

POLICY ISSUE
(Notation Vote)

April 28, 2005

SECY-05-0073

FOR: The Commissioners

FROM: Luis A. Reyes
Executive Director for Operations /RA/

SUBJECT: IMPLEMENTATION OF NEW U.S. NUCLEAR REGULATORY
COMMISSION RESPONSIBILITIES UNDER THE NATIONAL
DEFENSE AUTHORIZATION ACT OF 2005 IN REVIEWING WASTE
DETERMINATIONS FOR THE U.S. DEPARTMENT OF ENERGY

PURPOSE:

To request Commission approval of the staff's plans for implementing the staff's new responsibilities under the Ronald W. Reagan National Defense Authorization Act of Fiscal Year 2005 (NDAA), and to inform the Commission of related technical reviews of waste determinations for the U.S. Department of Energy (DOE).

SUMMARY:

The NDAA gives the U.S. Nuclear Regulatory Commission (NRC) responsibility for providing technical consultation and monitoring for waste determinations made by DOE in South Carolina and Idaho for waste associated with the reprocessing of spent fuel. The staff is involved in similar reviews at Hanford and at West Valley. The staff will be involved in a significant number of waste determination reviews for DOE over the next several years. This paper describes the staff's plans for implementing its new responsibilities under the NDAA, including the proposed schedule, resources, approach to technical issues, and stakeholder interactions, and the staff's plans for activities with regard to similar reviews at Hanford and West Valley.

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BACKGROUND:

The NDAA was passed by Congress on October 9, 2004, and signed by the President on October 28, 2004. Section 3116 of the NDAA allows DOE to continue to use a process similar to its waste-incident-to-reprocessing (WIR) process included in DOE Order 435.1 to determine that waste is not HLW (see attachment for detailed historical information regarding WIR). However, the NDAA is applicable only to South Carolina and Idaho and does not apply to waste transported out of those States. The NDAA requires that (1) DOE consult with NRC on its non-HLW determinations and plans and (2) NRC, in consultation with the State, monitor disposal actions taken by DOE for the purpose of assessing compliance with NRC regulations in 10 CFR Part 61, Subpart C. If the NRC determines that any disposal actions taken by DOE are not in compliance, the NDAA requires NRC to inform DOE, the affected State, and congressional subcommittees. In addition, the NDAA provides for judicial review of any failure of the NRC to carry out its monitoring responsibilities.

Section 3146 of the NDAA requires that the National Academy of Sciences (NAS) undertake a study of DOE's plans for management of those waste streams, resulting from the reprocessing of spent nuclear fuel and stored in tanks, that are greater than Class C and that DOE does not intend to send to a high-level waste repository for disposal. The first meeting of the NAS committee was held on March 7, 2005, for the purpose of determining the scope of the study and obtaining relevant background information.

On February 28, 2005, DOE submitted to NRC its first non-HLW determination under the NDAA. This first determination is for salt waste processing and disposal at the Savannah River Site (SRS), and the staff is conducting its technical review. NRC staff has also interfaced with the States of South Carolina and Idaho to begin discussions of how monitoring activities will be conducted.

In addition, prior to the passage of the NDAA, the NRC and DOE's Office of River Protection (ORP) at Hanford had established an Interagency Agreement (IA) for NRC technical review of DOE's tank waste retrieval actions for Tank C-106. The staff transmitted its Requests for Additional Information (RAIs) on the first part of the review on January 19, 2005. The ORP intends to submit part of its performance assessment (PA) for review in April 2005. This schedule may be impacted if DOE-HQ decides that the Hanford review is a lower priority than the other waste determination reviews.

NRC will also be reviewing WIR determinations for the West Valley site under the West Valley Demonstration Project Act and the Commission's Final West Valley Policy Statement. The staff has requested that the impacts of any WIR determinations be included in DOE's Draft Environmental Impact Statement for West Valley, which is scheduled to be transmitted to NRC for review in August 2005, and that the technical details of DOE's WIR determination be included with the site's Decommissioning Plan, currently scheduled for submittal in mid-2006.

DISCUSSION:

New NRC Responsibilities Under the NDAA

In the past, DOE has periodically requested that NRC review certain WIR determinations. These requests were initiated by DOE, and NRC's reviews were performed in an advisory manner and did not constitute regulatory approval. Previous reviews are discussed in detail in the attachment.

The NDAA requires use of the following criteria for determining that waste is not HLW:

1. The waste does not require permanent isolation in a deep geologic repository for spent fuel or HLW;
2. The waste has had highly radioactive radionuclides removed to the maximum extent practical; and
 - A. Does not exceed concentration limits for Class C low-level waste and will be disposed of in compliance with the performance objectives in 10 CFR 61, Subpart C; or
 - B. Exceeds concentration limits for Class C LLW but will be disposed of in compliance with the performance objectives of 10 CFR 61, Subpart C, and pursuant to plans developed by DOE in consultation with the NRC.

These criteria are somewhat different than those used by the staff in past reviews. Therefore, there will be some differences in the reviews performed under the NDAA. For example, as a result of Commission direction in 2000 regarding a staff review of SRS tank closure (SECY-99-0284), the staff has not been assessing whether WIR meets Class C concentrations. This will therefore be a new area of assessment in relation to staff review of non-HLW determinations. If waste exceeds Class C concentrations, the NDAA states that DOE must consult with NRC during the development of its disposal plans. The DOE has not previously consulted with NRC during the development of its specific disposal plans; therefore this is also a new area of assessment in relation to non-HLW determinations.

