Historical Site Assessment. A DCGL report was submitted to NRC in February 2001, and approved in May 2001. A survey report submitted in April 2003, indicates that data from previous surveys was sufficient to represent the final survey, and no further remediation is necessary to meet the unrestricted release criteria of 10 CFR 20.1402. In May 2003, NRC performed confirmatory measurements of soil and groundwater which showed residual contamination levels significantly below the DCGL. The staff is reviewing the site status to determine whether to release the property for unrestricted use.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

NRC has not required licensing of the site based on the USACE's commitments to complete the final surveys and required remediations to meet unrestricted release criteria. There are no immediate public health and safety risks from the radiological exposure or hazards associated with intrusion of groundwater contamination.

Some local public interest has been shown due to the location of the site being adjacent to a residential community. No financial assurance issues have been identified at this time.

4.0 ASSUMPTIONS

Standard assumptions.

5.0 ESTIMATED DATE FOR CLOSURE 9/03

WESTINGHOUSE ELECTRIC COMPANY, WALTZ MILL

1.0 SITE IDENTIFICATION

Location: Madison, PA
License No.: SNM-770
Docket No.: 070-00698
License Status: Active
Project Manager: Mark Roberts, R I

2.0 SITE STATUS SUMMARY

The Waltz Mill site is currently licensed primarily to provide testing, calibration, and maintenance services for contaminated reactor servicing equipment and other reactor components. Radiological contamination in soil and groundwater exist on a portion of the site as a result of the clean-up activities following a 1961 incident at the test reactor, waste segregation activities, and nuclear laundry services. Significant contamination is also present in retired facilities (hot cells, hot cell support rooms, and a section of the fuel transfer canal) within one of the site buildings. Contaminants are primarily strontium-90 and cesium-137, with lesser quantities of mixed fission, activation products, and trace levels of transuranic radionuclides.

Westinghouse submitted a DP in April 1997 with the goal to achieve release of the site for unrestricted use. NRC approved the DP in January 2000. The licensee has remediated much of the interior and exterior contaminated areas. Remediation activities focused on the three hot cells and supporting facilities in conjunction with work on decommissioning the test reactor. Contaminated soil removal has been completed in the primary remediation area.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

The Viacom TR-2 license was intended to be terminated following decommissioning of the test reactor and the building transferred to the Westinghouse SNM-770 license. Westinghouse and Viacom have not reached an agreement on the transfer. This issue and related issues are currently before a Viacom/Westinghouse arbitration panel.

The SNM-770 facility remains on the SDMP list. The licensee does not intend to request termination of the license, but has gone forward with the remediation project, in part, to address the reasons why the facility was placed on the SDMP list originally. Criteria for removal from the SDMP list needs to be determined.

The Commonwealth of Pennsylvania, Department of Environmental Protection, has great interest in the condition of the site, particularly groundwater issues. No financial assurance issues have been identified at this time.

4.0 ASSUMPTIONS

- Standard assumptions.

5.0 ESTIMATED DATE FOR CLOSURE 5/04

WHITTAKER CORPORATION

1.0 SITE IDENTIFICATION

Location: Greenville, PA
License No.: SMA-1018
Docket No.: 040-7455
License Status: Active
Project Manager: Randolph C. Ragland, Jr., R I

2.0 SITE STATUS SUMMARY

Whittaker's license authorizes possession of licensed material for storage only. Thorium is the most abundant contaminant on-site, however, uranium and radium have also been found.

On February 12, 2003, NRC received a copy of Whittaker's DP without the Financial Assurance section. On April 18, 2003, the DP was rejected due to a lack of required financial assurance documents. A revised DP was submitted to NRC on August 7, 2003.

3.0 MAJOR TECHNICAL OR REGULATORY ISSUES

Previously, NRC staff estimated Whittaker site decommissioning costs to be \$19.7M for unrestricted release and \$2.5 M for restricted release. Whittaker's draft DP estimated decommissioning cost to be \$6.67 M for unrestricted release.

Whittaker is actively investigating beneficial reuse of non-source material slag.

Public interest in the decommissioning activities at this site is very low.

4.0 ASSUMPTIONS

- The licensee will continue with plans for unrestricted site release.
- Standard assumptions.

