ATTACHMENT 2

EVALUATIONS OF INDIVIDUAL CHANGES/IMPROVEMENTS

EVALUATIONS OF INDIVIDUAL CHANGES/IMPROVEMENTS

This attachment provides the detailed evaluations of 18 individual changes/improvements. Each evaluation consists of: 1) a description of the change/improvement; 2) the status and plans for future implementation; 3) accomplishments/outputs; 4) benefits/outcomes for the Agency's performance goals; 5) lessons learned; and 6) references. The 18 evaluations are listed below in three groups and the matrix summarizes the benefits relative to the Agency's performance goals.

Contents

Matrix of program changes/improvements and benefits.....3

Regulatory framework improvements 5

Decommissioning guidance consolidation and risk informed review.....6
More realistic dose modeling.....9
Power reactor license termination plan review process.....14
Regulatory Issue Summary on lessons learned 16
Terminated License Review Project.....18
Resolution of institutional control issues.....21
License Termination Rule analysis.....25

Decommissioning process improvements 28

Rebaselining and streamlining improvements.....29
Business process improvement for decommissioning licensing.....32
Phased review of decommissioning plans for restricted release sites.....35
Pilot program for decommissioning non-complex sites.....37
Transfer of sites to the Commonwealth of Pennsylvania.....39
Inspection efficiency and cost reduction for materials sites.....40
Transfer of power reactor decommissioning responsibility/budget model.....42
Financial assurance and decommissioning funding activities.....45
Regional laboratory evaluation.....48
NRC/EPA memorandum of understanding for consultation.....51

Stakeholder communication and involvement improvements 53

Stakeholder/public outreach improvements 54

MATRIX OF DECOMMISSIONING PROGRAM CHANGES THAT BENEFIT
NRC STRATEGIC PLAN PERFORMANCE GOALS

Type of change Description of specific change/improvement	**NRC Stragegic Plan Performance Goals** Benefits to achieving performance goals			
	Maintain Safety	**Increase Public Confidence**	**More Effective, Efficient, and Realistic**	**Reduce Unnecessary Regulatory Burden**
Regulatory Framework Improvements				
1. Decommissioning guidance consolidation	✔		✔	✔
2. More realistic dose modeling	✔		✔	✔
3. Power reactor license termination plan review process	✔		✔	✔
4. Lessons learned Regulatory Issue Summary		✔	✔	✔
5. Terminated License Review Project	✔		✔	✔
6. Resolution of institutional control issues	✔	✔		✔
7. License Termination Rule analysis	✔	✔	✔	✔
Decommissioning Process Improvements				
1. Rebaselining and streamlining			✔	✔
2. Business process improvement for decommissioning licensing			✔	
3. Phased review of decommissioning plans for restricted release sites			✔	✔
4. Pilot program for decommissioning non-complex sites				

Type of change Description of specific change/improvement	**NRC Stragegic Plan Performance Goals** Benefits to achieving performance goals			
5. Transfer of sites to the Commonwealth of Pennsylvania				
6. Inspection efficiency for materials sites			✔	
7. Transfer of power reactor decommissioning responsibility/budet model			✔	✔
8. Fianancial assurance and decommissioning funding activities				✔
9. Regional laboratory evaluation			✔	✔
10. NRC/EPA memorandum of understanding for consultation				✔
Stakeholder Communication and Involvement Improvements				
1. Stakeholder/public outreach		✔		✔

REGULATORY FRAMEWORK IMPROVEMENTS

DECOMMISSIONING GUIDANCE CONSOLIDATION AND RISK INFORMED REVIEW OF GUIDANCE

1. DESCRIPTION OF CHANGE/IMPROVEMENT

The Office of Nuclear Material Safety and Safeguards (NMSS) Decommissioning Guidance Consolidation project involved review and consolidation of approximately 80 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 also involved review and changes to make the guidance more risk informed.

2. STATUS AND PLANS FOR FUTURE IMPLEMENTATION

The NMSS Decommissioning Guidance Consolidation project was initiated during FY 2001 and completed by the end of FY 2003. Business Process Reengineering (BPR) techniques were used to develop the documents and manage the review and concurrence process with self-managed teams consisting of NRC Headquarters and Regional staff. Development of each volume also involved stakeholders. An initial public meeting was held to explain the project. State representatives were involved on both writing and review teams, and industry (Nuclear Energy Institute) worked with staff on questions and answers that were incorporated into volume 2. Finally, each volume was published as a draft for public comment and comment responses were included in the final reports.

The three-volume NUREG resulting from this project is intended for use by both NRC staff and licensees but is also available for the Agreement States and the public. It replaces NUREG-1727 (NMSS Decommissioning Standard Review Plan) and NUREG/BR-0241 (NMSS Handbook for Decommissioning Fuel Cycle and Materials Licensees).

Volume 1 of this NUREG series focuses on the decommissioning process for materials licensees and the content of decommissioning plans (DP s). Topics addressed include: 1) applicable regulations, guidance, and references; 2) the decommissioning process; 3) radiological criteria for decommissioning; 4) definition of seven decommissioning groups based on complexity and risk of the range of materials facilities; 5) description of licensee and NRC actions needed for each of the seven groups; and 6) the type and level of detail of facility information to be addressed in licensee DP s.

Volume 2, provides guidacne for characterization, radiological surveys, and determination of radiological criteria. Specifically, chapter 1 describes the iterative approach to decommissioning and decision making framework. Chapter 2 contains new guidance describing the flexibility available in demonstrating compliance and the risk-informed approach in decommissioning that allows, for example, the level of complexity and rigor of analysis conducted for a given site to be commensurate with the level of risk posed by the site. Chapter 3 also provides new guidance on cross-cutting issues such as engineered barriers, transparency and traceability of analyses, and the Data Quality Objectives process. Finally,

Chapters 4-6 and Appendices on radiological surveys, dose modeling, and ALARA analysis have been taken directly from the existing guidance in NUREG-1729 with only minor editing.

Finally, Volume 3 provides guidance on timeliness, record keeping, financial assurance, and bankruptcy. Timeliness includes when to initiate decommissioning, extensions or alternative schedules, and completion of decommissioning. Record keeping includes information for decommissioning plans, record disposition at license termination, NRC staff record retention requirements. Financial assurance includes topics such as cost estimates and financial assurance mechanisms, while bankruptcy describes the bankruptcy review team and procedures for drawing on financial instruments.

This project was complete by the end of FY 2003 with the publication of volumes 2 and 3 in final report form. The next step is implementation with the NRC staff and then licensees. In addition, Commission direction regarding the staff's LTR Analysis recommendations could result in new guidance being prepared in FY 2004-2007 for some of the issues. Other revisions may result from implementation experience.

3. ACCOMPLISHMENTS/OUTPUTS

The key accomplishments are the publication of draft reports for public comment and final reports for the following three volumes of *Consolidated NMSS Decommissioning Guidance,* NUREG-1757.

Volume 1: *Decommissioning Process for Materials Licensees*;

Volume 2: *Characterization, Survey, and Determination of Radiological Criteria; and*

Volume 3: *Financial Assurance, Record Keeping, and Timeliness*

4. BENEFITS/OUTCOMES TO THE DECOMMISSIONING PROGRAM

The benefits to the Decommissioning Program achieving the applicable NRC Strategic Plan goals and strategies (shown below in italics) that result from the consolidated guidance project are discussed below.

1.0 Maintain safety, protection of the environment, and the common defense and security

2.0 Increase Public Confidence

3.0 Make NRC activities and decisions more effective, efficient, and realistic.

4.0 Reduce unnecessary regulatory burden on stakeholders.

Consolidation of about 80 separate existing guidance documents into the single three volume NUREG improves the regulatory framework by allowing easier access to relevant guidance by all parties. Since each group will have access to the same guidance, the expected results are more complete licensee documents that are expected to expedite the approval process for both applicants and staff reviewers. The grouping of sites and cross referencing to sections of the

guidance that are relevant to each group provides a clearer “roadmap” for a wide variety of licensees to use. New guidance has been added to explain the risk-informed and flexible implementation of the LTR, which can be used to improve the focus of both staff and licensees commensurate to the level of risk, thus improving staff efficiency and reducing unnecessary regulatory burden on licensees. Guidance was expanded and enhanced in some key areas where existing guidance was either not available or insufficient (e.g., risk-informed and flexible approach, partial site release, and engineered barriers). Finally, the public and other stakeholders will have a clearer understanding of NRC’s decommissioning process and requirements.

5. LESSONS LEARNED

Two lessons have resulted from this project. First, guidance will continue to evolve based on both licensee and staff review experience and lessons learned in areas where there has been little implementation experience. Second, the stakeholders involvement in the writing and review teams brought a perspective to compliment the staff’s regulator views.

6. REFERENCES

Consolidated NMSS Decommissioning Guidance, Decommissioning Process for Materials Licensees, Final Report, NUREG-1757, Vol. 1, Rev. 1, September 2003.

Consolidated NMSS Decommissioning Guidance, Characterization, Survey, and Determination of Radiological Criteria, Final Report, NUREG-1757, Vol. 2, September 2003.

Consolidated NMSS Decommissioning Guidance, Financial Assurance, Recordkeeping, and Timeliness, Final Report, NUREG-1757, Vol. 3, September 2003.

Results of License Termination Rule Analysis, SECY-03-0069, May 2, 2003.

MORE REALISTIC DOSE MODELING

1. DESCRIPTION OF CHANGE/IMPROVEMENT

Dose modeling is a primary assessment tool that both licensees and the NRC staff use to demonstrate compliance with the dose criteria in the License Termination Rule (LTR), 10 CFR Part 20, Subpart E. Experience with licensee DP s and license termination plans (LTPs) under the LTR has raised issues and concerns by both the staff and the licensees, regarding unnecessary excessive conservatism that has been inherent in the dose assessment methodology. Unnecessary conservatism in dose modeling can have negative impacts on licensee decommissioning, such as higher than necessary cleanup costs. This evaluation summarizes many improvements that have been made during the FY 2001-2003 evaluation time period to make dose modeling more realistic by minimizing unnecessary excessive conservativism.

2. STATUS AND PLANS FOR FUTURE IMPLEMENTATION

During the three-year evaluation period of FY 2001-2003, the staff improvements made dose modeling more realistic by: 1) making recommendations to the Commission for selecting realistic exposure scenarios; 2) improving computer codes/models for probabilistic analysis including incorporation of uncertainties and variability for important parameters; 3) providing guidance on the flexibility and risk-informed approaches for modeling; and 4) developing realistic parameters and a parameter data base.

Selecting realistic exposure scenarios

The staff's LTR Analysis in SECY-03-0069 noted that the main policy-related concern with dose modeling is the selection of future land use scenarios for the 1,000 year assessment time period. It has been a common perception that licensees are required to base remediation and site release on the generally very conservative residential-farmer exposure scenario. To clarify this misperception, the Consolidated Decommissioning Guidance in NUREG 1757, volume 2, provided guidance for the option of alternate site-specific scenarios instead of assuming a default resident farmer scenario. However, the current guidance for alternate scenarios would require analyzing anything that could potentially occur at a site over the next 1,000 years. Using this guidance, most sites would continue to use the resident farmer as a default scenario, thereby, dose assessments for some sites might remain overly conservative. As a result the staff further evaluated this policy issue as part of the LTR Analysis in SECY-03-0069. These evaluations resulted in recommending to the Commission an option to make exposure scenarios more realistic by using the reasonable foreseeable land use option. This option would allow licensees to assume reasonable foreseeable (e.g., a few decades and possibly up to 100 years) land use for the 1,000 year analysis time period to demonstrate compliance with the dose criteria. Furthermore, as part of a risk-informed approach, less likely scenarios, such as the resident farmer scenario, also could be analyzed for information purposes and to risk inform the staff's decision making.