In addition, the staff must, in coordination with the State, monitor DOE's disposal actions to assess compliance with the performance objectives of 10 CFR Part 61, Subpart C. If DOE is found to not be in compliance, NRC must report its findings to Congress, the State, and DOE. This monitoring and noncompliance reporting are new areas of activity for the NRC for non-HLW determinations.

Staff Approach to Satisfying NDAA Responsibilities

The staff has begun to meet the responsibilities prescribed by the NDAA and is establishing a framework for performing these activities over the long term. The staff's implementation plans are discussed in detail in the attachment. The NDAA requires that DOE reimburse NRC for NRC's activities in FY05; therefore, the staff has established an Interagency Agreement to provide for funding. The staff is working with DOE staff to develop a Memorandum of Understanding (MOU) on the responsibilities and mechanisms for implementing the requirements of the NDAA.

In carrying out its responsibilities, the staff intends to ensure that stakeholders are appropriately informed of NRC processes and activities. DOE waste determinations will be made publicly available, as will NRC RAIs and final reports. The staff believes that the waste determination

review process under the NDAA should be conducted in an open manner. The staff will follow an approach similar to the “NRC Guidelines for Future Stakeholder Interactions on West Valley” (SECY-00-0158) to determine whether meetings should be open to the public. This approach consists of following NRC Management Directive (MD) 3.5, as applied to a licensee. MD 3.5 provides that NRC will conduct its business in an open manner, except for some specific circumstances such as those concerning safeguards information or management meetings not directly related to any regulatory action or decision. Meetings between NRC staff and DOE on the subject of a specific waste determination review for a DOE site will be open to the public. The staff believes this approach will be effective; however, if during implementation of the NDAA it proves to be inapplicable then this approach will be revisited and any changes will be communicated to the Commission.

The technical review approach of DOE’s non-HLW waste determinations will be similar to previous WIR reviews (e.g., for SRS in 2000 and the Idaho National Engineering and Environmental Laboratory INEEL in 2002 and 2003). However, as noted above, due to differences between the criteria in the NDAA and those used in previous NRC reviews, there will be some technical differences in the reviews.

The staff’s reviews will be risk-informed and performance-based. The first step in the process will be DOE’s submittal of its non-HLW determination and supporting documentation, including a PA if necessary (see attachment). The NRC staff will review whether DOE’s assumptions, modeling, and conclusions are technically adequate, accurate, and in compliance with the requirements of the NDAA. The NRC will document its findings in a Technical Evaluation Report (TER). To promote consistency and provide guidance to the staff and to DOE, the staff will also develop a Standard Review Plan (SRP) for conducting waste determination reviews and monitoring activities.

The staff will provide to the Commission the results of waste determination reviews that raise unique policy issues, prior to transmittal to DOE. This is a departure from past practice, in which the staff would send each TER to the Commission for review and approval. The change results from the recognition that these waste determination reviews are expected to become more frequent and that it would be more efficient and effective if the Commission endorsed the staff’s review approach and SRP, rather than each individual TER. However, because the first review under the NDAA (for salt waste processing and disposal) will be completed before the draft SRP is complete, the staff believes it is appropriate to brief the Commissioners’ technical assistants before issuing this TER under the NDAA to inform them of any new or unique issues covered during the staff’s review.

The NRC must also monitor DOE’s disposal activities resulting from NDAA waste determinations and issue reports if noncompliance with 10 CFR 61 is found. This monitoring will be conducted in a risk-informed and performance-based manner and will verify that DOE’s actions to implement its waste determinations are consistent with the analysis that DOE provided to the NRC. The NRC staff will also perform any necessary environmental monitoring to ensure that the performance objectives of 10 CFR Part 61, Subpart C, are being met.

The results of the staff’s monitoring activities would be documented in a publicly available report. Initially, this monitoring would be conducted by the NRC Headquarters staff that conducted the technical review and would be coordinated with the State, and with the Regions

for their awareness. The staff will re-evaluate the roles of Headquarters and the Regions with regard to monitoring once the staff gains more experience. Any findings of noncompliance will be provided to the Commission for approval and must be reported by NRC to Congress, the State, and DOE.

Schedule

The DOE has indicated that it wants NRC to review four separate non-HLW determinations in 2005 for SRS. These reviews will be for salt waste treatment and disposal, two tanks, and an evaporator. DOE submitted the first non-HLW determination, for the SRS salt waste treatment and disposal, on February 28, 2005. Also in 2005, DOE wants NRC to review a non-HLW determination for closure of several tanks at INEEL. DOE has not finalized its projections for FY06 or FY07. However, based on preliminary projections, the staff expects two to five new reviews each year.

The DOE is requesting an accelerated schedule for NRC's first review for SRS because the small amount of remaining tank volume is expected to soon affect DOE's ability to continue to vitrify waste at the site. DOE and NRC staff have established a schedule that is acceptable to the staff of both agencies. The first review of the SRS salt waste treatment and disposal is scheduled to be completed within approximately six months. This schedule is contingent on receiving timely, high-quality waste determination submittals and RAI responses from DOE. The other reviews for SRS tanks, the evaporator, and several of the INEEL tanks are scheduled to be completed within approximately nine months after DOE submits an adequate waste determination.

In addition, staff transmitted its RAIs on the first part of the review for Hanford on January 19, 2005. The ORP intends to submit its PA for review in April 2005. NRC will also be reviewing WIR determinations for the West Valley site. The staff has requested that the impacts of any WIR determinations be included in DOE's Draft Environmental Impact Statement, which is scheduled for NRC review in August 2005, and that the technical details of DOE's WIR determination be included with the site's Decommissioning Plan, currently scheduled for submittal in mid-2006. The staff will continue to conduct the Hanford and West Valley reviews in a manner consistent with the consultation approaches agreed to with DOE, as well as with Commission direction (e.g., the West Valley Final Policy Statement). The staff will also use the SRP in addressing specific technical issues.