5.0 ESTIMATED DATE FOR CLOSURE 9/07

**STATUS SUMMARIES
FOR
REACTORS UNDERGOING DECOMMISSIONING**

BIG ROCK POINT

Licensee: Consumers Energy Company
License No.: DPR-6
Status : Permanently shutdown
OL Issuance Date: 5/1/1964
Shutdown Date: 8/30/97
Project Manager: Jim Shepherd

DECOMMISSIONING STATUS

The plant was permanently shut down on August 29, 1997. Fuel was transferred to the spent fuel pool by September 20, 1997. On September 19, 1997, the Consumers Energy Company (CE) submitted a post shutdown activities report (PSDAR) that identified decommissioning activities commencing in September 1997, and concluding in September 2002. The licensee selected the DECON option. On March 26, 1998, CE submitted a revised PSDAR that showed conclusion of decommissioning about August 2005. Dry fuel storage will continue through about 2012, depending on when the U.S. Department of Energy (DOE) accepts fuel. CE is currently decommissioning the site in accordance with the PSDAR.

As of March 27, 2003, all fuel was transferred to the independent spent fuel storage installation (ISFSI). The spent fuel pool will be cleaned and drained.

On April 1, 2003, CE submitted its license termination plan (LTP). By this plan, CE will release those parts of the site not needed for ISFSI operation at the completion of the remediation project. After fuel is removed from the site, the ISFSI will be decommissioned and the license terminated. The reactor head was shipped to Envirocare on May 28, 2003.

CURRENT ISSUES

Contaminants at the site include uranium and decay products, and fission products. Ground water contamination is non-uniformly distributed at the site because of a dry, silty clay layer that underlies only the south part of the site. Boundaries between the geologic units are only approximated because of limited subsurface data; additional data may be necessary to determine the extent of contamination. Reported concentrations in ground water are low, generally less than the minimum detectable activity (MDA) except for tritium. Soil contamination is also generally below MDA.

There is some public interest about the decommissioning of this site. The primary parties are the State of Michigan and the City Councils of surrounding areas. CE has an effective public outreach program and open communication with these parties.

ESTIMATED DATE FOR LICENSE TERMINATION 2012

DRESDEN - Unit 1

Licensee: Exelon Generation Company
License No.: DPR-2
Status : Permanently shutdown
OL Issuance Date: 9/28/1959
Shutdown Date: 10/78
Project Manager: John Hickman

DECOMMISSIONING STATUS

The plant shut down in October 1978 and is currently in SAFSTOR. The decommissioning plan (DP) was approved in September 1993. No significant dismantlement activities are underway. Asbestos removal, isolation of Unit 1 from Units 2 and 3, and general radiation cleanup activities are complete or in progress. The licensee will dismantle Unit 1 at the same time as the other two units onsite, which is expected no earlier than 2011. The licensee submitted an updated PSDAR on June 1, 1998. The PSDAR public meeting was held on July 23, 1998.

CURRENT ISSUES

The licensee is using the Holtec HISTAR 100 dual purpose cask and the HISTORM concrete overpack to store spent fuel. Casks have been loaded with Unit 1 spent fuel from the Unit 2 spent fuel pool, along with Unit 2 spent fuel, to address the Unit 2 spent fuel storage issue. In January 2002, the licensee completed transferring fuel from the Unit 1 spent fuel pool to dry storage.

ESTIMATED DATE FOR LICENSE TERMINATION TBD

FERMI - Unit 1

Licensee: Detroit Edison
License No.:
Status: Active/Decommissioning
OL Issuance Date: 12/65
Shutdown Date: 10/72
Project Manager: Ted Smith

DECOMMISSIONING STATUS

The licensee's initial stage of decommissioning is complete, and bulk sodium has been removed from the site. There is no spent fuel onsite and the facility is currently in SAFSTOR condition. The licensee is currently performing occupational safety enhancement activities; concentrating in non-radioactive areas, such as asbestos removal, and trace sodium cleanup. The trace sodium remediation effort is about 50 percent complete. The facility will be dismantled under the provisions of 10 CFR 50.59. The licensee plans to submit an LTP in 2004.

CURRENT ISSUES

None

ESTIMATED DATE FOR LICENSE TERMINATION 2007

HADDAM NECK - CONNECTICUT YANKEE

Licensee: Connecticut Yankee Atomic Power Company
License No.: DPR-61
Status: Permanently shutdown
OL Issuance Date 12/27/74
Shutdown Date: 7/22/96
Project manager: Ted Smith

DECOMMISSIONING STATUS

Steam generators, RCPs and the pressurizer have been removed from containment and reactor internals segmentation is complete. Preparations are underway for reactor vessel shipment in September 2003. The turbine building is being dismantled. There are 1016 spent fuel assemblies and 18 canisters of greater than Class C waste stored in the spent fuel pool. The licensee plans to begin operation of an ISFSI in 2003.