Improving computer codes and incorporating uncertainties into the codes

A second improvement was the development and implementation by NRC's Office of Research (RES) and NMSS of a probabilistic version of the computer codes RESRAD, version 6, and RESRAD-BUILD version 3.0 which allow more realistic modeling than previously available from codes that were overly conservative. Probabilistic RESRAD and RESRAD-BUILD codes allow distributions of parameters to be used in these codes that represent the variability of a parameter across the site and, therefore, is more realistic than selecting a single value to represent the site. In addition, the probabilistic RESRAD code also provides a more useful tool for conducting sensitivity analyses so that licensees can focus on the more important parameters for a site. Specifically, licensees can use the results of sensitivity analyses to focus their site data collection or, if appropriate, use already available default parameter distributions. NMSS implemented these probabilistic codes through referencing in the staff guidance and conducting training for Headquarters and Regional staff on these codes.

The probabilistic versions of the RESRAD and RESRAD-BUILD codes described above also provided licensees with default parameter distributions based on nation-wide data that reflect parameter uncertainties. These default parameter distributions, although conservative, are intended only for conducting sensitivity analyses and not site-specific dose modeling. However, as mentioned above, sensitivity analyses are useful to focus on those parameters that are impacting the dose results and would benefit from site-specific data to achieve more realistic dose results. Similarly, parameters can be identified that do not affect the dose assessment results and can therefore be less critical in the dose impact analysis.

Providing guidance

The Consolidated Decommissioning Guidance, volume 2 was completed in FY 2003. Chapters 2 and 3 of this volume were added to describe the flexible and risk-informed approaches that licensees can use to implement the LTR and how these approaches can contribute to a more realistic dose modeling. For example, discussions were added regarding: grouping of sites by potential risk; flexibility in methods used to demonstrate compliance; and elimination of insignificant radionuclides or pathways as contributors to dose.

In addition to revising NRC guidance, the staff also contributed to the multi-agency radiological laboratory analytical protocols manual (MARLAP). This is a collaborative effort involving EPA, DOE, the National Institute for Standards and Technology, The U.S. Geological Survey, the U.S. Department of Defense, and the Food and Drug Administration. The purpose of MARLAP is to develop guidance on performance based approaches for radiological analyses. This work is ongoing and should be completed in early FY 2004.

Developing realistic parameters and parameter data base

The staff strived to develop realistic parameters to resolve excessive conservatism in screening and site-specific deterministic analysis. For example, NMSS staff developed draft NUREG-1720 addressing the resuspension factor parameter. In addition, staff participated in development of template parameter files for the newly developed RESRAD/RESRAD-BUILD models. These template files are useful tools for users to reduce excessive conservatism in the initial stage of dose analysis. Further, NMSS/RES staff participate, through the Interagency

Steering Committee on Radiation Standards (ISCORS) cleanup sub-committee, in the ongoing development of an electronic data-base for parameter selections.

Future activities

As for the future, some of the improvements noted above will continue with follow up actions, such as those need to implement eventual Commission direction regarding the staff's recommendations in the LTR Analysis for more realistic scenarios. In addition, the improved codes and Consolidated Decommissioning Guidance for dose modeling will need to be implemented through training of the staff and consultations with individual licensees. Use of successful case studies, examples, and lessons learned would be useful to include in training the staff and licensee consultations. Implementation experience and feedback will help identify further dose modeling and guidance improvements that would benefit licensees. The LTR Analysis, Attachment 6, included the commitment to continue improving dose modeling for decommissioning, including guidance, pursuing computer model improvements and development, and improving the state of knowledge on individual parameters and processes. This will be achieved largely by implementing the results of ongoing research being conducted by NRC's Office of Research, such as assessing uncertainty and selecting the appropriate conceptual models, RESRAD Offsite code, and a code for assessing complex sites by providing for running different calculational codes (FRAMES).

3. ACCOMPLISHMENTS/OUTPUTS

The key accomplishments are as follows:

1) Recommended an approach to the Commission for selecting more realistic exposure scenarios;

2) Developed and implemented the probabilistic RESRAD and RESRAD-BUILD computer codes;

3) Implemented default parameter distributions for use in conducting sensitivity analyses;

4) Developed guidance for the flexible and risk-informed approaches to dose modeling.

5) Evaluated and developed realistic key input parameters and parameter data-base.

4. BENEFITS/OUTCOMES TO THE DECOMMISSIONING PROGRAM

The benefits to the Decommissioning Program achieving the applicable NRC Strategic Plan goals and strategies (shown below in italics) that result from the improvements to more realistic dose modeling are discussed below.

1.0 Maintain safety, protection of the environment, and the common defense and security.

3.0 Make NRC activities and decisions more effective, efficient, and realistic

4.0 Reduce unnecessary regulatory burden on stakeholders

An initial outcome from the staff's improvements is the availability of improved computer codes and guidance for licensees to use in demonstrating compliance with the LTR dose criteria and the NRC staff for conducting reviews. These improvements have addressed the primary sources of conservatism in dose modeling. Thus, licensees have tools available that allow greater flexibility and can reduce decommissioning cost and schedules in some cases when less data need to be collected or less justification and reviews are needed for parameters.

However, actual understanding and use of these tools and approaches by licensees as well as their benefit to achieving more effective, efficient, and realistic decommissioning depends on the staff working with licensees to effectively implement these codes and guidance. Future evaluations of these tools and guidance by licensees may help identify actual outcomes.

5. LESSONS LEARNED

Although there are benefits to using more realistic dose modeling approaches, these approaches can be less efficient and more costly to both licensees and NRC staff than conservative assumptions that bound uncertainties and are simpler to justify. This is due to: 1) a generally higher degree of licensee justification and NRC staff discussion and review; and 2) greater challenge to understand and use the more advanced codes. Further, more realistic assumptions may not always be needed to demonstrate compliance with the dose criteria of the LTR. Thus, it should be recognized that in some cases, licensees may decide to use more conservative and less realistic approaches if they can demonstrate compliance with the dose criteria.

The Consolidated Decommissioning Guidance primarily consolidated existing guidance, including that from the NMSS Decommissioning Standard Review Plan for Decommissioning in NUREG-1727 and was not intended to develop new technical guidance for using the recently developed probabilistic codes. Furthermore, there has been little staff or licensee experience in implementing these new codes. As a result, until future guidance can be prepared, consultations between the NRC staff and licensees about successful cases histories for using probabilistic codes can be very useful for licensees. Staff interactions with Connecticut Yankee and with Kirtland Air Force base are good examples for use of probabilistic RESRAD codes to demonstrate compliance with the LTR.

6. REFERENCES

NMSS Decommissioning Standard Review Plan, NUREG-01727, September 2000.

Consolidated NMSS Decommissioning Guidance, Characterization, Survey, and Determination of Radiological Criteria, draft report for comment, NUREG-1757, Vol. 2, September 2002.

Results of License Termination Rule Analysis, SECY-03-0069, Attachment 6, Realistic Exposure Scenarios May 2, 2003.

User's Manual for RESRAD Version 6, Environmental Assessment Division, Argonne National Laboratory, ANL/EAD-4, July 2001.

User's Manual for RESRAD-BUILD Version 3, Environmental Assessment Division, Argonne National Laboratory, ANL/EAD/03-1, June 2003.

Consolidated NMSS Decommissioning Guidance, Characterization, Survey, and Determination of Radiological Criteria, draft report for comment, NUREG-1757, Vol. 2, September 2002.

Results of License Termination Rule Analysis, SECY-03-0069, Attachment 6, Realistic Exposure Scenarios May 2, 2003.

Re-evaluation of Indoor Resuspension Factor for the Screening Analysis of Building Occupancy Scenario for NRC's License Termination Rule, Draft NUREG-1720, June 2002.

POWER REACTOR LICENSE TERMINATION PLAN REVIEW PROCESS

1. DESCRIPTION OF CHANGE/IMPROVEMENT

This evaluation addresses the revision of the Standard Review Plan for Evaluating Nuclear Power Reactor License Termination Plans (NUREG-1700). This improvement is included within the scope of the NMSS Decommissioning Program because NMSS was responsible for power reactor LTP reviews during the FY 2001-FY 2003 evaluation time period.

2. STATUS AND PLANS FOR FUTURE IMPLEMENTATION

The Standard Review Plan (SRP) was first published in April 2000 as NUREG-1700 to provide guidance to the staff on the streamlined review process, the table of contents that identified areas of review for an LTP, and acceptance criteria for each area of review. This SRP was revised and published in April 2003 as NUREG-1700, Rev. 1. Revisions were made to avoid duplication and achieve consistency with the NMSS Consolidated Decommissioning Guidance (NUREG-1757) by referencing applicable sections of NUREG-1757 for additional guidance. Thus, NURGEG-1700, Rev. 1 provides the principle framework for the review of an LTP and links to more detailed guidance in NUREG-1757, particularly volume 2 on determination of radiological criteria and conducting radiological surveys.

3. ACCOMPLISHMENTS/OUTPUTS

The key accomplishment was publication of the revised SRP as NUREG-1700, Rev. 1.

4. BENEFITS/OUTCOMES TO THE DECOMMISSIONING PROGRAM

The benefits to the Decommissioning Program achieving the applicable NRC Strategic Plan goals (shown below in italics) that result from the revision of this SRP are discussed below:

1.0 Maintain safety, protection of the environment, and the common defense and security

3.0 Make NRC activities and decisions more effective, efficient, and realistic.

4.0 Reduce unnecessary regulatory burden on stakeholders

The outcome of the revised LTP is to improve the consistency of decommissioning guidance for power reactors and materials sites and avoid duplication with other staff guidance. Revised guidance will benefit licensee preparations of LTPs and the staff reviews of these submittals.

5. LESSONS LEARNED

None.

6. REFERENCES

Standard Review Plan for Evaluating Nuclear Power Reactor License Termination Plans, NUREG-1700, April 2000.

Standard Review Plan for Evaluating Nuclear Power Reactor License Termination Plans, NUREG-1700, Rev, 1, April 2003.

NMSS Consolidated Decommissioning Guidance, NUREG 1757, Vol. 1, Rev. 1; Vol 2, and Vol. 3, September 2003.

NRC Regulatory Issue Summary 2002-02: Lessons Learned Related to Recently Submitted Decommissioning Plans and License Termination Plans, January 16, 2002.