NMSS is currently increasing its staffing for these new activities while simultaneously performing multiple technical reviews of DOE submittals. We anticipate that the earliest the draft SRP will be completed is Spring of 2006.

Resources

The staff estimates that the budget requirements for performing the new NDAA activities will be approximately \$2.5 million in FY06, which is included in the FY06 budget. As per the NDAA, funds for WIR beginning in FY06 are limited to appropriated non-fee-based funds. This estimate was originally generated based on NMSS needs. However, the Commission has recently directed the Advisory Committee on Nuclear Waste (ACNW) to include WIR as a high priority activity (COMSECY-04-0077). As a result, FY06 resources for ACNW and the Office of General Counsel (OGC) must come from the \$2.5 million appropriation. OGC and ACNW

resources needs for FY06 and FY07 are estimated to be 1 FTE (0.9 ACNW and 0.1 OGC) and \$10,000 for travel each year. NMSS resources for FY06 are estimated to be 8 FTE and \$1.35 million. The transfer of 1 FTE and \$10,000 from NMSS activities will have an impact on the staff's ability to complete the DOE reviews within the original schedule. In order not to displace other NMSS work, the staff will minimize this impact by coordinating with DOE to adjust the schedules for technical reviews of WIR submittals.

A new section within the Division of Waste Management and Environmental Protection has been established as the most efficient way to carry out the many review and monitoring activities required by the NDAA. The details of the staff's proposed schedule, resources, approach to technical issues, and stakeholder interactions are provided in the attachment.

CONCLUSIONS:

Staff is in the process of implementing its new consulting and monitoring responsibilities under the NDAA. The staff will provide technical reviews and monitoring and will interface with DOE, the States, and other stakeholders during implementation of the NDAA. Because waste determination reviews are expected to become more frequent, the staff believes it will be more efficient and effective to allow the staff to issue its TERs without prior Commission approval, except for those cases that raise unique policy issues. The staff considers this action to be within the delegated authority of the Director of the Office of Nuclear Material Safety and Safeguards.

RECOMMENDATIONS:

The staff recommends that the Commission approve the staff's plans for implementing its new responsibilities under the NDAA.

COORDINATION:

The Office of General Counsel has reviewed this paper and has no legal objections. The Office of the Chief Financial Officer has also reviewed the paper and concurs.

/RA Martin J. Virgilio Acting For/

Luis A. Reyes
Executive Director
for Operations

Attachment:
Implementation of NRC Responsibilities

Implementation of NRC Responsibilities

Background

The Ronald W. Reagan National Defense Authorization Act (NDAA) of Fiscal Year 2005 was passed by Congress on October 9, 2004, and signed by the President on October 28, 2004. Section 3116 of the NDAA allows the U.S. Department of Energy (DOE) to determine that certain waste is not high-level waste (HLW); however, the NDAA is applicable only to South Carolina and Idaho, and does not apply to waste transported out of those States. The NDAA requires (1) that DOE consult with the U.S. Nuclear Regulatory Commission (NRC) on its non-HLW determinations and plans and (2) that NRC, in consultation with the State, monitor disposal actions taken by DOE for the purpose of assessing compliance with NRC regulations in 10 CFR Part 61, Subpart C. If the NRC determines that any disposal actions taken by DOE are not in compliance, the NRC shall inform DOE, the affected State, and congressional subcommittees. In addition, the NDAA provides for judicial review of any failure of the NRC to carry out its monitoring responsibilities.

Section 3146 of the NDAA requires that the National Academy of Sciences (NAS) undertake a study of DOE's plans for management of those waste streams, resulting from the reprocessing of spent nuclear fuel and stored in tanks, that are greater than Class C and that DOE does not intend to send to a high-level waste repository for disposal. The first meeting of the NAS committee was held on March 7, 2005, for the purpose of determining the scope of the study and obtaining relevant background information. DOE actions with regard to waste that exceeds Class C concentrations. At this meeting, Congressman Spratt (D-SC) emphasized the NDAA wording that allows the NAS to examine any other matters appropriate and directly relevant to the subject matter of the study, and a congressional staffer stated that this study is not meant to open up the performance objectives of 10 CFR Part 61, Subpart C, for study.

History of Waste-Incidental-to-Reprocessing Criteria

The concept of incidental waste, also known as waste-incidental-to-reprocessing (WIR), is that wastes can be managed based on their risk to human health and the environment, rather than the origin of the wastes. With respect to wastes from reprocessing of nuclear fuel, such as the tank residuals at some DOE sites, some are highly radioactive and need to be treated and disposed of as HLW in a geologic repository and others do not. WIR does not pose the same risk to human health and the environment, and does not need to be disposed of as HLW in order to manage the risks that it poses. Consequently, incidental waste is not considered to be HLW.

The NRC first recognized the concept of incidental waste in 1969 when the Atomic Energy Commission issued for comment a draft policy statement in the form of a proposed Appendix D to 10 CFR Part 50 (34 FR 8712) which addressed a definition of HLW. The draft policy statement provided that certain materials resulting from reprocessing could be disposed of in accordance with 10 CFR Part 20 requirements. Although the draft policy statement did not use the term "incidental," the Commission proposed that the term HLW not include certain wastes that were incidental to reprocessing operations. However, when Appendix D was finalized as Appendix F, it did not include the paragraphs on incidental waste because the Commission wanted to preserve its flexibility as to how such material should be treated. The term "incidental waste" was apparently first used in the NRC's 1987 advance notice of proposed rulemaking to

refine the definition of HLW (52 FR 5992). However, in the 1989 final rulemaking action on disposal of radioactive waste (54 FR 22578), the Commission did not redefine HLW.