Connecticut Yankee Atomic Power Company (CY) submitted its LTP in July 2000. The staff completed its review of the LTP and issued its safety evaluation on November 25, 2002.

The Spent Fuel Project Office (SFPO) will be receiving an amendment request from NAC, the dry cask vendor, to incorporate several changes to the cask drying process, based on lessons learned from other licensee loading operations. The amendments will allow faster drying of the cask after removal from the pool, and will reduce occupational exposures.

CURRENT ISSUES

The staff completed its review of the LTP and issued its safety evaluation on November 25, 2002. The LTP is being challenged by the Citizens Awareness Network. A hearing was held during the week of March 10, 2003, and follow on filings are ongoing.

The licensee recently announced that plans with AES Corporation (AES) to use part of the site for a natural gas-fired electric plant are on hold, citing economic conditions unfavorable to AES.

ESTIMATED DATE FOR LICENSE TERMINATION 2006

HUMBOLDT BAY

Licensee: Pacific Gas & Electric Co. (PG&E)
License No.: DPR-7
Status: Permanently shutdown
OL Issuance Date 08/28/62
Shutdown Date: 07/76
Project Manager: Bill Huffman

DECOMMISSIONING STATUS

The plant was shut down in July 1976 and has been in SAFSTOR ever since. A DP was approved in July 1988. Subsequent to the 1996 decommissioning rule, the licensee converted the decommissioning plan into its Defueled Safety Analysis Report (DSAR) which is now updated every two years. A PSDAR was issued by the licensee in February 1998.

CURRENT ISSUES

The licensee is planning to submit an ISFSI application towards the end of 2003. The ISFSI dry storage cask will be unique due to the short length of the Humboldt fuel assemblies. Furthermore, the casks will be stored below-grade to accommodate regional seismicity issues, security concerns, and site boundary dose limits. Review and approval of the ISFSI application is estimated to take 2 years. If the ISFSI application is approved, a decision will then be made on whether to proceed with ISFSI construction. In conjunction with the ISFSI decision, PG&E is involved in a study to determine if the schedule for completion of the Unit 3 site decommissioning should be accelerated to a milestone much earlier than the currently published 2015 date.

Decommissioning work at Humboldt Bay involves recently completed asbestos removal, currently in progress systems and structures radiological characterization, and near term future work on reactor and internals activation analysis, low-level waste (LLW) management plan development, developing of a work, cost, and scheduling process, and the developing of a facilities and staffing plan. This work phase will likely continue until a decision is made on early decommissioning.

ESTIMATED DATE FOR LICENSE TERMINATION TBD

INDIAN POINT - Unit 1

Licensee: Entergy Nuclear Indian Point 2, LLC
Operation: Entergy Nuclear Operations. Inc (ENO)
License No.: Provisional License DPR-5
Status: Permanently shutdown
OL Issuance Date: 3/26/1962
Shutdown Date: 10/74
Project Manager: John Minns

DECOMMISSIONING STATUS

The plant was shutdown in October 1974. Some decommissioning work associated with spent fuel storage was performed from 1974 through 1978. The order approving SAFSTOR was issued in January 1996. The PSDAR public meeting was held on January 20, 1999. The licensee plans to decommission Unit 1 with Unit 2, which is currently in operation. The licensee does not plan to begin active decontamination and decommissioning until 2013, when the IP2 license expires.

The estimated date of transfer from the Office of Nuclear Reactor Regulation (NRR) project management to the Office of Nuclear Material Safety and Safeguards (NMSS) project management has not been determined yet.

CURRENT ISSUES

The staff is issuing an amendment to effectively coordinate Indian Point Unit 1 and 2 programs. The amendment consists of changes to the Technical Specifications (TSs) to facilitate the Unit 2 transition to the Improved Technical Specifications (ITS). Units 1 and 2 are physically contiguous and share a number of systems and facilities as well as a common operating organization. The TSs recognize this commonality as well as the intended use of the Unit 1 facilities to support Unit 2 until retirement of that unit. The TS changes will simplify the administration of the Indian Point site, because: future changes to the organization and to the assignment of responsibilities will require only a single license amendment; the effectiveness of the ENO organization to ensure compliance with both the Unit 1 and Unit 2 licenses is not affected; and, the clarifications that remain will clearly establish the responsibility of the Unit 2 licensed Operations Department personnel for the operation of Unit 1.

