

May 14, 2010

MEMORANDUM TO: Chairman Jaczko
Commissioner Svinicki
Commissioner Apostolakis
Commissioner Magwood
Commissioner Ostendorff

FROM: Catherine Haney, Director **/RA/**
Office of Nuclear Material Safety and Safeguards

SUBJECT: ANNUAL UPDATE ON REPROCESSING ACTIVITIES—TIMELINE
FOR COMPLETION OF REGULATORY FRAMEWORK

In 2008 and 2009, the staff of the U.S. Nuclear Regulatory Commission (NRC) provided the Commission with information about the agency's activities to develop the regulatory framework for licensing reprocessing facilities. SECY-08-0134, "Regulatory Structure for Spent Fuel Reprocessing," dated September 12, 2008, discussed a necessary shift in focus from the U.S. Department of Energy-led reprocessing initiatives to industry-led initiatives. As a result of this shift, the NRC staff identified additional activities needed to revise the regulatory framework for reprocessing and established an initial schedule to complete these revisions in time to support the industry's proposed timeframe for submitting a license application for a commercial reprocessing facility.

The staff performed a regulatory gap analysis and summarized it in SECY-09-0082, "Update on Reprocessing Regulatory Framework—Summary of Gap Analysis," dated May 28, 2009. Although the staff intends to revise the regulatory framework to be technology-neutral and risk-informed and performance-based where appropriate, the gap analysis principally considered processes and approaches associated with industrially mature reprocessing technologies. SECY-09-0082 described this approach including insights into, and the basis for, the limitations of the initial regulatory framework for advanced fuel cycle technologies and fast reactors.

In the remainder of this memorandum, the staff will update the Commission on the status of regulatory basis (formerly referred to as "technical basis") development and provide a new target date for its completion. In addition, staff is estimating completion dates for rulemaking, and other supporting activities necessary for licensing and regulating reprocessing facilities, if the Commission decides to proceed with rulemaking.

At this stage, development of the regulatory framework comprises three main areas of activity: (1) public outreach, (2) international knowledge sharing, and (3) development of the regulatory basis and subsequent rule. These three areas are interdependent and essential for a thorough regulatory framework.

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For public outreach, the staff is considering several successful approaches that were recently applied for other rulemaking efforts, such as the public workshops conducted for the ongoing depleted uranium and unique waste streams rulemaking effort. These approaches included outreach to affected Native American Tribal Governments, stakeholders, and other interested members of the public with the purpose of discussing issues relevant to them. In developing the regulatory basis, the staff has identified technical areas and topics that will require extensive stakeholder involvement and feedback. These topics relate to the regulatory gaps in SECY-09-0082 and will broadly cover four main areas: (1) reprocessing waste-related issues, (2) physical protection and material control and accounting, (3) risk, and (4) licensing issues. The staff is planning public workshops for these discussions and intends to conduct workshops in the fall of calendar year 2010 in different geographic locales to accommodate a variety of stakeholders. Additional workshops may be warranted depending on stakeholder interest.

To better inform the regulatory basis, the staff has also engaged its international counterparts in countries having operating experience with reprocessing facilities (i.e., France, Japan, and the United Kingdom). The NRC staff has participated in regulatory and technical information-sharing sessions with safety authorities and operators in France, the United Kingdom, and Japan. These sessions have focused on a variety of technical areas that are relevant for reprocessing facilities. In the past several years, the staff has visited reprocessing facilities in France and the United Kingdom; gaining operational and regulatory insights from those most experienced with commercial reprocessing. Most recently in December 2009, the staff discussed the areas of risk assessment and material control and accounting with its counterparts in Japan. This interaction provided the staff with valuable insights for its current work in these areas. The agency is planning a similar information-sharing session in France for September 2010 that will include discussions with French counterparts on waste management and other topics relevant to staff's ongoing efforts to revise the regulatory framework for reprocessing.

In the next phase of the regulatory framework development, the staff will complete the regulatory basis document to support rulemaking. In SECY-09-0082, the staff indicated that it could complete the regulatory basis development in 2010. However, the staff also noted that the activity would (1) be more comprehensive than originally envisioned, (2) involve resolution of several complex technical and policy issues, (3) entail the development of new and substantive regulatory guidance, (4) require extensive stakeholder involvement, and (5) possibly require additional resources.