In 1990, the States of Oregon and Washington petitioned the Commission to amend 10 CFR Part 60 to redefine HLW. The petition concerned whether Hanford tank waste was subject to NRC licensing jurisdiction. In response to the petition, the original incidental waste criteria were approved by the Commission in a Staff Requirements Memorandum (SRM) dated February 16, 1993, in response to SECY-92-391, "Denial of PRM 60-4: Petition for Rulemaking from the States of Washington and Oregon Regarding Classification of Radioactive Waste at Hanford." The criteria are described in a March 2, 1993, letter from R. Bernero, NRC, to J. Lytle, DOE: (1) The waste has been processed (or will be further processed) to remove key radionuclides to the maximum extent that is technically and economically practical. (2) The waste will be incorporated in a solid physical form at a concentration that does not exceed the applicable concentration limits for Class C low-level radioactive waste (LLW) as set out in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 61. (3) The waste is to be managed, pursuant to the Atomic Energy Act, so that safety requirements comparable to the performance objectives set out in 10 CFR Part 61, are satisfied. The performance objectives of 10 CFR Part 61 include provisions for protecting the public, the worker, and the intruder, as well as provisions for site stability.

On July 9, 1999, DOE issued DOE Order 435.1, "Radioactive Waste Management." DOE Order 435.1 and the associated manual and guidance require that all DOE radioactive wastes be managed as HLW, transuranic (TRU) waste, or LLW. The Order states that waste determined to be incidental to reprocessing is not HLW and shall be managed in accordance with the requirements for TRU waste or LLW if it meets appropriate criteria. DOE Order 435.1 discusses DOE's WIR evaluation process and the criteria for a determination of waste incidental to reprocessing.

In the May 30, 2000, SRM on SECY-99-0284, "Classification of Savannah River Residual Tank Waste as Incidental," the Commission stated that a more generic, performance-based approach should be taken to determine whether waste could be classified as incidental. In effect, cleanup to the maximum extent that is technically and economically practical and demonstration that performance objectives could be met (consistent with those which the Commission demands for the disposal of LLW) should serve to provide adequate protection of the public health and safety and the environment. In the Final Policy Statement for the Decommissioning Criteria for the West Valley Demonstration Project at the West Valley Site, dated February 1, 2002 (67 FR 5003), the Commission adopted this performance-based approach and stated the criteria that should be applied to the incidental waste determinations at West Valley:

- (1) The waste should be processed (or should be further processed) to remove key radionuclides to the maximum extent that is technically and economically practical; and
- (2) The waste should be managed so that safety requirements comparable to the performance objectives in 10 CFR Part 61, Subpart C, are satisfied.

In February 2002, the Natural Resources Defense Council (NRDC) filed suit against DOE, stating that the Nuclear Waste Policy Act did not allow DOE to reclassify HLW and dispose of it anywhere except in a geologic repository. In July 2003, the U.S. District Court for the District of Idaho granted summary judgment to NRDC and declared DOE's WIR process, as described in Order 435.1, invalid. The DOE appealed the decision and, in November 2004, the U.S. Court of Appeals for the Ninth Circuit vacated the lower court's decision on ripeness grounds.

History of NRC Review of WIR Determinations

The DOE has periodically requested the NRC to provide a technical review of specific WIR determinations. The DOE believes that the NRC review results in a technically improved WIR determination and provides additional assurance that the DOE analysis and proposed actions are protective of the public health and safety. The NRC provided technical assistance and advice to DOE regarding its WIR determinations and did not provide regulatory approval for DOE's actions. The NRC's reviews have been performed by the Division of Waste Management and Environmental Protection (DWMEP) under site-specific reimbursable Interagency Agreements (IAs) and Memoranda of Understanding (MOUs). In addition to reviews requested by DOE for other sites, NRC staff is responsible for reviewing DOE's WIR determinations for the West Valley site in accordance with NRC's responsibilities under the West Valley Demonstration Project Act.

The staff reviewed DOE's WIR determinations to assess whether DOE's technical assumptions, analyses, and conclusions meet the applicable incidental waste criteria. In general, the staff would examine technical areas such as estimated radionuclide inventory, technology alternatives, performance assessment (PA) methodology, engineered system performance, infiltration, release and transport parameters, receptor scenarios and assumptions, and uncertainty and sensitivity analysis. The staff typically evaluated information submitted by DOE, generated requests for additional information (RAIs), met with DOE representatives to discuss technical questions and issues, and documented the final review results in a Technical Evaluation Report (TER). For the most recent review for INEEL, the staff conducted an independent, probabilistic assessment in order to develop risk insights and focus the review. The staff's goal is to do this independent assessment as early as possible in the review process to help focus the technical review on those areas most likely to change the results or conclusions. For each review, the staff gave the associated MOUs, IAs, and final review results to the Commission for review before taking action.

In addition to reviewing the Savannah River Site (SRS) tank closure methodology, the staff has reviewed incidental waste determinations for waste removed from tanks at Hanford, sodium-bearing wastes at the Idaho National Engineering and Environmental Laboratory (INEEL), and tank farm closure at INEEL. These reviews are discussed below.