The amendment also proposed changes to the requirements of the "Order to Authorize Decommissioning and Amendment No. 45 to License No. DPR-5 for Indian Point Unit No. 1," dated January 31, 1996," (the Order) to ensure compliance with the current requirements of 10 CFR 50.59, "Changes, tests, and experiments," and 10 CFR 50.82, "Termination of license." In addition, the amendment proposed changing the expiration date of Provisional Operating License No. DPR-5 for IP1 to the current expiration date for the Facility Operating License No. DPR-26 for Unit 2.

Unit 1 plans to move all spent fuel assemblies to the west spent fuel pool to minimize leakage.

ESTIMATED DATE FOR LICENSE TERMINATION TBD

LACROSSE

Licensee: Dairyland Power Corporation
License No: DPR-45
Status: Permanently shutdown
OL Issuance Date: 7/3/1967
Shutdown Date: 04/30/87
Project Manager: Bill Huffman

DECOMMISSIONING STATUS

The plant was shut down on April 30, 1987. The SAFSTOR DP was approved August 7, 1991. The DP is considered the PSDAR. The PSDAR public meeting was held on May 13, 1998. Limited and gradual dismantlement is currently underway. The owner is a member of the Private Fuel Storage LLC seeking a license to build and operate an independent spent fuel storage installation on the reservation of the Skull Valley Band of Goshute Indians west of Salt Lake City, Utah. The owner has no immediate plans for an onsite ISFSI.

CURRENT ISSUES

None

ESTIMATED DATE FOR LICENSE TERMINATION

TBD

MAINE YANKEE

Licensee: Maine Yankee Atomic Power Company (MYAPC)
License No.: DPR-36
Status: Permanently shutdown
OL Issuance Date: 6/29/1973
Shutdown Date: 12/06/96
Project Manager: John Buckley

DECOMMISSIONING STATUS

The plant was shutdown on December 6, 1996. Certification of permanent cessation of operations was submitted on August 7, 1997. The PSDAR was submitted on August 27, 1997. The LTP was submitted on January 13, 2000. Based in part on hearing requests by the State of Maine and Friends of the Coast Opposing Nuclear Pollution, the licensee committed to develop a revised LTP and submitted the revised LTP on June 1 and August 13, 2001. Project management responsibility was transferred from NRR to NMSS on January 31, 2003. The LTP was approved on February 28, 2003. Decommissioning is in progress.

CURRENT ISSUES

The licensee is using the NAC International Universal Multi-Purpose Canister System (UMS) dry cask spent fuel storage system. Spent fuel transfer (1432 fuel assemblies in 60 casks) from the spent fuel pool to the onsite ISFSI began in August 2002 and is expected to be complete by November 2003.

ESTIMATED DATE FOR LICENSE TERMINATION TBD

MILLSTONE - Unit 1

Licensee: Northeast Nuclear Energy (NNECO)
License No:
Status: Permanently shutdown
OL Issuance Date: 10/07/70
Shutdown Date: 11/04/95
Project Manager: Drew Holland

DECOMMISSIONING STATUS

Unit 1 was shut down on November 4, 1995, and transfer of the spent fuel to the pool was completed on November 19, 1995. On July 17, 1998, the licensee decided to cease operations. Certifications per 10 CFR Part 50.82(a) were submitted July 21, 1998. The owner's current plan is to leave the plant in SAFSTOR until the Unit 2 license expires. The owner submitted its required PSDAR on June 14, 1999, and has chosen a combination of the DECON and SAFSTOR options. NRC conducted public meetings in Waterford, CT, on the decommissioning process on February 9, 1999, and on the PSDAR on August 25, 1999. Owner responsibility for the Millstone site was transferred from Northeast Utilities to Dominion Nuclear Connecticut on March 31, 2001. Unit 1 is currently in a cold, dark, and dry condition except for the spent fuel pool "island."

CURRENT ISSUES

None

ESTIMATED DATE FOR LICENSE TERMINATION TBD

NUCLEAR SHIP SAVANNAH

Licensee: U.S. Maritime Administration
License No: NS-1
Status: Permanently shutdown
OL Issuance Date: 8/5/1965
Shutdown Date: 11/70
Project Manager: Al Adams

DECOMMISSIONING STATUS

The reactor is currently in SAFSTOR. All fuel has been removed from the ship. The Nuclear Ship (NS) Savannah is moored in the Maritime Administration Reserve Fleet in the James River, Virginia. As needed, the NS Savannah is towed into dry dock for hull maintenance. Because the reactor is portable, the location of decommissioning has not been determined. There are no plans to transfer NRR project management to NMSS project management.