REGULATORY ISSUE SUMMARY
LESSONS LEARNED FROM DECOMMISSIONING PLANS AND LICENSE TERMINATION PLANS

1. DESCRIPTION OF CHANGE/IMPROVEMENT

In 1997, the NRC issued the LTR for termination of licenses. This new regulation requires licensees to submit different information than had been previously required for DPs and LTPs. In FY 2002, the NRC completed a review of DPs and LTPs recently submitted by licensees under the new regulation. As a result of the review, the NRC found common areas in licensee plans that, if more completely addressed, would improve the quality of their submittals, eliminate requests for additional information, and improve the efficiency and timeliness of NRC reviews. The results of the staff's review were published as a Regulatory Issue Summary (RIS) entitled *Lessons Learned Related to Recently Submitted Decommissioning Plans and License Termination Plans,* and was published on January 16, 2002.

2. STATUS AND PLANS FOR FUTURE IMPLEMENTATION

Publication of the RIS on January 16, 2002, completed this improvement. No future work is planned; however, the lessons learned in the RIS are often presented and discussed with industry groups and licensees.

3. ACCOMPLISHMENTS/OUTPUTS

The accomplishment was identifying and describing lessons learned from staff reviews of DPs and LTPs and publishing the results in a RIS that is available to all licensees and stakeholders.

4. BENEFITS/OUTCOMES TO THE DECOMMISSIONING PROGRAM

The benefits/outcomes to the Decommissioning Program achieving the applicable NRC Strategic Plan goals (shown below in italics) are discussed below.

3.0 Make NRC activities and decisions more effective, efficient, and realistic

The RIS published lessons learned regarding what the regulatory framework (regulation and guidance) requires to be submitted in DPs and LTPs. Therefore, the RIS has improved the implementation of the regulatory framework, which should result in higher quality submittals that will be more efficient for the staff to review.

4.0 Reduce unnecessary regulatory burden on stakeholders

One outcome was that licensees were informed of lessons learned from staff reviews. The LTR requires different information to be submitted than had been previously required. As a result of the review, the NRC found common areas in licensee plans that, if more completely addressed, would eliminate requests for additional information and improve the quality and timeliness of

NRC reviews. Therefore, the staff believes that by providing lessons learned, licensees will have a clearer and more complete understanding of the information to be submitted. As a result, licensees should be able to more efficiently prepare higher quality DPs and LTPs.

5. LESSONS LEARNED

The NRC staff are in the unique position of reviewing the DP s and LTPs submitted by many licensees and addressing many types of sites. As a result, issues or problems that are common to many licensees can be identified and lessons learned developed by the staff. Providing these lessons learned to licensees can help them more efficiently and effectively address common issues and prepare higher quality future submittals.

6. REFERENCES

NRC Regulatory Issue Summary 2002-02: Lessons Learned Related to Recently Submitted Decommissioning Plans and License Termination Plans, January 16, 2002.

Performance and Accountability Report, Fiscal Year 2002, NUREG-1542, vol. 8, pp. 64-65.

2002 Annual Update–Status of Decommissioning Program, Attachment 1 Decommissioning Program Activities, SECY-02-0169, pp. 1-2.

TERMINATED LICENSE REVIEW PROJECT

1. DESCRIPTION OF CHANGE/IMPROVEMENT

In 1989 the General Accounting Office(GAO) issued a report which raised concerns about NRC's criteria and procedures used for the decommissioning of formerly licensed sites. As a result, in 1990, the NRC decided to undertake a review of terminated materials licenses to assure that previously licensed facilities were properly decontaminated and posed no threat to public health and safety.

Oak Ridge National Laboratory (ORNL) was contracted to conduct the Terminated License Review Project to review all materials licenses terminated by the NRC or its predecessor agencies, from inception of material regulation. The purpose of the review was to: (1) identify sites with potential for meaningful residual contamination, based on information in the license documentation; and (2) identify sealed sources with incomplete or no accounting that could represent a public hazard. ORNL identified approximately 675 loose material licenses and 565 sealed source licenses that required further review.

The NRC Regional offices performed a follow-up review, or transferred responsibility for the follow-up review to the appropriate Agreement State. The Regional staff completed their follow-up review during FY 2001. As a result, 42 sites were found to have residual contamination in excess of the NRC's criteria for unrestricted release.

ORNL was also responsible for developing the Terminated License Tracking System, a web-based database for the NRC to document the evaluation and closure process for, in excess of 37,000, terminated license files. This data base will also be use to track the 300-400 licenses terminated each year by NRC.

2. STATUS AND PLANS FOR FUTURE IMPLEMENTATION

The staff officially completed the Terminated License Review Project on September 26, 2001, with the publication of the *Final report on Results of Terminated License Reviews.* Future work for this project is limited to making the data base available to the public, maintaining the data base, and updating each year with terminated licenses that have been completed during the past year.

3. ACCOMPLISHMENTS/OUTPUTS

The key accomplishments of the License Termination Review Project are as follows:

1) Reviewed every AEC/NRC license through the present (greater than 37,000) to determine the potential for residual radioactivity above NRC's unrestricted release criterion in the LTR;

2) Identified over 1200 sites with residual radioactivity above the unrestricted release criterion where further review was needed by staff from NRC's Regional offices;

3) Identified 42 sites where further cleanup of residual radioactivity was needed out of the over 1200 sites reviewed by the Regions; and

4) Developed the Terminated License Tracking System, which is a data base that documents closure of all terminated licenses. The data base provides a complete inventory of all achieved information regarding material licenses. This tracking system is in the process of being made available to the public on the NRC web site.

Although not part of the Terminated License Review Project, oversight of cleanup under the NRC's Decommissioning Program at all 42 sites is either completed or ongoing. By the end of FY 2003 cleanup at 30 of the 42 sites will have been completed and cleanup is continuing at the remaining 12 sites.

4. BENEFITS/OUTCOMES TO THE DECOMMISSIONING PROGRAM

The benefits to the Decommissioning Program achieving the applicable NRC's Strategic Plan goals and strategies (shown below in italics) that result from the Terminated License Review Project are discussed below.

1.0 Maintain safety, protection of the environment, and the common defense and security.

While the Terminated License Review Project was not triggered by an operational event, it was triggered by concerns raised by the GAO that some formerly licensed sites with terminated NRC licenses were either not cleaned up sufficiently or there was insufficient documentation to demonstrate acceptable cleanup. Thus, this project addressed potential safety concerns expressed by stakeholders. One of the outcomes or benefits of this project was that sites where additional cleanup was necessary were identified so that appropriate cleanup would be completed to maintain safety.

2.0 Increase public confidence

The Terminated License Review Project addressed and resolved stakeholder concerns about cleanup of formerly terminated licensed sites . In addition the project upgraded the documentation, where needed, to be able to demonstrate acceptable completion of cleanup. The project also provides the documentation in a tracking system/database and makes it available to stakeholders on NRC's web site. This will help ensure that stakeholders, now and in the future, have access to site cleanup information. Maintaining access to this information will help ensure finality of cleanup by minimizing the potential for unnecessary additional cleanup in the future, due to inadequate documentation. Thus, the availability of this database should reduce unnecessary costs to our stakeholders in the future. Maintaining access to data base will also improve confidence that NRC's regulatory activities have successfully achieved complete and safe cleanup at all terminated licensed sites.

4.0 Reduce unnecessary regulatory burden on stakeholders.

The outcomes that benefit the performance goal, *Increase public confidence, described above* also will reduce unnecessary burden on stakeholders.

5. LESSONS LEARNED

Based on completion of this project the staff has the following lessons learned:

1) The review showed that documentation of license termination since 1985 has been very effective, because very few site files since 1985 had to be revisited.

2) Although the staff did identify 42 sites which required remediation, this number represents approximately 0.1% of the licenses terminated and reviewed.

3) The review also demonstrated the importance of establishing sufficient documentation to ensure finality of cleanup and license termination and help prevent unnecessary future cleanup or the cost of repeating a similar review of the documents in the future.

4) Continued support of the tracking system/data base will be worth the investment to reduce the potential of future cleanup or repeating the review.

6. REFERENCES

Evaluation of Terminated Nuclear Material Licenses: A Report of Identified Sites and Sealed Source Licenses, Oak Ridge National Laboratory, NUREG/CR-6592, February 1999.

Evaluation of Terminated Licenses Parts 30, 40, and 70: The Terminated License Tracking System, Oak Ridge National Laboratory, NUREG/CR-6669, March 2001.

2002 Annual Update–Status of Decommissioning Program, SECY-02-0169, September 18, 2002.

Final Report on Results of Terminated License Reviews, Memorandum from J.T. Buckley to L.W. Camper, September 26, 2001.

RESOLUTION OF INSTITUTIONAL CONTROL ISSUES

1. DESCRIPTION OF CHANGE/IMPROVEMENT

Legally enforceable and durable institutional controls are required by the LTR in 10 CFR Part 20, Subpart E for those sites seeking license termination with restricted release or alternate criteria. In 1997, at the time the LTR was finalized, the Statements of Consideration noted that DOE was authorized to take ownership and long-term control of NRC licensed sites seeking restricted release if DOE agreed to such transfers. NRC licensees have had difficulty arranging either DOE or other institutional controls. As a result, the staff has worked on many options described below to resolve this issue.

2. STATUS AND PLANS FOR FUTURE IMPLEMENTATION

The staff raised the institutional control issue to the Commission in August 2000 (SECY-00-0180) and recommended resolving the issue by seeking an agreement/memorandum of understanding (MOU) with the U.S. Department of Energy (DOE) for transfer of NRC licensed sites upon license termination to DOE for long-term control as authorized under Section 151(b) of the Nuclear Waste Policy Act. This recommended option was one of the options that the staff believed could facilitate remediation of some decommissioning sites in non-Agreement States. In December 2000, the Commission approved the staff's recommendation to seek an MOU with DOE and notify the Commission if the MOU is not feasible so other options could be considered. In response to the Commission's direction, the staff worked with DOE on a draft MOU during FY 2001 until DOE put work on hold pending resolution of numerous DOE policy issues related to its Long-Term Stewardship Program. As a result, in a November 2001, Chairman Meserve wrote a letter to Secretary Abraham encouraging DOE to complete the MOU. In January 24, 2002, Under Secretary Card responded to the Chairman and indicated that NRC, DOE, U.S. Department of the Interior (DOI) and the Office of Management and Budget work to resolve this issue. The staff reported this status to the Commission in January 2002 (SECY-02-0008). Subsequently, periodic coordination meetings were held between senior NRC and DOE managers and the staff monitored DOE's evolving plans to change its Long-Term Stewardship Program. Initial plans focused on the potential transfer of the program to DOI or another Federal land management agency; however, eventually DOE decided not to pursue this option. The staff reported this status to the Commission in October 2002 (SECY-02-0177), and concluded that efforts to seek an MOU had not been successful. Subsequently, DOE began considering retaining responsibility for long-term stewardship of its sites in a new and separate office within DOE. This new Office of Legacy Management was announced and included in the President's FY 2004 budget submitted to Congress in February 2003. During FY 2003 staff monitored DOE preparations for this new office and in July 2003 senior management from NMSS and DOE EM agreed to schedule a meeting with the DOE director of the Office of Legacy Management.