In both SECY-08-0134 and SECY-09-0082, the staff indicated that progress on the regulatory development would be commensurate with available resources and that the schedule would be delayed or deferred if the needed funds were not provided. Although shortfall and reprogramming requests have provided resources for progress on the regulatory framework in fiscal years (FY) 2009 and FY 2010, the budget process has not provided for continuity of effort nor provided an opportunity to accelerate staff activities as originally envisioned. The FY 2011 budget request addresses these items and provides the necessary resources to make significant progress on this effort. As a result, staff has revised the schedule appropriately.

Resource levels for FY 2011 will provide for a more predictable and continuous level of effort on the regulatory development. Staff is estimating a schedule for completing the rulemaking and supporting activities which is dependent upon several factors, including, but not limited to, receiving future budget requests. The Office of Federal and State Materials and Environmental Management Programs (FSME) resources are to gather information and prepare a report that examines the environmental concerns associated with potential reprocessing facilities to assist in the development of the reprocessing regulatory framework. The staff now anticipates that it

can complete a draft regulatory basis by September 2011. Upon completion of the regulatory basis, FSME will be responsible for the rulemaking and associated supporting activities. If directed by the Commission to proceed in establishing the regulatory framework for reprocessing facilities, the staff's current estimates indicate that it may be possible to complete the rule and associated activities by the end of 2015. The nuclear industry continues to support continued progress on developing the revised regulatory framework for reprocessing and has indicated that a revised framework by 2015 would continue to support the pace of industry activities in this area.

The following table indicates available resources in FY 2010 and requested resources for FY 2011, including shortfalls and reprogramming. The completion dates for the regulatory basis and the report that examines the environmental concerns are informed by consideration of the resources tabulated below. Resources to support the schedule for activities beyond FY 2011 will be addressed during the applicable Planning, Budgeting and Performance Management Process.

| Office | FY 2010 Base Budget | | Reprogram within FY 2010 Base Budget | | Requested through the FY 2010 Shortfall List | | FY 2011 Current Estimate Base Budget | | Requested through the FY 2011 Shortfall List | |
|--------------|---------------------------|------------|--|----------|--|------------|--|--------------|--|------------|
| | FTE | CS \$ | FTE | CS \$ | FTE | CS \$ | FTE | CS \$ | FTE | CS \$ |
| NMSS | 0.0 | 0 | 1.0 | 0 | 0.0 | 0 | 7.1 | 475 | 0.0 | 0 |
| FSME | 0.2 | 750 | 0.0 | 0 | 0.0 | 0 | 3.7 | 1,060 | 0.0 | 0 |
| RES | 0.0 | 0 | 0.2 | 0 | 0.0 | 300 | 1.0 | 150 | 0.0 | 150 |
| NSIR | 0.0 | 0 | 0.2 | 0 | 0.0 | 0 | 0.3 | 0 | 0.0 | 0 |
| OGC | 0.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.6 | 0 | 0.0 | 0 |
| TOTAL | 0.8 | 750 | 1.4 | 0 | 0.0 | 300 | 12.7 | 1,685 | 0.0 | 150 |

The Office of Nuclear Material Safety and Safeguards is preparing an integrated strategy for regulating spent fuel. The three main areas of this integrated strategy consist of: 1) long term storage and transportation, 2) reprocessing, and 3) alternative disposal options. Staff is integrating the reprocessing regulatory development with these other areas to determine a comprehensive strategy that provides the Agency flexibility to better respond to a changing national policy relating to spent fuel management.

As development of the regulatory basis proceeds, the staff has determined that the regulatory gaps involve many complex policy and technical issues. As noted above, the NRC staff is seeking input from stakeholders, and will be conducting public workshops this Fall. The staff anticipates that stakeholder perspectives will provide significant input into its process. Currently, the estimated project timeline accommodates the extensive stakeholder interest that the staff is forecasting. Staff will modify future budget requests to accommodate any changes that result in currently planned activities.

In SRM-SECY-07-0081, dated June 27, 2007, the Commission directed the staff to provide a gap analysis and a regulatory basis document with recommended options on a path forward and an associated rulemaking plan, if appropriate. Based on the extent of the timeline and uncertainty in future appropriations and industry interest, staff intends to communicate future progress on the regulatory basis and overall framework via an annual update that is currently

provided to the Commission. Once the regulatory basis is complete, the staff will provide the Commission with a paper that will discuss options for moving forward with a revised regulatory framework for reprocessing.

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