CURRENT ISSUES

The licensee is exploring the possibility of obtaining funding for total decommissioning and disposal of the NS Savannah.

ESTIMATED DATE FOR LICENSE TERMINATION TBD

PEACH BOTTOM - Unit 1

Licensee: Excelon Generation Company, LLC
License No.: DPR-12
Status: Permanently shutdown
OL Issuance Date: 1/24/66
Shutdown Date: 10/74
Project Manager: Kristina Banovac

DECOMMISSIONING STATUS

The facility has been permanently shutdown since October 31, 1974 and is currently in a SAFSTOR condition. The licensee will maintain its facility in SAFSTOR until 2010 and submits its LTP in 2012. Spent fuel has been removed from the site. The PSDAR meeting was held on June 29, 1998. Final decommissioning is not expected until 2015 when Units 2 and 3 are scheduled to shut down.

CURRENT ISSUES

None

ESTIMATED DATE FOR LICENSE TERMINATION 2014

RANCHO SECO

Licensee: Sacramento Municipal Utility District
License No.: DPR-54
Status: Permanently shutdown
OL Issuance Date: 8/16/1974
Shutdown Date: 06/89
Project Manager: John Hickman

DECOMMISSIONING STATUS

The plant was shut down in June 1989. The SAFSTOR DP was approved in March 1995. The licensee revised its DP to use an incremental dismantlement approach. Currently, the licensee is dismantling the secondary side of the plant. Wastes generated during decommissioning will be shipped to Envirocare. In July 1999, the owner decided to continue dismantlement activities with the goal of completing the decommissioning by 2008. On October 4, 1991, the owner submitted a site-specific Part 72 ISFSI application using the VECTRA NUHOMS-MP187 dual purpose cask design. The license was granted on June 30, 2000. The owner has transferred all of the spent fuel from the pool to the on-site ISFSI.

CURRENT ISSUES

None

ESTIMATED DATE FOR LICENSE TERMINATION 2008

SAN ONOFRE - Unit 1

Licensee: Southern California Edison (SCE)
License No.: DPR-13
Status: Permanently shutdown
OL Issuance Date: 3/27/1967
Shutdown Date: 11/92
Project Manager: Bill Huffman

DECOMMISSIONING STATUS

The plant was shut down in November 1992. The licensee submitted an updated PSDAR on December 15, 1998. The facility transitioned from SAFSTOR in 1999 and is now in DECON. Significant dismantlement is currently underway. The licensee has completed demolition of the Emergency Diesel Generator building, the Control Building, and Administration Building. Dismantlement and removal of the electrical generator and main turbine is also complete. The licensee has completed reactor pressure vessel internal segmentation and cutup. The reactor internals abrasive cutting media has been sent offsite for disposal. The top of the Containment Sphere Enclosure Building has been dismantled and most of the large reactor system components have been removed including the reactor pressure vessel, pressurizer and steam generators. The steam generators and pressurizer have been shipped to disposal. Arrangements for reactor pressure vessel disposal are still ongoing. The control room has been relocated and Unit 1 has established its spent fuel pool island concept with the rest of the Unit 1 facility cold and dark. Major security modifications to isolate Units 2 and 3 from the Unit 1 are complete.

ISFSI construction is underway. The ISFSI application has been approved and a certificate of compliance was issued in January 2003. The transfer of Unit 1 spent fuel being stored in the Unit 3 spent fuel pool is expected to take place during the fall of 2003.

CURRENT ISSUES

None

ESTIMATED DATE FOR LICENSE TERMINATION TBD

SAXTON

Licensees: GPU Nuclear and Saxton Nuclear Experimental Corp.
License No.: DPR-4
Status: Permanently shutdown
OL Issuance Date: 11/15/1961
Shutdown Date: 05/72
Project Manager: Al Adams

DECOMMISSIONING STATUS

The plant was shut down in May 1972, and in February 1975, was placed in SAFSTOR until 1986 when phased dismantlement began with removal of support buildings, contaminated soil, and some material in the containment. The owner submitted a DP in 1996, which became the PSDAR. All spent fuel has been removed from the site. The NRC approved an amendment request in 1998 to allow dismantlement under 10 CFR 50.59. The reactor vessel with internals, steam generator, and pressurizer have been shipped to Barnwell for disposal. The owner submitted a LTP in February 1999, but had to resubmit the plan in February 2000 to provide sufficient information for an acceptance review. NRC approved the LTP on March 28, 2003. The owner expects to complete decommissioning so the license can be terminated in the fourth quarter of 2003 and the site restored by the first quarter of 2004.