In a parallel effort to monitoring changes to DOE's Long-Term Stewardship Program, and as a result of uncertainty in the DOE MOU and the continued need for some NRC licensed sites to consider restricted release, the Commission directed the staff in June 2002 (SRM-SECY-01-

0194) to conduct an analysis and recommend options to make the restricted release/alternate criteria provisions of the LTR more available for licensee use. The staff provided and initial analysis in October 2002 (SECY-02-0177) and a final analysis in May 2003 (SECY-00-0069). The final analysis recommended options for Commission consideration that would involve an NRC role in institutional controls. While these recommended options are a significant departure from one of the goals of the LTR of no NRC role after remediation and license termination, they would provide an immediately available and certain resolution of the institutional control issues and thus would result in the viability of the restricted release and alternate criteria provisions of the LTR. As of September 2003 the staff has not received direction from the Commission regarding the staffs' recommendations. The staff also noted that it would continue to monitor DOE's progress toward establishing an Office of Legacy Management in FY 2004 and reevaluate the potential for future site transfer to DOE.

The future status of this potential improvement depends on the Commission's direction in response to the staff's analysis and recommendations in SECY-03-0069.

3. ACCOMPLISHMENTS/OUTPUTS

The key accomplishments of the staff's efforts to resolve the institutional control issues are as follows:

1) Signed an Agreement in Principle with DOE to develop MOU for a decision process for NRC and DOE to make decisions regarding potential transfer or ownership and control of NRC licensed sites to DOE under Section 151(b) of NWPA;

2) NRC and DOE staff prepared a draft MOU;

3) NRC staff recommended options to the Commission in SECY-03-0069, other than the DOE MOU, to resolve the institutional control issues. Staff also made progress with a former licensee on a pilot study to develop a legal agreement and restrictive covenant that would establish the necessary institutional controls with NRC monitoring their long-term effectiveness.

4. BENEFITS/OUTCOMES TO THE DECOMMISSIONING PROGRAM

Outcomes that will benefit the Decommissioning Program are dependent on the Commission's decision and direction regarding the staff's recommended options that have the potential for resolving the institutional control issue. As noted in SECY-03-0069, the staff believes that the recommended options could have the following outcomes with respect to achieving the applicable NRC Strategic Plan goals (shown in italics):

1.0 Maintain safety, protection of the environment, and the common defense and security.

Provisions of the LTR for restricted release and alternate criteria would become viable by implementing the options for an NRC role. In addtion, viable new options for an NRC role in institutional controls offer greater assurance of long-term protection for future generations.

2.0 Increase Public Confidence

Resolving the institutional control issues using an options involving NRC should increase public confidence because continuous Federal Government involvement would be more protective of future generations because of continuous Federal government involvement.

4.0 Reduce unnecessary regulatory burden on stakeholders.

Viable new options will be available soon for restricted release and alternate criteria provisions of the LTR so that licensees can make decommissioning decisions and plans with more confidence and avoid unnecessary and costly delays.

5. LESSONS LEARNED

Based on the activities conducted for this potential improvement, the staff has the following lessons learned:

1) Relying on another agency for resolving NRC issues is tenuous. Staff should strive to develop NRC solutions;

2) During the time period that the staff has worked to resolve this issue, many decommissioning sites stopped considering restricted release due to the ongoing uncertainty and lack of clear solution; and

3) Given the few sites considering restricted release at this time, and ongoing uncertainly about a DOE option, the staff's recommendations to the Commission in SECY-03-0069 may be the most efficient and effective options available.

6. REFERENCES

Issues and Funding Options to Facilitate Remediation of Decommissioning Sites in Non-Agreement States, SECY-00-0180, August 23, 2000.

Staff Requirements-SECY-00-0180-Issues and Funding Options to Facilitate Remediation of Decommissioning Sites in Non-Agreement States, December 19, 2000.

NRC/DOE Agreement in Principle for Transfer of NRC Restricted Release Sites to DOE as Authorized under Section 151(b) of the Nuclear Waste Policy Act, March 16, 2001.

Letter from Chairman Meserve to Secretary Abraham, November 2, 2001.

Status Report on Developing a Memorandum of Understanding with the U.S. Department of energy for a Decision Process Regarding Potential Site Transfers under Section 151(b) of the Nuclear Waste Policy Act, SECY-02-0008, January 14, 2002.

Letter from Undersecretary Card to Chairman Meserve, January 24, 2002.

Staff Requirement-SECY-01-0194–AAR Manufacturing Group, inc., and Proposed Use of Unimportant Quantities of Source Material in 10 CFR 40.13(a) as Decommissioning Criteria, June 18, 2002.

Initial Analysis and Plan for Addressing License Termination Rule Issues, SECY-02-0177, October 1, 2002.

Results of the License Termination Rule Analysis, SECY-03-0069, May 2, 2003.

LICENSE TERMINATION RULE ANALYSIS

1. DESCRIPTION OF EVALUATION

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 provisions for restricted release and alternate criteria more available for licensee use. The SRM also identified other important LTR implementation issues impacting the decommissioning of sites. The staff's analysis resulted in recommendations to the Commission that could lead to future regulatory actions that would resolve the issues and improve the program.

2. STATUS AND PLANS FOR FUTURE IMPLEMENTATION

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 following issues were identified: institutional controls and restricted release/alternate criteria; relationship between the LTR release limits and other release limits; realistic exposures scenarios; and measures to prevent future legacy sites.

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, and measures to prevent future legacy sites. Plans for future evaluations were identified for a new issue on intentional mixing. The staff's evaluations considered a wide range of relevant information and experience from other NRC programs and regulations, as well as external sources, such as the EPA; DOE; Agreement States; and National Research Council reports. Similarly, extensive coordination among NRC staff was conducted to gain further information and perspective, as well as to identify interrelationship among the individual issues. The staff's evaluations also identified options to resolve the issues, evaluated their pros and cons, and used these results to recommend specific options for Commission consideration and eventual direction. The staff also recommended a variety of regulatory actions for Commission consideration to implement the recommended options 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 in SECY-03-0069, and the results of these evaluations will be provided to the Commission in Fall 2003.

The staff expects to receive Commission feedback and direction in the Fall of 2003 for follow up actions regarding the staff's recommendations.

3. ACCOMPLISHMENTS/OUTPUTS

The key accomplishments are as follows:

1) Completed an initial analysis and plan for addressing LTR issues (SECY-02-0177).

2) Completed the results of the LTR analysis including evaluations and recommendations to resolve each issue (SECY-03-0069).

4. BENEFITS/OUTCOMES TO THE DECOMMISSIONING PROGRAM

The benefits to the Decommissioning Program achieving the applicable NRC Strategic Plan goals (shown in italics) that result from the LTR Analysis are discussed below.

1.0 Maintain safety, protection of the environment, and the common defense and security.

3.0 Make NRC activities and decisions more effective, efficient, and realistic.

4.0 Reduce unnecessary regulatory burden on stakeholders.

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 activities of both the NRC staff and licensees by addressing key challenges 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. For those few sites, however, that might still need to use the restricted release or alternate criteria provisions of the LTR, viable options for restricting use are recommended, thus improving the regulatory framework.

For future decommissioning sites, specific changes to the regulatory framework 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 outcomes 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.

5. LESSONS LEARNED

Although the LTR appears to be a straight forward regulation, the issues that have been surfaced by the staff and licensees attempting to implement the LTR are very complex. Due to the limited number of sites that will decommission in the future and their diversity, it may take several years to identify and resolve all the potential issues associated with the LTR. As such, staff should focus on implementing the LTR within the current framework and not attempt to identify further improvements until the current efforts are fully realized.

6. REFERENCES

Initial Analysis and Plan for Addressing License Termination Rule Issues, SECY-02-0177, October 1, 2002.

Results of the License Termination Rule Analysis, SECY-03-0069, May 2, 2003.

DECOMMISSIONING PROCESS IMPROVEMENTS

REBASELINING AND STREAMLINING IMPROVEMENTS

1. DESCRIPTION OF CHANGE/IMPROVEMENT

This is an evaluation of the effectiveness of the Rebaselining and Streamlining improvements that were started in FY 2000 to achieve a more efficient Decommissioning Program.

The objective of Rebaselining was to develop and implement a comprehensive integrated plan for successfully bringing Site Decommissioning Management Plan (SDMP) and complex decommissioning sites to closure. Site status summaries are maintained, and updated monthly, for each SDMP and complex site. These summaries describe the status of each site and identify the technical and regulatory issues impacting removal of the site from the SDMP, or completion of decommissioning. The staff also developed and maintains Gantt charts for each site, which are updated quarterly, to guide the management of decommissioning activities. The Gantt charts identify all major decommissioning activities and schedules for completion.

The objectives of Streamlining include: a) assuming more proactive consultations with licensees undergoing decommissioning; b) expanding the acceptance review process, to include a limited technical review, to reduce the need for additional rounds of staff questions; c) ensuring that institutional controls and financial assurance requirements are adequate before beginning a technical review of the decommissioning plan; 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.

2. STATUS AND PLANS FOR FUTURE IMPLEMENTATION

In the 2000 Update (SECY-00-0094) the staff reported that it had developed and started to use its Rebaselining and Streamlining improvements in September 1999. These improvements have been continuously used during FY 2000 and the FY 2001-FY2003 evaluation time period. To ensure implementation of these improvements, they were incorporated into the staff's regulatory guidance documents and the Decommissioning Branch Operations Manual and management regularly reminds staff of the importance of using these new tools. In addition, the staff's quarterly Operating Plan reviews are used to track the staffs' updates to site summaries and Gantt chart schedules for each site.

3. ACCOMPLISHMENTS/OUTPUTS

The key accomplishment was the continued use of these improvements over the FY 2001-FY 2003 evaluation time period and incorporation of these improvements into regulatory guidance, internal operating procedures, and the quarterly Operating Plan reviews.

4. BENEFITS/OUTCOMES TO THE DECOMMISSIONING PROGRAM

The benefits to the Decommissioning Program achieving the applicable NRC Strategic Plan goals (shown below in italics) that result from Rebaselinging and Streamlining improvements are discussed below.

3.0 Make NRC activities and decisions more effective, efficient, and realistic.

4.0 Reduce unnecessary regulatory burden on stakeholders

The outcomes of these process changes, particularly the proactive consultations, expanded acceptance reviews, and side-by-side confirmatory surveys have been successful at identifying and resolving issues sooner and reducing potential delays in the decommissioning process.

5. LESSONS LEARNED

The following lessons learned were obtained from interviews of the staff project managers who have been using these improvements over the past three years.

1) Although the changes have made work more efficient and effective, it is often difficult to see the results because new issues often emerge that must be addressed and may remove any efficiencies previously gained;

2) Although the improvements should increase efficiency, there is no available system to analyze staff FTE expenditures or a baseline of historical expenditures that is necessary to measure efficiencies;

3) Gantt chart schedules are effective for management and tracking by clearly defining the steps in the decommissioning process and schedules and changes to the schedules. However, the Gantt charts do not facilitate the decommissioning process or speedup the process;

4) “Phased decommissioning” to cleanup highest risk areas first, may be necessary if a licensee has severe funding limitations. NRC will focus on a few key decision points and the final survey and use in process inspections of activities.;

5) Recognize that the phased review for institutional controls is not the same approach for all restricted release sites, but it should be tailored to site specific conditions and sequenced into steps, based on the issues at the site;

6) More aggressive and frequent interactions with licensees might be needed by the NRC project manager or NRC management to motivate licensees who are passive and not making acceptable progress;

7) If multiple rounds of requests for additional information (RAIs) are not successful, more intense consultations might be needed to discuss and resolve each issue. Experience has shown that consultations can be adjusted to meet the needs of the licensee and as a tool to achieve progress, if needed. However, such an approach requires more staff time and may be difficult to forecast;

8) Use proactive consultations and encourage frequent interactions. If needed, use weekly calls and weekly written informal progress reports that include work completed and planned for next week.