In 1996, DOE requested NRC agreement that waste which DOE planned to remove from HLW tanks at Hanford and dispose of in a disposal facility on site was incidental waste and therefore not subject to NRC licensing authority. In its review, the staff used the three criteria given in the 1993 Denial of Petition for Rulemaking. Based on DOE's preliminary information and the actions that DOE stated it intended to take, the NRC provisionally agreed that the waste was incidental (SECY-97-083). However, the NRC also stated that if information significantly changed, such as tank inventory or waste form type, then re-analysis by NRC staff would be required for NRC's agreement to remain valid.

Also in 1996, DOE asked NRC to perform a technical review of DOE's methodology for classifying residual tank waste at SRS. In its review (SECY-99-284), the staff used the original three incidental waste criteria from the 1993 Denial of Petition for Rulemaking. However, the Staff Requirements Memorandum from the Commission (May 30, 2000) directed the staff to use a more generic, performance-based approach to determine whether waste could be classified as incidental. Therefore, the final staff TER and transmittal letter to DOE, dated June 30, 2000, stated that the site-specific analysis performed by the DOE appeared to demonstrate that the performance objectives of 10 CFR Part 61, Subpart C, could be met (i.e., adequate protection would likely be achieved) even if the Class C concentration limits were not met.

In 2001, DOE requested NRC consultation on two draft WIR determinations for INEEL. The first WIR determination involved sodium-bearing waste that would be removed from the HLW tanks and disposed of at the Waste Isolation Pilot Plant (WIPP). Because this was transuranic waste and would be disposed of at a facility regulated by the Environmental Protection Agency, the NRC staff only reviewed whether DOE's methodology would meet the criteria of being processed to remove key radionuclides to the maximum amount technically and economically practical (SECY-02-0112). The staff's conclusions were transmitted to DOE on August 2, 2002, and the staff stated that DOE's methodology appeared to meet the criterion.

The second WIR determination for INEEL concerned HLW tanks that DOE planned to close in place. The staff used the two WIR criteria provided in the NRC's Final West Valley Policy Statement and concluded that DOE appeared to have reasonably analyzed the relevant considerations in concluding that the residual waste in the tanks could meet the two WIR criteria (SECY-03-0079).

Staff Approach to NDAA Reviews

The staff believes the technical approach for conducting the reviews of DOE's non-HLW determinations should be similar to the WIR reviews done previously (e.g., for SRS in 2000 and INEEL in 2002 and 2003). The staff's reviews will be conducted in a risk-informed and performance-based manner. The first step in the process will be DOE's submittal of its non-HLW determination and supporting documentation, including a performance assessment (PA) if necessary. The NRC staff will review the information and transmit any requests for information (RAIs) to DOE. The staff will review whether DOE's assumptions, modeling, and conclusions are technically adequate and in compliance with the requirements of the NDAA. In addition to responding to the specific RAIs, DOE may decide to revise the non-HLW determination based on NRC's questions and comments. The NRC will then review the revised non-HLW determination and RAI responses and document its findings in a TER. Contrary to previous practice, DOE's initial non-HLW determination submittal, the staff's RAIs, DOE's RAI responses and any revised non-HLW determinations, and NRC's final TER will all be made publicly available.

The NDAA requires additional work in two areas: (1) DOE must now consult with NRC on DOE's plans to dispose of non-HLW waste that exceeds Class C concentrations, and (2) NRC must, in coordination with the State, monitor DOE's compliance and issue reports if noncompliance is found. The staff believes that consultation on disposal plans for waste that exceeds Class C concentrations will require reviews of DOE's demonstration that the performance objectives of 10 CFR Part 61, Subpart C, will be met. The reviews are expected to include disposal facility PAs and facility designs to obtain a sufficient understanding of DOE's

compliance. The staff believes this technical review process will follow the same general process described above for non-HLW determination reviews.

The NRC must also monitor DOE's disposal activities resulting from NDAA waste determinations and issue reports if noncompliance is found. This monitoring will be conducted in a risk-informed and performance-based manner, and will verify that DOE's actions to implement its waste determinations are consistent with the analysis DOE provided to the NRC. The NRC staff will also perform any necessary environmental monitoring to ensure that the performance objectives of 10 CFR Part 61, Subpart C, are being met.

During the review, the key assumptions and parameters that should be monitored to help ensure meeting the performance objectives of Part 61, Subpart C, will be identified. The staff believes that DOE should then use these key assumptions and parameters to develop an appropriate monitoring plan. The NRC would review the monitoring plan and conduct followup activities. For example, if the reducing conditions of the grout added to a tank are identified as important, then the monitoring phase could include activities such as evaluating DOE laboratory tests of the grout or evaluating the procurement and implementation records to ensure that reducing agents were added to the grout. The results of the staff's monitoring activities would be documented in a publicly available report. Initially, this monitoring would be conducted by the NRC Headquarters staff that conducted the technical review, and would be coordinated with the State. The staff will re-evaluate the roles of Headquarters and the Regions with regard to monitoring once the staff gains more experience. Any findings of noncompliance must be reported by NRC to Congress, the State, and DOE, and the NDAA provides for judicial review of any failure of the NRC to carry out its monitoring responsibilities.

For the sake of efficiency, the staff will develop a Standard Review Plan (SRP) for waste determination reviews and monitoring to describe the required information and process.