CURRENT ISSUES

None

ESTIMATED DATE FOR LICENSE TERMINATION 2003

THREE MILE ISLAND - Unit 2

Licensee: GPU Nuclear
License No.: DPR-73
Status: Permanently shutdown
OL Issuance Date: 2/8/1978
Shutdown Date: 03/79
Project Manager: Bill Huffman

DECOMMISSIONING STATUS

The operational accident occurred in March 1979. The plant defueling was completed in April 1990. Post Defueling Monitored Storage was approved in 1993. There is no significant dismantlement underway. The plant shares equipment with the operating TMI - Unit 1. TMI-1 was sold to Amergen in 1999. GPU Nuclear retains the license for TMI-2 and contract to Amergen for maintenance and surveillance activities. Both units are expected to be decommissioned in 2014. The spent fuel was removed except for some debris in the nuclear steam supply system. The removed fuel is currently in storage at Idaho National Engineering Laboratory. DOE has taken title and possession of the fuel debris.

CURRENT ISSUES

None

ESTIMATED DATE FOR LICENSE TERMINATION TBD

TROJAN

Licensee: Portland General Electric
License No.: NPF-1
Status: Permanently shutdown
OL Issuance Date: 11/21/1975
Shutdown Date: 11/9/92
Project Manager: John Buckley

DECOMMISSIONING STATUS

The plant was shutdown in November 1992. The DECON DP was approved in April 1996. The plant is currently undergoing dismantlement under 10 CFR 50.59. The steam generators and reactor vessel have been shipped to Hanford LLW site. The licensee was granted a site-specific Part 72 license for an onsite ISFSI in March 1999. The licensee submitted a proposed LTP in August of 1999. A license amendment approving the LTP was issued in February 2001.

The licensee began spent fuel transfer to the ISFSI in December 2002, and finished fuel transfer in August 2003.

CURRENT ISSUES

The staff has met with the licensee to discuss unresolved inspection items related to the licensee's implementation of the approved LTP. Specifically, the staff had concerns regarding downgrading the classification of survey units that had been approved in the LTP at a higher initial classification. The staff performed extensive confirmatory surveys to evaluate these areas, and is presently evaluating the data.

ESTIMATED DATE FOR LICENSE TERMINATION TBD

VALLECITOS BOILING WATER REACTOR

Licensee: General Electric (GE)
License No.: DPR-1
Status: Permanently shutdown
OL Issuance Date: 5/14/1956
Project Manager: Marvin Mendonca

DECOMMISSIONING STATUS

The plant is currently in SAFSTOR. GE has a self-guarantee instrument. The spent fuel has been removed from the site. There are no plans to transfer NRR project management to NMSS project management.

CURRENT ISSUES

None

ESTIMATED DATE FOR LICENSE TERMINATION TBD

YANKEE ROWE

Licensee: Yankee Atomic
License No.: DPR-3
Status: Permanently shutdown
OL Issuance Date: 12/24/1963
Shutdown Date: 10/01/91
Project Manager: John Hickman

DECOMMISSIONING STATUS

The plant was permanently shut down on October 1, 1991. The DECON DP was approved in February 1995, and the plant is undergoing dismantlement. The steam generators were shipped to the Barnwell, North Carolina low level waste facility in November 1993. The reactor vessel was shipped to Barnwell in April 1997. The owner has removed all of the primary systems, secondary side components, and switch yard equipment from the site. The plant is about 80 percent dismantled. The containment and other major structures remain. The owner has completed construction of an onsite ISFSI. An LTP was submitted in May 1997, and a public meeting was held to discuss the LTP in January 1998. A public hearing was requested on the LTP but was canceled after the owner withdrew the plan in May 1999, to consider the Multi-Agency Radiation Survey and Site Investigation Manual approach. The licensee intends to resubmit the LTP in 2003. The owner transferred all of the fuel from the spent fuel pool to the on-site ISFSI.

CURRENT ISSUES

None

ESTIMATED DATE FOR LICENSE TERMINATION 2005

ZION - Units 1 & 2

Licensee: Exelon Generation Company, LLC
License No.: DPR-39/48
OL Issuance Date: 10/19/1973, 11/14/1973
Shutdown Date: 02/13/98
Project Manager: John Hickman

DECOMMISSIONING STATUS

Zion Units 1 and 2 were permanently shut down on February 13, 1998. The fuel was transferred to the spent fuel pool, and the owner submitted the certification of fuel transfer on March 9, 1998. A public meeting was held on June 1, 1998, to inform the public of the shutdown plans. The owner has converted the turbine-generators into synchronous condensers and have isolated the spent fuel pool within a fuel building "nuclear island." The plant has been placed in SAFSTOR, where it will remain until about 2013 when the decommissioning trust fund will be sufficient to conduct DECON activities. The owner submitted the PSDAR, site-specific cost estimate, and fuel management plan on February 14, 2000.