9) Frequent verbal consultations and side-by-side confirmatory radiological surveys are particularly useful ways to avoid delays in decommissioning schedules because verbal communications and confirmation of correct understanding is immediate and does not depend on much slower exchanges of written information.

10) A central data base/web site/process to capture and share lessons learned and sites summaries would be useful. Consider a Decommissioning Lessons Learned web site to post useful references on common issues and solutions.

11) Consider appropriate ways to offer incentives to licensees to facilitate completion of decommissions. Example incentives to evaluate include: a) special consultations such as for dose modeling instructions or demonstrations; b) staff identification of acceptable options for licensee consideration; c) dose modeling by the staff; d) accelerated licensing reviews for high priority sites; e) flexibility in the decommissioning process, such as phased decommissioning, when severe financial conditions limit a licensees ability to complete decommissioning.

6. REFERENCES

Decommissioning Branch Operations Manual

Status of Decommissioning Program, SECY-00-0094, April 25, 2000.

2001 Annual Update–Status of Decommissioning Program, SECY-01-0156, August 17, 2001.

2002 Annual Update–Status of Decommissioning Program, SECY-02-0169, September 18, 2002.

BUSINESS PROCESS IMPROVEMENT INITIATIVE FOR THE DECOMMISSIONING LICENSING PROCESS

1. DESCRIPTION OF CHANGE/IMPROVEMENT

A Business Process Improvement (BPI) initiative for the decommissioning process is being performed to identify improvement opportunities that increase efficiency and effectiveness without reducing safety. The "NMSS Business Process Improvement (BPI) Methodology, Version 1.2, dated October 2002 was used as a guide in performing this BPI initiative. This methodology uses a five step process: plan, assess, improve, implement and measure. For planning and assessment steps of this initiative, a contractor, with BPI expertise, was used by NRC. In the assessment step, the contractor conducted facilitated meetings and documented the "As-Is" or current process. The facilitated meetings and subsequent documentation focused on information provided by DWM management and staff including: a representative group of technical staff, project managers, and supervisors with decommissioning experience and responsibility for a range of program activities. Activities in the assessment included: creating "As-Is" process workflow maps to diagram the existing process; discussing a "picture of success"; brainstorming and targeting improvements; prioritizing preliminary improvements; categorizing preliminary improvement opportunities into near-term "quick hits" and long-term suggestions; and describing the potential benefits of the improvements.

At the end of the assessment step, it is anticipated that all NMSS divisions will share ideas and findings to identify commonalities in the processes in individual divisions that would result in office-wide improvements. Finally, the improve, implement, and measure steps will be performed in the future by the NRC staff, with minimal assistance from contractors.

2. STATUS AND PLANS FOR FUTURE IMPLEMENTATION

During FY 2003, the BPI assessment step for decommissioning licensing was conducted and consisted of two facilitated sessions to review the process and identify opportunities for improvements in both efficiency and effectiveness areas. These sessions resulted in identifying both short-term and long-term improvement opportunities. Examples include:

Short-term/quick hit improvement opportunities

Project management (PM) improvements such as training, early team formation/assignments, schedule reviews early and improve resource planning to minimize conflicts

Staff training on LTR analysis results for more realistic scenarios

More proactive and regular pre-submittal licensee consultations

Bi-weekly discussions with the Office of the General Counsel on status of its legal review actions

Streamline the Technical Assistance Request (TAR) procedure

Use the draft Safety Evaluation Report to develop and collect RAIs for all technical areas and submit as one RAI

Additional staff environmental review training

Long-term improvement opportunities

Hire additional technical staff

Empower staff at lower-levels and with less management involvement

Prioritize projects

Eliminate Commission papers for SDMP site removal

Focus reviews and licensee consultations on high risk issues

These initial results will be shared and compared with results from other licensing programs within in NMSS in early FY 2004.

3. ACCOMPLISHMENTS/OUTPUTS

The key accomplishments include completing an assessment of the decommissioning licensing process and identifying short-term and long-term improvement opportunities for future study. One of the short-term suggestions for improving the TAR process has already been implemented by the staff.

4. BENEFITS/OUTCOMES TO THE DECOMMISSIONING PROGRAM

3.0 Make NRC activities and decisions more effective, efficient, and realistic.

The licensing BPI represents a more formal methodology for conducting a self assessment to seek ideas to improve the licensing program. Several short-term and long-term improvement ideas, if implemented would contribute to both efficiency and effectiveness of staff licensing activities. Many of these ideas have been incorporated into the recommendations of the Program Evaluation.

5. LESSONS LEARNED

The BPI methodology was a useful way to systematically evaluate the components of the licensing process and resulted in many improvement opportunities, some of which have also been suggested by other self assessments.

Some suggestions, such as the need for empowerment and improved project management, and prioritization of work, are reoccurring themes or are already topics being evaluated by NMSS.

The use of a facilitator focused the large group, contributed to collaboration, and stimulated brainstorming. Future assessments involving many staff members might benefit from using a facilitator.

6. REFERENCES

NMSS Business Process Improvement (BPI) Methodology, Version 1.2, October 2002.

PHASED REVIEW OF DECOMMISSIONING PLANS FOR RESTRICTED RELEASE SITES

1. DESCRIPTION OF CHANGE/IMPROVEMENT

This improvement was proposed by the staff during the FY 2002 Budget development process as an efficiency in both the decommissioning reviews and Environmental Impact Statement (EIS) development. Since institutional controls and related financial assurance are two of the most challenging issues to review and resolve, these issues would be reviewed as the first phase of the decommissioning plan review. Only after these issues are resolved will the remaining safety review and preparation of the environmental impact statement (EIS) begin. Resolving these issues could affect the content of the decommissioning plan and EIS, thus the efficiency of the staff and licensee work on these tasks will be improved by avoiding premature reviews of submittals that might be changed significantly.

2. STATUS AND PLANS FOR FUTURE IMPLEMENTATION

The phased review process was initiated in FY 2001 for complex decommissioning sites proposing restricted release and implemented by Section 13.4.2 of the Consolidated Guidance, (NUREG-1757, vol. 1). The status of implementation of the phased review at specific sites was summarized in Attachment 1 of the staff's License Termination Rule Analysis (SECY-03-0069). Implementation of the approach has been tailored for each of the sites based on their particular issues and stage in developing a decommissioning plan. The staff plans on continuing to use the phased review approach tailored to specific site needs.

3. ACCOMPLISHMENTS/OUTPUTS

The key accomplishments are as follows:

1) Included the phased approach in the staff's decommissioning guidance; and

2) Implemented the phased approach at three decommissioning sites.

4. BENEFITS/OUTCOMES TO THE DECOMMISSIONING PROGRAM

The benefits/outcomes to achieving the applicable NRC Strategic Plan goals (shown below in italics) are discussed below.

3.0 Make NRC activities and decisions more effective, efficient, and realistic.

4.0 Reduce unnecessary regulatory burden on stakeholders.

The potential outcome from the staff's developing and implementing the phased approach is greater efficiency in licensee preparation and staff review of decommissioning plans. Furthermore, higher quality decommissioning plans are anticipated. Because the process is

ongoing for the licensees where it is being used, the final outcome is not yet known, but interactions among the staff and licensees have been constructive and appear to be useful.

5. LESSONS LEARNED

The staff's implementation of the phased approach has resulted in the following lessons learned:

1) The staff has applied the phased review approach in a flexible manner by tailoring it to the needs of each site;

2) Tailoring the phased review has revealed that the institutional controls and financial assurance might not be the only issues that should be resolved early. Thus, the concept of addressing key issues early before the full review of the decommissioning plan and EIS are started can be applied to other issues as well, such as data quality, scenarios, and dose modeling results. Resolving these issues could form the basis of a licensees decision between either unrestricted release or restricted release;

3) Tailoring the phased review also has shown that it can be applied at different times--during the early stages of decommissioning plan development or even after a decommissioning plan has been rejected by the staff and the licensee begins to revise deficient sections.

4) Although the phased review approach can be useful, the approach has some limitations that must be recognized. First, the staff should not give the impression that it is approving or concurring on a licensees approach. Rather, the staff is providing early feedback that the direction or approach the licensee is taking would lead to accepting the DP for detailed technical review and not rejecting the DP. Second, phasing the review can fragment the review, thus, the staff's feedback is preliminary and may not be based on all the information that would eventually be available in the DP. Finally, the phased review should not add more formal steps that could delay the licensees schedule for submitting a DP.

6. REFERENCES

Consolidated NMSS Decommissioning Guidance, Decommissioning Process for Materials Licensees, Vol. 1, Rev. 1, NUREG-1757, p. 13-5

Results of the License Termination Rule Analysis, SECY-03-0069, May 2, 2003, Attachment 1.

PILOT PROGRAM FOR DECOMMISSIONING NON-COMPLEX SITES

1. DESCRIPTION OF CHANGE/IMPROVEMENT

In the Staff Requirements Memorandum (SRM) dated March 31, 1997, the Commission directed the staff to carry out a Decommissioning Pilot Program. The primary objective of the pilot program was to evaluate a performance-oriented decommissioning approach applied to a few volunteer, non-complex sites (e.g., sites without sub-surface soil contamination, groundwater contamination, or on-site burial pits). Under this approach, the participating licensees simply provided their residual contamination goals to NRC and began decommissioning without first obtaining NRC approval of a DP that is required by the License Termination Rule (LTR) in 10 CFR 20 Subpart E.

2. STATUS AND PLANS FOR FUTURE IMPLEMENTATION

On June 30, 1998, the Commission approved the staff's proposed plan to implement the pilot program (SRM-SECY-98-135). The 2001 and 2002 annual updates to the Decommissioning Program (SECY-01-0156 and SECY-02-0169) described the status of the pilot program. Of the five sites that initially volunteered to participate, three of the facilities completed decommissioning under the pilot. The other two sites had to withdraw from the pilot due to discovery of subsurface soil and groundwater contamination that required more complex remediation and a DP. In December 2001, the staff informed the Commission of the final status of the pilot program. As a result of this evaluation, the staff does not intend to expand the pilot program in the future.

3. ACCOMPLISHMENTS/OUTPUTS

The key accomplishments are as follows:

1) Completed the decommissioning of three non-complex sites under the pilot program; and

2) Completed an evaluation of the pilot program results.