Resources and Implementation

The NDAA will significantly increase the NRC staff's workload because (1) DOE must now consult with NRC on all of its non-HLW determinations for SRS and INEEL, (2) DOE must now consult with NRC on DOE's plans to dispose of waste that exceeds Class C concentrations, and (3) NRC must, in coordination with the State, monitor DOE's compliance and issue reports if noncompliance is found. The NRC has not previously been involved with monitoring the performance of DOE's implementation of its non-HLW determinations or its disposal plans. The activities performed under the NDAA could include reviewing DOE's technical documentation and followup information on a regular basis, assessing DOE's modeling and model inputs, evaluating DOE's plans and designs for disposal of waste that is greater than Class C, visiting sites to assess DOE compliance, generating routine monitoring reports, interacting with the States, and reviewing site environmental reports to assess performance of DOE's closure plans. In addition, the staff will develop a SRP for this review work, develop monitoring guidance, and interact with the NAS as the committee is developing its report.

To perform the work required by the NDAA, the NRC will require technical experts in fields such as geochemistry, hydrology, performance assessment, health physics, materials science, geographic information systems, quality assurance, process chemistry, and project management.

The staff has previously used the Center for Nuclear Waste Regulatory Analyses (CNWRA) to help review WIR determinations. The contractor would provide experts, on an as-needed basis, in specific disciplines. In addition, the contractor may be used to assist in the performance of monitoring activities. For travel, multiple NRC employees would need to make site visits to both SRS and INEEL during the waste determination reviews. These site visits would allow the NRC staff to become familiar with the site and to hold onsite technical meetings with DOE experts. The NRC staff would also need to travel to the sites during the monitoring of DOE's compliance, to review documents on site and possibly engage in inspection-like activities, such as observing the placement of grout in a tank or sampling groundwater wells. Training would be needed to allow the additional NRC staff to become familiar with and proficient in the required skills and technical areas. For example, the staff may enroll in performance assessment training or attend DOE's tank waste workshops in order to become proficient in the highly complex areas in which technical expertise is needed to review waste determinations.

To implement NRC's new responsibilities under the NDAA, the staff intends to establish a MOU with DOE. The MOU will delineate the responsibilities and mechanisms for implementing the requirements of the NDAA. Because the NDAA requires DOE to reimburse the NRC for NRC's activities in FY05, the NRC and DOE staffs have established an IA to provide a funding mechanism. The DOE has indicated that the IA funding will be provided through DOE-HQ rather than through the individual site offices. After FY05, the NDAA requires that NRC seek congressional appropriations for its activities.

Considering the many review and monitoring activities and the specific areas of technical expertise required, the staff believes the most efficient manner in which to implement NRC's new responsibilities is to establish a new section. This new section would be within the Environmental and Performance Assessment Directorate of DWMEP, and would perform all waste determination reviews, monitoring, and reporting, including those for Hanford and West Valley. This section would also include any low-level waste activities that are currently under the Environmental and Low-Level Waste Section. The DWMEP currently has only a small number of staff members who are familiar with WIR reviews and had budgeted 3.0 full-time equivalent (FTE) for WIR activities for FY05, with most of the FTE to be spent on the Hanford review. Therefore, there will be a period during which there will not be enough staff to complete all waste determination reviews within DOE's schedule. While additional staff are being hired, the staff will rely on consulting services to assist with the technical reviews. Becoming fully staffed for all of the new waste determination review activities is estimated to take until the end of calendar year 2005.

The staff used its previous experience with WIR reviews to estimate the budget impacts of the NDAA. The staff estimates that the budget requirements for performing the new NDAA activities will be approximately \$2.5 million in FY06, which is included in the FY06 budget. As per the NDAA, funds for WIR beginning in FY06 are limited to appropriated non-fee-based funds. This estimate was originally generated based on NMSS needs. However, the Commission has recently directed the Advisory Committee on Nuclear Waste (ACNW) to include WIR as a high priority activity (COMSECY-04-0077). As a result, FY06 resources for ACNW and the Office of General Counsel (OGC) must come from the \$2.5 million appropriation. OGC and ACNW resources needs for FY06 and FY07 are estimated to be 1 FTE (0.9 ACNW and 0.1 OGC) and \$10,000 for travel each year. NMSS resources for FY06 are estimated to be 8 FTE and \$1.35 million. The transfer of 1 FTE and \$10,000 from NMSS activities will have an impact on the staff's ability to complete the DOE reviews within the original schedule. However,

the staff will attempt to minimize this impact and will coordinate with DOE to reassess schedules, if necessary .

It is important to note that the Hanford and West Valley reviews are not covered under the NDAA and the resources are obtained separately. Resources for Hanford reviews are obtained through site-specific reimbursable agreements, and resources for NRC's reviews under the West Valley Demonstration Project Act are within NRC's appropriated budget.

Schedule

The DOE is currently in the process of prioritizing the non-HLW determinations for all four of the sites that may have such waste (SRS, INEEL, Hanford, and West Valley). The DOE has stated that its highest priority is SRS because there is minimal free volume left in the tanks and this lack of volume will begin to affect site operations in the near future. The DOE has indicated that it would like NRC to review four separate non-HLW determinations in 2005 for SRS, with the first review beginning in March 2005. These reviews would be for (1) salt waste treatment and disposal, (2) Tank 18, (3) Tank 19, and (4) Evaporator 1F. Also in 2005, DOE would like NRC to review a non-HLW determination for closure of several tanks at INEEL.

The DOE is requesting an accelerated schedule for NRC's first review for SRS because the small amount of remaining tank volume will soon affect DOE's ability to continue to vitrify waste in its Defense Waste Processing Facility. DOE and NRC staff have developed a schedule that is acceptable to both agencies. DOE submitted its waste determination for the SRS salt waste treatment and disposal on February 28, 2005, and the NRC review is scheduled to take approximately six months. The other reviews for SRS tanks, the evaporator, and several of the INEEL tanks are scheduled to be completed within approximately nine months after DOE's submittal of adequate waste determinations. Recent staff reviews of WIR determinations have taken approximately nine to 15 months.