CURRENT ISSUES

None

ESTIMATED DATE FOR LICENSE TERMINATION TBD

**SCHEDULE FOR REACTOR
DECOMMISSIONING ACTIVITIES**

Schedule For Reactor Decommissioning Activities

	Power Plant	PSDAR** Submitted	LTP Submitted	LTP Approved	Estimated License Term.
1	Big Rock Point	2/95	4/03	6/04	2012
2	Dresden - Unit 1	6/98	TBD	TBD	TBD
3	Fermi - Unit 1	4/98	2004*	TBD	2007
4	Haddam Neck - CY	8/97	7/00	11/02	2006
5	Humboldt Bay	2/98	2007*	TBD	TBD
6	Indian Point - Unit 1	1/96	TBD	TBD	TBD
7	Lacrosse	5/91	TBD	TBD	TBD
8	Maine Yankee	9/97	1/00	2/03	TBD
9	Millstone - Unit 1	6/99	TBD	TBD	TBD
10	Nuclear Ship Savannah	TBD	TBD	TBD	TBD
11	Peach bottom - Unit 1	6/98	2012*	TBD	2014
12	Rancho Seco	12/94	TBD	TBD	2008
13	San Onofre - Unit 1	12/98	TBD	TBD	TBD
14	Saxton	1996	2/00	3/03	2003
15	Three Mile Island - Unit 2	2/79	TBD	TBD	TBD
16	Trojan	1/96	8/99	2/01	TBD
17	Vallecitos	7/66	TBD	TBD	TBD
18	Yankee Rowe	11/94	11/03*	TBD	2005
19	Zion - Units 1 & 2	2/00	TBD	TBD	TBD

* estimated date

** PSDAR or Decommissioning Plan (DP) equivalent

NOTE: Licensees submitted DPs (or equivalent) prior to 1996, and PSDARs from 1996 on.

RESEARCH AND TEST REACTORS DECOMMISSIONING STATUS

Research and Test Reactors Decommissioning Status

	Reactor	Reactor Type	Thermal Power	Location	Status	Fuel Onsite
1	CBS Corporation	Tank	20 MW	Waltz Mill, PA	DECON Approved	No
2	NASA Plum Brook	Pool	60 MW	Sandusky, OH	DECON Approved	No
3	University of Buffalo	Pulsar	2 MW	Buffalo, NY	Possession Only	Yes
4	University of Virginia	Pool	2 MW	Charlottesville, VA	DECON Approved	No
5	General Electric Co.	Tank	50 MW	Sunol, CA	Possession Only	No
6	General Atomics	Mark I Triga	250 KW	San Diego, CA	DECON Approved	Yes
7	Cornell University	Zero Power	100 KW	Ithica, NY	Possession Only	No
8	University of Washington	Argonaut	100 KW	Seattle, WA	DECON Approved	No
9	University of Illinois	Triga	1.5 MW	Urbana, IL	DECON Approved	Yes
10	Georgia Tech	Tank	5 MW	Atlanta, GA	DECON Approved	No
11	General Atomics	Mark F Triga	1.5 MW	San Diego, CA	DECON Approved	Yes
12	General Electric Co.	GE EVESR	17 MW	Alameda, CA	Possession Only	No
13	NASA Mockup	Pool Type	100 KW	Sandusky, OH	DECON Approved	No
14	Manhattan College	Pool Type	0.1 W	Bronx, NY	DECON Approved	Yes
15	University of Virginia	CAVALIER	100 W	Charlottesville, VA	DECON Approved	No