4. BENEFITS/OUTCOMES TO THE DECOMMISSIONING PROGRAM

The pilot program explored a different and potentially more efficient performance-based approach to the decommissioning of non-complex sites. Although the pilot program showed that performance-based decommissioning for non-complex sites can be done safely for certain qualified licensees (i.e., financial ability, technical ability, committed management, and dedicated/qualified decontamination and decommissioning teams in place), the results did not support a decision to expand the use of this approach, for a variety of reasons. One major reason is that few decommissioning sites, if any, remain that could meet the non-complex criteria (i.e., minimal contamination, no subsurface soil or groundwater contamination, and no burial areas).

5. LESSONS LEARNED

The pilot program provide site-specific experience and insights for conducting decommissioning of non-complex sites using the flexibility within the LTR and guidance. The staff also found that many licensees are not aware of the inherent flexibility in the NRC's Decommissioning Program that provides them with the opportunity to build decommissioning programs that fit their own sites' needs and allows for efficient and timely decommissioning. Therefore, information regarding flexibility should continue to be provided to licensees and other stakeholders.

6. REFERENCES

2001 Annual Update–Status of Decommissioning Program, SECY-01-0156, August 17, 2001.

2002 Annual Update–Status of Decommissioning Program, SECY-02-0169, September 18, 2002.

Consolidated Decommissioning NMSS Guidance, Decommissioning Process for Materials Licensees, NUREG-1757, Vol. 1, Rev. 1, September 2003.

Consolidated Decommissioning NMSS Guidance, Characterization, Survey, and Determination of Radiological Criteria, NUREG-1757, Vol. 2, September 2003.

TRANSFER OF SITES TO THE COMMONWEALTH OF PENNSYLVANIA

1. DESCRIPTION OF CHANGE/IMPROVEMENT

During the program evaluation time period of FY 2001-2003, the staff was anticipating the transfer of many NRC licensed complex decommissioning sites to the Commonwealth of Pennsylvania when it became an Agreement State. As noted in SECY-00-0094, the staff was assuming in April 2000 that as many as 10 sites could be transferred to Pennsylvania in or before 2002 when Pennsylvania was planning on becoming an Agreement State. However, as plans changed for Pennsylvania, the staff changed its assumption in August 2001, that the transfer would occur by FY 2004 (SECY-01-0156). The potential transfer by FY 2004 affected the staff's plans and resource estimates because, at this time, nine complex sites could have had their licenses terminated or transferred to Pennsylvania by the end of FY 2003. These nine sites represented about one third of the complex decommissioning sites the staff was addressing. Because the potential transfer would be a major change, it was included in this Program Evaluation. In addition, careful planning and coordination with Pennsylvania would be needed for such a major change to be efficient and effective for both NRC and Pennsylvania.

2. STATUS AND PLANS FOR FUTURE IMPLEMENTATION

Pennsylvania has delayed its plans for becoming an Agreement State, and, therefore, the transfer of decommissioning sites from NRC to Pennsylvania has not occurred. Because Pennsylvania's current plans are uncertain, the staff assumes that it will continue work on the sites at least through the end of FY 2006.

3. ACCOMPLISHMENTS/OUTPUTS

Not applicable

4. BENEFITS/OUTCOMES TO THE DECOMMISSIONING PROGRAM

Not applicable

5. LESSONS LEARNED

The potential transfer of a large number of sites to the Commonwealth of Pennsylvania illustrates an example of a major planning uncertainty for the Decommissioning Program that could impact future resource loading.

6. REFERENCES

2001 Annual Update–Status of Decommissioning Program, SECY-01-0156, August 17, 2001, p. 5.

INSPECTION EFFICIENCY AND COST REDUCTION FOR MATERIALS SITES

1. DESCRIPTION OF CHANGE/IMPROVEMENT

As a follow up to the budget process, future inspection efficiencies to achieve resource reductions were targeted for materials sites. Staff from Headquarters and the Regions evaluated the inspection programs and experience at materials sites in each of the Regions to determine how to increase efficiency of individual inspections and achieve the targeted resource reductions in the budget.

2. STATUS AND PLANS FOR FUTURE IMPLEMENTATION

NRC staff from Headquarters and the Regions conducted an evaluation that was completed and documented in April 11, 2001. The Regions indicated that they have sufficient flexibility within the existing guidance to implement various efficiencies on the Regional level.
As a result, the following approaches to inspection efficiency were agreed to:

1) Linking inspections to the licensee's on-site activities, so that inspectors can make side-by-side observations and measurement during licensee-conducted surveys;

2) Interacting with the licensees to ensure complete and appropriate submittals;

3) Conducting inspections only at sites that are actively being remediated;

4) Inspecting "smarter," and as a consequence, reducing on-site inspection time and limiting the scope and depth of inspections to examining key decommissioning activities.

The staff also completed an informal check of implementation in February 2002, and confirmed that implementation is ongoing.

3. ACCOMPLISHMENTS/OUTPUTS

The key accomplishment of the staff's effort to improve the efficiency of inspections are:

1) Headquarters and Regions worked together, compiled inspection experience from each Region, and documented agreed to approaches to achieve inspection efficiency.

2) Approaches for inspection efficiency were also documented in the Consolidated Decommissioning Guidance.

4. BENEFITS/OUTCOMES TO THE DECOMMISSIONING PROGRAM

The benefits to the Decommissioning Program achieving the applicable NRC Strategic Plan goal (shown below in italics) that result from inspection efficiencies are discussed below.

3.0 Make NRC activities and decisions more effective, efficient, and realistic.

The Region's inspection experience was used to compile a list of many inspection approaches that the Regional inspectors can use to make future inspections of materials sites more efficient and more effectively focused on key decommissioning activities.

5. LESSONS LEARNED

While efficiencies were identified and implemented for specific inspections, resource reductions for the overall inspection program will not occur due to the increased need and work load for material site inspections. Overall, the staff learned that resource reductions for the inspection programs could have a negative effect on the Decommission Program, and as a result, resource reallocations were made consistent with the increasing work load. Finally, early "in-process" inspections can prevent small problems from becoming large problems. Therefore, resource reductions early in the decommissioning process should be avoided because this could lead to larger and more costly problems later in decommissioning.

6. REFERENCES

Decommissioning Inspection Efficiency and Cost Reduction, Memorandum from J.T. Greeves to M.J. Virgilio, April 11, 2001.

Consolidated NMSS Decommissioning Guidance, Decommissioning Process for Materials Licensees, NUREG 1757, Vol. 1, Rev. 1, September 2003.

TRANSFER OF POWER REACTOR DECOMMISSIONING RESPONSIBILITY AND DECOMMISSIONING REACTOR BUDGET MODEL

1. DESCRIPTION OF CHANGE/IMPROVEMENT

During FY 2003 the existing delineation of responsibility for NRC's regulation of power reactor decommissioning was realigned. This resulted in defining the transfer of responsibility for project management of decommissioning power reactors from NRR to NMSS earlier in the decommissioning process than had been defined in a 1995 Memorandum of Understanding (MOU) between NRR and NMSS. Resources for Headquarters project management and Regional inspection were evaluated as part of this realignment and adjustments were made to reflect recent experience and more risk informed insights. In accordance with the realignment, a phased process was used to transition the project management responsibility for the decommissioning of 13 of the 15 NRR power reactors to NMSS by the end of January 2003.

2. STATUS AND PLANS FOR FUTURE IMPLEMENTATION

The March 10, 1995, MOU delineated the responsibilities for power reactor decommissioning between NRR and NMSS. In accordance with the MOU, NRR along with the appropriate Region, had responsibility for project management and inspection oversight for a power reactor undergoing decommissioning until the spent fuel was permanently removed from the spent fuel pool. Once the spent fuel was permanently transferred from the spent fuel pool, the facility was transferred to NMSS, and NMSS assumed responsibility for project management, and along with the appropriate Region, inspection oversight.

As a result of the 1995 MOU, NRR maintained regulatory oversight of 15 decommissioning power reactors for many years after the reactors ceased operation. These plants are either in long-term safe storage or actively working toward license termination. Thus, these 15 plants have more in common with decommissioning materials licensees temporarily storing and disposing of radioactive waste than operating power reactor.

To take advantage of NMSS' regulatory expertise in overseeing decommissioning and waste storage facilities, the staff of both NRR and NMSS developed changes to the process to transfer project management responsibility earlier in the decommissioning process from NRR to NMSS. This "road map" will ensure that a decommissioning power reactor will be in a safe, stable condition before being transferred from NRR to NMSS and that it is safely shut down and defueled. It also ensures that the plant is in a condition that minimizes any reactor-related regulatory or safety issues that may arise during and after the transfer of the facility to NMSS. The decision to realign responsibilities was based on the following activities that have been undertaken over the last few years: 1) an interoffice working group that evaluated the decommissioning inspection program and its associated budget; 2) a Decommissioning Management Board to facilitate interoffice coordination, communication, and operating strategy; and 3) insights gained from annual decommissioning counterpart meetings.
Project management responsibility of the current decommissioning power reactors was transferred by shifting 13 of the 15 NRR power reactors to NMSS under a phased approach.

The staff informed the Commission on November 8, 2002, of these changes to the transfer process and the phased approach to transfer the existing decommissioning power reactors. (SECY-02-0198). The transfer was completed in January 2003.

The transfer of 13 plants from NRR to NMSS also required realignment of both Headquarters and Regional resources. Headquarters project management resources remained constant. Regional inspection resources estimates were reduced as part of a reevaluation and refocusing of inspections at these facilities. To align the inspection effort with budgeted resources, an Inter-Office/Inter-Region Inspection Program Review working group was formed to review the Inspection Manual Chapter 2561 and scope of the core inspections being performed. The review resulted in revising the guidance to ensure consistency and reduce the differences in resource allocation among similar plants. This was accomplished through developing six categories describing the status of plant decommissioning and that are consistent with relative risk. These categories serve as a guides for resource allocation. The review also scored each of the inspection objectives in the Inspection Manual Chapter relative to NRC's performance goals. The inspection objectives with the highest score receive the highest priority and are included in the core program while lower scoring objectives receive less emphasis and are considered discretionary. Finally, the hours assigned to each inspection objective were reviewed and revised.

3. ACCOMPLISHMENTS/OUTPUTS

The key accomplishments are as follows:

1) Transferred the project management responsibility for 13 of 15 power reactors currently in decommissioning from NRR to NMSS;

2) Developed a process, or "road map", to transfer plants from NRR oversight to NMSS in the future; and

3) Agreed to revised resource estimates for project management and inspections and revised the core inspection requirements using risk ranking.

4. BENEFITS/OUTCOMES TO THE DECOMMISSIONING PROGRAM

The benefits to the Decommissioning Program achieving the applicable NRC Strategic Plan goal (shown below in italics) that result from the transfer of power reactor decommissioning are discussed below.

3.0 Make NRC activities and decisions more effective, efficient, and realistic.

The key outcome of realignment of power reactor decommissioning is the elimination of the need for redundant licensing project managers and consolidation into one office of the staff working on commercial nuclear power reactor decommissioning. This improvement in efficiency and effectiveness can be achieved without affecting licensees. Realignment of responsibilities also maximizes the decommissioning review capability of NMSS and allows NRR to focus its resources on activities associated with operating reactors.

5. LESSONS LEARNED

None at this time.

6. REFERENCES

IMC 2561, Decommissioning Power Reactor Inspection Program, Change in Core Inspection Requirements, memorandum from B. Boger and J. Greeves to G. Pangburn, D. Collins, M. Dapas, and D. Chamberlain, October 17, 2002.