In addition, prior to the passage of the NDAA, the NRC and DOE's Office of River Protection (ORP) at Hanford had established an IA for NRC technical review of DOE's tank waste retrieval actions for Tank C-106. This review will be conducted in two interrelated parts. First, NRC staff is reviewing whether as much waste as possible has been removed from the tank. Second, staff will review whether the residual waste remaining in the tank can be left in place in a manner that is protective of public health and safety. The staff transmitted its RAIs on the first part of the review on January 19, 2005. The ORP intends to submit part of its PA for review in April 2005. This schedule may be impacted if DOE-HQ decides that Hanford has a lower priority than the other waste determination reviews.

NRC will review WIR determinations for the West Valley site under the West Valley Demonstration Project Act and the Commission's Final West Valley Policy Statement. The staff has requested that the impacts of any WIR determinations be included in DOE's Draft Environmental Impact Statement, which is scheduled for transmittal to NRC for review in August 2005, and the technical details of DOE's WIR determination be included with the site's Decommissioning Plan, currently scheduled for submittal in mid-2006.

In the long term, DOE expects to be conducting tank decommissioning and closure activities until at least the year 2020. With regard to SRS, for which DOE is required to consult with NRC under the NDAA, it is staff's understanding that DOE expects to be submitting non-HLW determinations until approximately the year 2016.

Examples of Possible Technical Issues

The NRC obligations under the NDAA may lead to some technical issues that will require resolution between NRC and DOE. Examples of technical issues are (1) strict interpretation of the requirements of 10 CFR 61 and related guidance, (2) the period of compliance, and (3) the possible need to review DOE's quality assurance.

During the NRC review for the INEEL tanks in 2003, the staff used the WIR criteria described in the Final West Valley Policy Statement. The second criterion in the Policy Statement is that "the waste should be managed so that safety requirements comparable to the performance objectives in 10 CFR part 61 subpart C are satisfied." The corresponding criterion in the NDAA is that the disposal of the waste will be "in compliance with the performance objectives set out in subpart C of part 61 of title 10, Code of Federal Regulations." The lack of the word "comparable" implies that a strict interpretation of Part 61 should be applied. For example, 10 CFR 61.41 provides dose limits of 25 mrem to the whole body, 75 mrem to the thyroid, and 25 mrem to any other organ rather than using the more current standard of 25 mrem total effective dose equivalent.

DOE's Order 435.1 contains requirements for a compliance period of 1,000 years for WIR. The NRC's guidance for low-level-waste disposal facilities recommends a period of compliance of 10,000 years in order to evaluate performance of both the engineered barriers and the site, and to capture the peak doses from the most mobile long-lived radionuclides ("A Performance Assessment Methodology for Low-Level Radioactive Waste Disposal Facilities," NUREG-1573). Given the nature of the wastes being evaluated in the WIR reviews, the NRC staff believes that 10,000 years is the compliance period that should be applied.

In past WIR reviews, the NRC staff has noted problems with the application of DOE's quality assurance program. For example, in the staff's review of the INEEL tank closure, the TER stated "DOE should evaluate and, if needed, enhance quality assurance controls of documentation in future PAs" (SECY-03-0079). The staff believes that DOE should demonstrate that it has adequately applied quality assurance to its waste determinations and computer modeling methods. Given the need to assess compliance with 10 CFR Part 61 and NRC's new monitoring role, NRC staff will review DOE's assessment to provide confidence that DOE has not incorporated errors into its analysis and that NRC's evaluation is based on correct information.

Differences in Criteria

It is important to note that the four DOE sites that have potential WIR material will be operating under different requirements for the determinations and management of WIR. The INEEL and SRS will use the requirements of the NDAA. Hanford could use the requirements of DOE Order 435.1. West Valley will use the criteria in the NRC's Final West Valley Policy Statement. Therefore, the scope of the staff's reviews may vary depending on the criteria being applied to a specific site.

Interactions With Stakeholders

The staff believes that the waste determination review process under the NDAA should be conducted in an open manner, where possible. To implement the NDAA, the NRC staff will need to interact with multiple stakeholders, including the Commissioners, DOE, the NAS, the States, the ACNW, citizen advisory boards, and members of the public. The staff is currently developing a communication plan for stakeholder interactions. This communication plan will be coordinated with DOE, South Carolina, and Idaho, as appropriate.

Interactions With the Commission

As noted above, the staff has previously sent completed WIR reviews to the Commissioners for review and approval prior to transmittal to DOE. After completing the first review under the NDAA, the staff will brief the Commissioners' technical assistants on any new or unique issues addressed by the staff during its review. This briefing will precede the transmittal of the final TER to DOE. However, because the waste determination reviews will become frequent, the staff does not intend to continue to transmit all TERs to the Commissioners for approval before transmittal to DOE. The staff will provide the Commission with early notification that a review has been completed and is being transmitted to DOE. Also, staff will request Commission input on future reviews that raise unique policy issues.

The staff and DOE intend to develop a MOU on the responsibilities of each agency. This MOU will be developed by DOE and the staff, and will then be transmitted to the Commission for approval prior to signature by the NMSS office director. Any NRC reports of DOE noncompliance will also be sent to the Commission for approval and transmittal to Congress, DOE, and the State. This overall approach will aid with efficiency and effectiveness while providing an adequate level of Commission awareness.