TITLE II SITE DECOMMISSIONING STATUS

TITLE II SITE DECOMMISSIONING STATUS

CONVENTIONAL MILLS

Site	DP Approved	Status	License Termination
ANC Gas Hills, WY	10/88	Revised plan submitted 11/95 but not accepted, to be revised. State to complete cover of second pile and soil cleanup. Licensee bankrupt.	2005
Exxon Highlands, WY	1990	Final survey 1991. Awaiting cell settlement (ground water evaporation pond on top of tailings pile).	2005
Homestake Grants, NM	revised plan 3/95	Final status survey report approved 1998. Ground water corrective action with evaporation pond on 2 nd tailings pile - Superfund site. Alternate Concentration Limits (ACL) for ground water request anticipated.	2013
Kennecott Sweetwater, WY	8/99	Standby status. Ground water corrective action with evaporation ponds on tailings pile.	
Pathfinder Lucky Mc Gas Hills, WY	revised plan 6/96	Final status survey report approved. Continuing evaporation pond reclamation. ACL request was approved.	2005
Pathfinder Shirley Basin, WY	revised plan 12/97	ACL request under review and draft EA issued.	2006
Petrotomics Shirley Basin, WY	1989	Work complete. Final status survey approved 5/01. Ground water sulfate issue. ACLs approved 1998.	2003
Plateau Res. Shootaring, UT		Only operated 3 months in 1982. Interim cover in place. Decommissioning/Reclamation Plan under review.	2006

Site	DP Approved	Status	License Termination
Rio Algom Ambrosia Lake, NM	2003 (mill)	Decommissioning plan submitted October 2000, plan revisions due September 2003. ACL request and mill demolition under review.	2007
Rio Algom Lisbon, NM	12/94	Tailings pile reclaimed but settling. Conducting ground water corrective action program, ACL request received 5/02.	2015
Kennecott L-Bar, NM	5/89	Cleanup and reclamation complete and verified in 1991. Ground water issues.	2003
Umetco East Gas Hills, WY	revised soil plan 4/01	Approval of ACLs for ground water 3/02. Final Status Survey Report due August 2003. Cover of third pile to be completed in 2004.	2005
UNC Church Rock, NM	3/91	Surface cleanup completed and report submitted 11/93. Tailings pile cover erosion protection inspected in 2002. Ground water issues, ACL request anticipated.	
Bear Creek, WY		Work complete. ACLs approved in 1997. Mineral rights issues. DOE preparing Long Term Surveillance Plan.	2003
WNI Split Rock, WY	1997	Final status survey approved 5/00. Ground water issue proposed to be resolved by institutional controls under review.	2006

IN SITU LEACH

Site	DP Approved	Status	License Termination
COGEMA Irigaray/ Ch. Ranch, WY	12/01	Surface reclamation and ground water restoration underway at Ch. Ranch. Restoration complete at Irigaray.	2006

OTHER

Site	DP Approved	Status	License Termination
U.S.E. Green Mt. ion exchange WY	6/01	Submitted final status survey report in 2002.	3/03
Sequoyah Fuels Corporation Gore, OK		Staff is reviewing Reclamation Plan submitted on January 28, 2003, and Corrective Action Plan for groundwater submitted on June 16, 2003.	

MAJOR DECOMMISSIONING DOCUMENTS

Major Decommissioning Documents

Document	Status
NUREG-1757, Vol. 1, "Decommissioning Process for Materials Licensees"	Issued in September 2002
NUREG-1757, Vol 2, "Characterization, Survey, and Determination of Radiological Criteria"	Draft Issued September 2002
Proposed Rule: "Financial Assurance Amendments for Materials Licensees"	Published in October 2002
NMSS Policy and Procedures Letter, 1-77, Rev. 0, "Reactor Decommissioning Program Procedures for Interfacing with NRR"	Issued October 2002
NUREG-0856, "Generic Environmental Impact Statement (EIS) on Decommissioning," Supplement 1	Issued in November 2002
NUREG-1757, Vol 3, "Financial Assurance, Recordkeeping, and Timeliness"	Draft Issued December 2002
Final Rule: Partial Site Release of a Reactor Facility Prior to Approval of the LTP	Issued in April 2003
NUREG-1700, Rev. 1, "Standard Review Plan for Evaluating Nuclear Power Reactor License Termination Plans"	Issued April 2003
NUREG-1640, "Radiological Assessments for Clearance of Materials from Nuclear Facilities"	Issued June 2003
NUREG-1569, Rev.1, "Standard Review Plan for In Situ Leach Uranium Extraction License Applications"	Issued in June 2003
NUREG-1620, Rev. 1, "Standard Review Plan for the Review of a Reclamation Plan for Mill Tailings Sites Under Title II of the Uranium Mill Tailings Radiation Control Act"	Issued in June 2003

Research Publications

Document	Status
NUREG/CR-6821, "Solubility and Leaching of Radionuclides in Site Decommissioning Management Plan (SDMP) Soil and Poned Wastes"	Issued in June 2003
NUREG-1640, "Radiological Assessments for Clearance of Materials from Nuclear Facilities"	Issued in June 2003 (Volumes 1 and 3 currently available)
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