Changes in Staff Regulatory Oversight of Decommissioning Commercial Nuclear Power Reactor Plants, SECY-02-0198, November 8, 2002.

FINANCIAL ASSURANCE AND DECOMMISSIONING FUNDING ACTIVITIES

1. DESCRIPTION OF CHANGE/IMPROVEMENT

This evaluation addresses two improvements related to financial assurance and sufficiency of licensee decommissioning funding. Both improvements are intended to mitigate potential shortfalls in licensee funding for site decommissioning that could lead to the need for Federal funding. The first improvement addresses individual existing decommissioning sites with inadequate financial assurance and funding limitations. The second improvement focuses on resolving general types of financial risks to minimize financial assurance problems at both exiting and future decommissioning sites.

2. STATUS AND PLANS FOR FUTURE IMPLEMENTATION

Existing Sites with Inadequate Financial Assurance

SECY-00-0180 provided an initial response in 2000 to the Commission request to evaluate the potential need for Federal funding of formerly licensed sites in non-Agreement States and currently licensed sites undergoing decommissioning. In 2002, as a follow up to SECY-00-0180, the staff provided the Commission with the results of a more detailed financial analysis of 15 existing decommissioning sites with inadequate financial assurance (SECY-02-0079). For each site this analysis identified: 1) potential remediation costs; 2) the amount of financial assurance; 3) the capability of the responsible party to fund the cost of remediation from assets outside of financial assurance; and 4) the possibility of another agency (State or Federal) directing remediation if the NRC decides to pursue Congressional funding for site cleanup. This analysis concluded that only one site lacked adequate financial assurance and is incapable of funding site remediation. Fourteen other sites were identified that have inadequate financial assurance and varying degrees of capability for funding remediation. This study also recommended that the Commission should not seek a Congressional appropriation at this time. Rather, the staff recommended implementing a new aggressive regulatory posture for these sites and bring the sites to closure without Federal funding.

Subsequently, the Commission approved and the staff has implemented the aggressive posture for the 15 sites. In October 2003, the staff will give the Commission a progress report and path forward for the 15 decommissioning sites. The staff plans on continuing the aggressive regulatory posture and maintaining proactive interactions with the sites in the future.

Resolving Financial Risks for Existing and Future Sites

NRC staff experience applying the financial assurance regulations has resulted in many lessons-learned that can be applied to improve the regulations and reduce the risks to decommissioning financial assurance. Based on this experience, the staff identified the following risks in the LTR Analysis (SECY-03-0069) that could cause shortfalls in decommissioning funding: 1) restricted release assumption causes underestimation of decommissioning costs; 2) operational indicators of increasing costs; 3) unavailability of funds

in bankruptcy; 4) inadequate financial disclosure; 5) reaching assets after corporate reorganization; 6) investment losses reducing trust account balances; and 7) increased decommissioning cost due to accidental release. For each of these financial risks, the staff evaluated options and made recommendations for both existing and future licensees. If approved by the Commission, these recommendations could be implemented using a rulemaking, new guidance, inspection and enforcement guidance, and informing stakeholders.

3. ACCOMPLISHMENTS/OUTPUTS

The key accomplishments are as follows:

1) Financial analysis and recommendation of aggressive regulatory posture for 15 sites in SECY-02-0079.

2) Commission approval and staff implementation of aggressive regulatory posture at 15 sites; and

3) Identified types of financial risks for both existing and future decommissioning sites and recommended to the Commission regulatory actions to mitigate risks in SECY-03-0069.

4. BENEFITS/OUTCOMES TO THE DECOMMISSIONING PROGRAM

The benefits to the Decommissioning Program achieving the applicable NRC Strategic Plan goal (shown below in italics) that result from the financial assurance improvements are discussed below.

4.0 Reduced unnecessary regulatory burden on stakeholders

One outcome is that the staff is implementing a more aggressive regulatory posture to resolve the financial problems of existing individual decommissioning sites ("legacy" sites). Implementation will continue until decommissioning is completed at these sites without the need for Federal funding of decommissioning. Decommissioning should be payed for by the licensees or owners and thus Federal funding of decommissioning will not be necessary.

Similarly, the recommended regulatory actions to address general financial risks are the first step toward an eventual outcome of strengthening NRC's regulations for financial assurance to effectively reduce financial risks that could cause shortfalls in decommissioning funding, thus minimizing the potential for future "legacy" site that might need Federal funding.

5. LESSONS LEARNED

The staff has the following lessons learned:

1) The more aggressive posture for existing sites illustrates how the staff has evaluated sites for financial risks and prioritized its licensing activities and resources to focus on resolution of problems at individual sites. This is a risk informed, graded approach to

staff licensing reviews based on financial risk that is a useful way to allocate staff resources to use them effectively to solve decommissioning problems.

2) “Legacy” sites ned special attention with regard to financial information. The standard approach is not adequate for these sites.

3) Non-licensed sites pose a special “financial risk” because of their lack of financial assurance.

6. REFERENCES

Issues and Funding Options to Facilitate Remediation of Decommissioning Sites in Non-Agreement States, SECY-00-0180, August 23, 2000.

Financial Analysis and Recommendations to Facilitate Remediation of Decommissioning Sites in Non-Agreement States, SECY-02-0079, May 13, 2002.

Initial Analysis and Plan for Addressing License Termination Rule Issues, SECY-02-0177, October 1, 2002.

Results of the License Termination Rule Analysis, SECY-03-0069, May 2, 2003.

REGIONAL LABORATORY EVALUATION

1. DESCRIPTION OF CHANGE/IMPROVEMENT

In 1995, the DWM evaluated the analytical needs of NRC and determined the necessary level of regional and contract laboratory support based on the projected type and number of samples and cost effectiveness of sample analysis. In a report to the Deputy Executive Director for Nuclear Material Safety, Safeguards and Operational Support (EDO), dated May 14, 1996, (Transition Plan) NMSS recommended that NRC: (1) maintain the fixed and mobile laboratory capabilities in Regions I and III; (2) maintain minimal analytical capabilities (analysis of smear samples) in Regions II and IV; (3) continue the contract with the Oak Ridge Institute for Science and Education (ORISE) for complex radiochemical analytical support; and (4) establish laboratory traceability to the National Institute of Science and Technology (NIST) and participate in the DOE quality assurance (QA) program for regional and contract laboratories. However, the report also states that maximum efficiency would occur with one centralized NRC laboratory, but the best transition would be to evaluate the efficiency of two regional laboratories before further consolidation. The report also states that the cost effectiveness of the fixed and mobile labs should be reevaluated to see if additional streamlining is appropriate in the future.

In 1997, NMSS directed DWM to develop a QA program for the regional laboratories, to assure that the laboratories provide analytical services and measurements that are of known quality, thoroughly and verifiably documented, and defensible in support of regulatory decisions. On August 6, 1998, NMSS issued Policy and Procedures Letter 1-64, requesting that the Regions implement the Quality Assurance Manual for Office of Nuclear Material Safety and Safeguards, Revision 2, dated August 4, 1998 (NMSS QA Manual). In addition, NMSS/DWM entered into a contract with DOE's Radiological Environmental Sciences Laboratory (RESL) to conduct QA audits of the Regional and ORISE laboratories and to conduct inter-laboratory comparison tests to NIST traceable standards. In accordance with the NMSS QA Manual, RESL conducted annual audits of the Regional and ORISE laboratories through 2001.

In FY2001, the DWM conducted a review of the Decommissioning Program to identify ways to improve efficiency and reduce costs. DWM re-evaluated the cost effectiveness of maintaining fixed and mobile laboratories in the Regions and a laboratory options paper was prepared for management consideration. Headquarters and Regional management discussed the various laboratory consolidation options, and a cost comparison was prepared for the following options: (1) consolidate NRC laboratories into a single laboratory in Region 1 with no analytical capabilities in other Regions; (2) consolidate NRC laboratories into a single laboratory in Region 1 with limited analytical capabilities (screening) in other Regions; and (3) cease all NRC laboratory operations and rely on ORISE for sample analysis.

Factors considered in the analysis included; the cost of maintaining a fixed and mobile laboratory, the costs for sample analysis in the Regions and at ORISE, FTE's required to run and maintain a Regional laboratory, and the costs associated with conducting QA audits at the laboratories. As a result of the review, the staff determined that it was possible to improve

efficiency and reduce Decommissioning program costs by ceasing Regional laboratory operations associated with analyzing environmental samples from sites undergoing decommissioning and, instead, relying on the Oak Ridge Institute for Science and Education (ORISE) and Environmental Measurements Laboratory (EML) for analytical capability. Therefore, the regional and mobile laboratories were permanently shutdown.

2. STATUS AND PLANS FOR FUTURE IMPLEMENTATION

The Regional laboratories were permanently shutdown in 2002. Currently, there are no plans to re-open the Regional laboratories. ORISE will continue to provide analytical services and measurements in support of DWM and the Regions.

3. ACCOMPLISHMENTS/OUTPUTS

The key accomplishments are as follows:

1) Conducted an in-depth review, including a cost analysis, of the most cost effective and efficient option for conducting laboratory analyses or radiological samples and decided to cease all NRC laboratory operations and rely on ORISE for sample analysis.

2) Closing the Regional laboratories resulted in making four FTE available for re-programming to other higher priority decommissioning activities. Cost savings of approximately $435K were realized when compared to maintaining mobile and fixed laboratory capability in Region I, with screening capability in Regions II and III.

4. BENEFITS/OUTCOMES TO THE DECOMMISSIONING PROGRAM

The benefits to the Decommissioning Program achieving the applicable NRC Strategic Plan goals (shown below in italics) that result from the Regional Laboratory evaluation are discussed below.

3.0 Make NRC activities and decisions more effective, efficient, and realistic.

The management assessment of the Regional laboratories resulted in a significant increase in decommissioning program efficiency. As a result of the analysis, DWM was able to reprogram the laboratories 4 FTE's to other higher priority decommissioning activities. Laboratory funding was reprogrammed to the ORISE contract to cover the costs associated with the increased volume of samples to be analyzed.

4.0 Reduce unnecessary regulatory burden on stakeholders.

One of the major benefits resulting from the management assessment of the Regional laboratories was a significant decrease in the costs associated with the analyzing samples taken from material licensees during inspections and confirmatory surveys, thereby reducing costs to the licensees.

5. LESSONS LEARNED

NA

6. REFERENCES

U.S. Nuclear Regulatory Commission, *Performance and Accountability Report, Fiscal Year 2001,* NUREG-1542, vol. 7, pp. 50-51.

NRC/EPA MEMORANDUM OR UNDERSTANDING FOR CONSULTATION AND FINALITY ON DECOMMISSIONING AND DECONTAMINATION OF CONTAMINATED SITES

1. DESCRIPTION OF CHANGE/IMPROVEMENT

Some nuclear facilities have the potential to be regulated by both NRC and EPA upon decommissioning. For example, a site that has completed decommissioning under NRC's licensing regulations might still be subject to EPA clean-up actions if EPA determines that the decommissioning criteria were not protective. The House Appropriations Committee in 1999 noted that while it has been EPA's long-standing policy to defer to the NRC for cleanup of NRC's licensed sites, stakeholders have raised concern regarding the authority and finality of NRC licensing decisions, the duration and costs of site cleanup, and the potential future liability of parties associated with affected sites. Therefore, the House Appropriations Committee encouraged both agencies to enter into a Memorandum of Understanding (MOU) which clarifies the circumstances for EPA's involvement at NRC sites when requested by NRC.