Interactions with DOE

The staff believes that the waste determination review process under the NDAA should be conducted in an open manner. NRC will hold periodic status and technical meetings with DOE to discuss issues related to the waste determinations. The staff will follow an approach similar to the "NRC Guidelines for Future Stakeholder Interactions on West Valley" (SECY-00-0158) to determine whether meetings should be open to the public. This approach consists of following NRC Management Directive (MD) 3.5, as applied to a licensee. MD 3.5 provides that NRC will conduct its business in an open manner, except for some specific circumstances such as those concerning safeguards information or management meetings not directly related to any regulatory action or decision. Meetings between NRC staff and DOE on the subject of a specific waste determination review for a DOE site will be open to the public. The staff believes this approach will be effective; however, if during implementation of the NDAA it proves to be inapplicable then this approach will be revisited and any changes will be communicated to the Commission.

In addition to the NRC Guidelines for Future Stakeholder Interactions on West Valley, staff also reviewed the "Agreement Between DOE/OCRWM and NRC/NMSS Regarding Prelicensing Interactions" (November 16, 1998) as a possible approach to apply to NDAA meetings. This agreement provides that most meetings between DOE and NRC would be public except for closed meetings held in accordance with the NRC Policy Statement on Staff Meetings Open to

the Public. However, the staff believes that the West Valley guidelines are more appropriate because, as with West Valley, DOE is not a licensee for these activities under the NDAA.

As stated above, staff will develop an MOU with DOE on the responsibilities of each agency. In addition, because the NDAA requires that DOE reimburse the NRC for NRC's activities in FY05, the staff has established an IA to provide a funding mechanism for FY05. DOE has indicated that the IA funding will be provided through DOE-HQ rather than through the individual site offices. The MOU and the IA will be publicly available.

DOE screens its own documents for sensitive information that should not be released to the public for security reasons. If DOE has completed its security review on documents given to the NRC, the staff believes this serves the purpose of the NRC's Sensitive Information Screening Project (SISP) and does not intend to conduct a SISP review on the same documents.

Interactions With the National Academy of Sciences

The NDAA requires that the NAS undertake a study of DOE's plans for management of those waste streams, resulting from the reprocessing of spent nuclear fuel and stored in tanks, that are greater than Class C and that DOE does not intend to send to a high-level waste repository for disposal. The study officially began on January 18, 2005, and NAS is required to issue an interim report within six months and a final report within one year. The first meeting of the NAS committee was held on March 7, 2005, for the purpose of determining the scope of the study and obtaining relevant background information. The NRC staff gave a presentation on NRC's historical involvement with WIR reviews. The NAS intends to hold approximately 15 meetings over the duration of the study, some at the DOE sites, and has requested that the NRC identify a point of contact to attend these meetings. When requested by the NAS, the NRC will interact with the NAS as it is developing its report through conference calls, presentations, or technical meetings, as appropriate. The NRC staff will likely provide information such as lessons learned from previous WIR reviews and experience with waste disposal and performance assessment.

Interactions With the States

The NDAA requires that NRC must, in coordination with the State, monitor DOE's compliance and issue reports if noncompliance is found. The staff expects to fulfill its coordination role by providing draft monitoring reports to the State for comment prior to issuance. Also, State representatives may be invited along to any onsite monitoring visits by the NRC. In addition, staff has established points of contact with State agencies so that the State representatives can raise any issues of concern.

Given the need for staff and the affected States to coordinate monitoring activities and in some cases discuss technical issues related to DOE waste determinations, NRC staff believes meetings with the States should remain closed as government-to-government meetings (as described in Management Directive 3.5), unless otherwise requested by the States.

The States have their own regulatory processes for SRS and INEEL and, depending on the types of permitting activity, may hold public meetings regarding the State's review of any proposed permitting action. The State of South Carolina has stated that it plans to hold public meetings, and the NRC staff has told the States that the staff is willing to participate in such public meetings, if requested by the State, in order to present NRC's role and process in the

waste determination process.

The NDAA requires that the NRC inform DOE, the affected State, and congressional subcommittees if the NRC determines that any disposal actions taken by DOE are not in compliance. The staff expects that the same noncompliance report will be issued to the State as is issued to DOE and Congress.

Interactions With the Advisory Committee on Nuclear Waste

On November 17, 2004, in a closed session, the staff briefed an ACNW subcommittee on previous NRC WIR reviews, the requirements of the NDAA, and the staff's use of risk insights when performing WIR reviews. The ACNW was interested in the topic and is planning to hold a working group in July 2005 to provide insights on related technical issues. The staff will interact with the ACNW by participating in the working group, attending meetings, giving presentations, providing input on ACNW reports, and giving other assistance requested by the ACNW, as appropriate. The working group meeting in July will be open to the public.

Interactions With the Public

During waste determination reviews and monitoring activities, the NRC staff intends to publicly release its documents, including RAIs, TERs for waste determinations, monitoring reports, and any noncompliance reports. Any submittals made by DOE will also be made publicly available.

NRC staff may participate in any public meetings held by DOE or the States regarding waste determinations and monitoring, as appropriate; for example, the State of South Carolina has indicated it will likely request that NRC participate in the public meetings during the State's permitting process. In addition, the States have indicated they may request the NRC staff to make presentations to the citizen advisory boards for both SRS and INEEL.

As noted above, the staff intends to develop an SRP that will describe the process that the staff will use to fulfill its responsibilities. The staff plans to conduct a scoping meeting at the beginning of the development of the SRP to allow the public and other interested parties to identify technical issues that should be considered in the SRP. The draft SRP will be issued for public comment, and any comments received will be considered in the development of the final SRP. The earliest anticipated date for the draft of the SRP to be available is Spring of 2006.