2. STATUS AND PLANS FOR FUTURE IMPLEMENTATION

On October 9, 2002, NRC and EPA completed an MOU on "Consultation and Finality on Decommissioning and Decontamination of Contaminated Sites." The MOU establishes a basic framework for the relationship of the agencies in order to facilitate decision-making. It continues a basic policy of EPA deferral to NRC decision-making in the decommissioning of NRC-licensed sites except in certain circumstances, and establishes the procedures to govern the relationship between the agencies when those circumstances arise.

Immediately after signature of the MOU, NRC and EPA staffs completed a number of outreach activities, including issuing press releases and holding a public meeting. Subsequently, NRC staff completed a review of currently decommissioning NRC sites, to determine which sites are likely to meet or exceed the criteria outlined in the MOU. Having completed this initial review of NRC sites, staff is currently prepared to begin site-specific consultation with EPA under the MOU.

3. ACCOMPLISHMENTS/OUTPUTS

The key accomplishment of the staff's efforts are as follows:

1) Signed an MOU on October 9, 2002.

4. BENEFITS/OUTCOMES TO THE DECOMMISSIONING PROGRAM

The benefits/outcomes to the Decommissioning Program achieving the applicable NRC Strategic Plan goal (shown below in italics) are discussed below.

4.0 Reduce unnecessary regulatory burden on stakeholders

The completion of the MOU should facilitate consultation between EPA and NRC, which can improve decision-making on decommissioning. This improvement could minimize the potential for dual regulation and resulting increase in the cost of decommissioning without a commensurate increase in the level of protection.

5. LESSONS LEARNED

Because the MOU does not fully meet the intent of the House Appropriations Committee, NRC will continue to seek legislation that would eliminate the possibility of dual regulation of Atomic Energy Act contaminants for all decommissioning licensees.

6. REFERENCES

Memorandum of Understanding between the Environmental Protection Agency and the Nuclear Regulatory Commission, Consultation and Finality on Decommissioning and Decontamination of Contaminated Sites, October 9, 2002.

House Committee Appropriations Report, 106-286, August 3, 1999.

STAKEHOLDER COMMUNICATION AND INVOLVEMENT IMPROVEMENTS

STAKEHOLDER/PUBLIC OUTREACH IMPROVEMENTS

1. DESCRIPTION OF CHANGE/IMPROVEMENT

Staff of the NMSS Decommissioning Program interact with the stakeholders in several ways including public meetings at individual sites, stakeholder workshops, special plans and reports, stakeholder participation in guidance development, and staff participation in national and international conferences and meetings. During the FY 2001-FY 2003 evaluation period, several improvements were made to these public interactions as described below.

2. STATUS AND PLANS FOR FUTURE IMPLEMENTATION

Public meetings

The staff continued its long-standing Agency procedure for making all of its meetings with licensees public, giving advanced notice, and providing publically available meeting summaries. In addition, the staff implemented an Agency improvement to use public meeting feedback forms (NRC Form 659) to obtain written evaluations of the meetings from the public. Staff project managers and staff responsible for tracking public meetings review the feedback forms and if major concerns are identified, these are discussed with management. The actions associated with each public meeting are tracked in the staff Operating Plan and reviewed by management to assure that procedures are being implemented.

Stakeholder workshops

On November 8-9, 2000, staff sponsored a workshop on decommissioning. The purpose was to provide a forum for industry and non-industry stakeholders to discuss, with NRC staff, NRC's processes and procedures for managing the decommissioning of nuclear facilities, as well as current issues facing the staff, and licensees, as they implement NRC's License Termination Rule (LTR). To ensure that both industry and non-industry stakeholders were represented at the workshop, staff invited representatives from the nuclear industry, various public interest groups, and other Federal and State agencies with responsibilities for regulating the use of radioactive material, to participate in the roundtable discussions. Approximately 130 individuals attended the workshop.

Other public meetings were held to gather input from stakeholders on important activities. On November 1, 2000, NRC staff held a public meeting on the Pilot Program to discuss lessons learned among participants, industry, and State representatives. Another meeting was held on June 1, 2001, to discuss the staff's plans for the NMSS Consolidated Decommissioning Guidance project. The staff explained the scope of the project, the business process redesign techniques to be used, coordination with industry efforts to standardize guidance, and ways to receive stakeholder input. The meeting was attended by representatives of licensees, industry groups, public interest groups, and a State agency. Another meeting was held on September 4, 2002, to discuss guidance on effective public involvement (see description in next section).

Development of plans and guidance

In March 2001, the staff completed development of a Communication Plan for Regulation of Decommissioning consistent with the May 1, 2000, Agency guidance. The Plan provides guidance for developing specific communication plans for sits undergoing decommissioning as well as specific activities associated with the regulation of decommissioning. The Plan discusses several topics pertinent to developing site-specific communication plans including: cross cutting considerations; identification of stakeholders; applications of communications tools and techniques; and example costs of implementing the communication plan. The Plan was distributed to all NRC staff working in the decommissioning program in June 2001, and training sessions on the implemention of the Plan were conducted in late summer 2001. Further guidance was prepared in November 2001 and an example site-specific communication plan was given to the staff in January 2002.

Subsequent to the guidance and training for the Communication Plan for Regulation of Decommissioning, the staff prepared and began implementing site-specific communication plans for all Site Decommissioning Management Plan and complex sites and the 13 power reactors transferred from NRR to NMSS in FY 2003. These plans are useful tools to ensure that the staff are identifying and reaching the appropriate stakeholders and to help staff focus on messages NRC wants to convey. Each plan includes: 1) history and background of the site; 2) list of stakeholders; and 3) planned communication activities and schedules.

The staff also initiated a study by the U.S. Institute for Environmental Conflict Resolution (USIECR) to further enhance public participation in the decommissioning process. This study resulted in a “best practices” report that gives guidance to both staff and licensees for public involvement in general, with specific application to restricted-use decommissioning of NRC-licensed facilities. The guidance was based, in part, on information obtained from stakeholders, at NRC licensed sites, who have experience with public involvement concerning radioactive contamination. This project also resulted in establishing a list of qualified and independent public involvement facilitators who could assist NRC licensees in obtaining public involvement. Based on this study, NRC then had USIECR conduct a workshop in September 2002 to discuss best practices with licensees, NRC staff, and Agreement State regulators.

Stakeholder participation in NRC guidance development

In 2001, the staff began 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 will be met. This shared view should provide opportunities for standardized approaches of developing, reviewing, approving, and implementing License Termination Plans for the decommissioning of power reactors. Some of the issues also are applicable to DP s for materials sites. In an effort to clarify existing guidance associated with the LTR, NRC and NEI adopted an approach whereby the NEI License Termination Task Force generated questions and answers and submited them to NRC for review. Approved questions and answers have been included in the NMSS Consolidated Decommissioning Guidance and published in September 2003.

Stakeholders were invited to participated in the NMSS Consolidated Decommissioning Guidance project to provide a perspective on stakeholder perceptions and understanding of the

development and implementation of NRC guidance. Representatives from States contributed both on the writing teams and review teams.

Staff participation in national and international conferences and meetings

Staff participate in a variety of symposia and meetings sponsored by a variety of societal and private groups involved with aspects of decommissioning. Examples include Waste Management annual conferences, American Nuclear Society conferences, and Health Physics Society meetings. Papers presented and informal discussions at these meetings help communicate to the technical, regulator, and industry representatives NRC's decommissioning regulations, issues, and lessons-learned, as well as providing the opportunity to compare staff experience with similar programs.

Staff also improved communication, collaboration, and information sharing among Federal agencies though committee involvement such as ISCORS and the Environmental Council of States Long-Term Stewardship subcommittee.

Staff also increased its involvement 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.

Future activities

The staff will continue to implement the improvements described above. The staff also plans on enhancing the information on the NRC Decommissioning Webpage by posting decommissioning site summaries and site-specific communication plans

3. ACCOMPLISHMENTS/OUTPUTS

The key accomplishments are as follows:

1) Conducted four stakeholder workshops on the decommissioning process and issues, pilot program lessons learned, plans for the Consolidated Decommissioning Guidance development, and guidance for effective public involvement in decommissioning;

2) Developed and implemented a Communication Plan for Regulation of Decommissioning and site-specific communication plans for each power reactor and SDMP/complex site;

3) Developed guidance for enhanced public involvement for decommissioning and established a list of qualified and independent facilitators for licensees to use. Held training for stakeholders and staff;

4) Involved stakeholders in the writing and review of the Consolidated Decommissioning Guidance; and

5) Continued to participate in national and international conferences and meetings.

4. BENEFITS/OUTCOMES TO THE DECOMMISSIONING PROGRAM

The benefits to the Decommissioning Program achieving the applicable NRC Strategic Plan goals (shown below in italics) that result from the improvements to public outreach are discussed below.

2.0 Increase Public Confidence

Conducting the decommissioning workshops and developing communication plans increased the attention and importance toward effective stakeholder involvement. This guidance also provided knowledge and tools for the staff and licensees to use. Site-specific plans help focus the staff on the appropriate stakeholders and their needs. The staff expects that these planning efforts, when implemented over time, will improve stakeholder understanding of the decommissioning regulatory process and issues as well as provide more opportunities for stakeholders to give input to the process. Project managers have noted that comments from stakeholders on Form 659 are generally positive with respect to NRCs' efforts to notice public meetings and be responsive to stakeholders. The bulk of negative comments usually have to do with the inconviences of getting through NRC security for public meetings held at NRC Headquarters.

Exchange of regulatory information and lessons learned both nationally and internationally provides opportunities to collaborate on issues of common interest and seek more effective solutions.

4.0 Reduce unnecessary regulatory burden on stakeholders

The outcome of staff activities included providing opportunities for stakeholders to be actively involveed in developing regulatory guidance. This involvement brought user experience and perspective to complement the staff's experience. The staff also sought stakeholder feedback at workshops on the LTR and decommissioning process.

5. LESSONS LEARNED

Effective stakeholder involvement involves many types of activities and significant resources because of the diversity of stakeholders involved with decommissioning. The benefits from the resources expended are not always immediately apparent or measurable. As a result these activities can conflict with high priority site-specific activities that have more immediate and tangible benefits.

6. REFERENCES

Communication Activities, Memorandum from Travers to staff, May 1, 2000.

Regulation of Decommissioning Communication Plan, March 26, 2001.

2001 Annual Update–Status of Decommissioning Program, SECY-01-0156, August 17, 2001.

2002 Annual Update–Status of Decommissioning Program, SECY-02-0169, September 18, 2002.

Guidance for Developing Site-Specific Communications Plans, Note from Camper to Decommissioning Branch staff, November 30, 2001.

Example Site-Specific Communication Plan, Note from Camper to Decommissioning Branch staff, January 17, 2002.