

POLICY ISSUE INFORMATION

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SECY-02-0143

FOR: The Commissioners

FROM: William D. Travers
Executive Director for Operations

SUBJECT: ASSESSMENT OF THE POSSIBLE EFFECTS OF NUCLEAR INDUSTRY
CONSOLIDATION ON NRC OVERSIGHT

PURPOSE:

The purpose of this paper is to inform the Commission of the staff's assessment of the possible effects of nuclear industry consolidation on NRC's oversight responsibilities.

BACKGROUND:

Staff Requirements Memorandum (SRM) COMNJD-99-006, "The Effects of Industry Consolidation on NRC Oversight," dated February 10, 2000, directed the staff to assess and report to the Commission the policy implications of industry consolidation and the need to consider policy changes to NRC oversight of industry activities. The SRM also directed the staff to "be proactive and increase its interactions with stakeholders to identify emerging policy issues related to the new trends in industry consolidation."

An NRC staff Working Group was formed of senior staff from the principal headquarters stakeholder offices and a regional manager to carry out the effort. The Working Group identified 25 areas of regulatory oversight that potentially could be affected by industry consolidation and grouped these areas into eight categories. The Working Group completed its preliminary assessments of the potential impacts for each of the 25 areas. These preliminary assessments were presented to the Commission in SECY-01-0044, "Status of Staff Efforts Regarding Possible Effects of Nuclear Industry Consolidation on NRC Oversight," dated March 16, 2001.

Technical Contact:
Herbert N. Berkow, NRR
301-415-1485

In SRM-SECY-01-0044, dated June 13, 2001, the Commission approved the continuation and completion of the effort in accordance with the staff's recommendation, and specifically approved publication in the *Federal Register* of the preliminary assessments. The assessments were published in the *Federal Register* (66 FR 34293) and on the NRC external Website on June 27, 2001, for a 60-day comment period.

DISCUSSION:

Sixty-seven comments were received in response to the *Federal Register* notice and Web posting from eight organizations and two individuals. About one-half of the comments were generally in agreement with the staff's preliminary assessments. Several others were supportive, but offered additional perspectives for consideration. Some others disagreed with some aspect of the staff's assessment or suggested additional follow up actions.

To obtain additional external stakeholder input on the issues, the staff hosted a public workshop on November 1 and 2, 2001. The workshop combined this industry consolidation effort with a related, but separate, Office of Nuclear Regulatory Research-sponsored effort on the potential safety impacts of economic deregulation of the industry. The workshop was called the "Nuclear Industry Consolidation and Deregulation Issues Workshop." Session one of the workshop addressed industry consolidation issues relevant to this paper. The format was a round table of senior NRC managers and invited representatives of cognizant external stakeholder organizations representing a spectrum of views. The external organizations included the Union of Concerned Scientists, U.S. Enrichment Corporation, National Association of Regulatory Utility Commissioners, Nuclear Energy Institute, Nuclear Regulatory Services Group, and Nuclear Management Company. A facilitator led the workshop to encourage interactive discussion of selected focus areas among the principal participants and with the other attendees. The workshop was recorded and the transcript is publicly available on ADAMS (ML013330192).

The remainder of the workshop focused on the concurrent RES-sponsored effort to identify possible consequences of economic deregulation for nuclear power safety. This effort is based on NUREG/CR-6735, "Effects of Deregulation on Safety: Implications Drawn From the Aviation, Rail, and United Kingdom (UK) Nuclear Power Industries." The study focused on the safety issues that resulted from deregulation in these industries and in the UK. The workshop participants represented those industries, the U.S. nuclear power industry and other stakeholders. Insights from the workshop and associated studies will be used to determine if any follow on research activities are necessary.

CONCLUSION:

The preliminary assessments contained in SECY-01-0044 identify potential impacts of nuclear industry consolidation. The recommended follow up actions in the preliminary assessments addressed only what should be given further consideration to determine if changes were needed. SECY-01-044 did not address what changes should be made to the NRC's existing organization structure, policies, guidance, and regulations. The staff now has sufficient information to provide the Commission with a final position regarding the recommended follow up actions contained in SECY-01-0044. Specifically, the staff has evaluated the recommended follow up actions against our performance goals and assessed their significance and relevance.

Based on the staff's identification and assessment of the possible effects of nuclear industry consolidation on NRC's oversight functions and responsibilities, and supported by extensive external stakeholder input, the staff concludes that the existing NRC organizational structure, policies, guidance, and regulations are adequate at this time. The staff will continue to monitor experience and feedback from the current oversight processes. Should significant changes occur in the industry, the staff will consider further study in a few of the assessment areas (as noted in the report) using the Planning, Budgeting, and Performance Management (PBPM) process.

COORDINATION:

This paper has been coordinated with and concurred in by the principal internal stakeholder offices and the regions. Representatives of these offices participated in generating the paper and its attached report. The Office of the General Counsel has no legal objection to this paper. The Office of the Chief Financial Officer has reviewed this Commission paper for resource implications and has no objections.

/RA/

William D. Travers
Executive Director
for Operations

Attachment: Industry Consolidation Impact Report

INDUSTRY CONSOLIDATION IMPACT REPORT

ATTACHMENT

ABSTRACT

This report provides the results of the Industry Consolidation Review Working Group of the U.S. Nuclear Regulatory Commission. This working group was formed in response to the Staff Requirements Memorandum (SRM) COMNJD-99-006, "The Effects of Industry Consolidation on NRC Oversight," dated February 20, 2000. The SRM asked the staff to assess and report to the Commission the policy implications of industry consolidation and the need to consider policy changes to NRC oversight of industry activities. The SRM also directed the staff to "be proactive and increase its interactions with stakeholders to identify emerging policy issues related to the new trends in industry consolidation." Based on the staff's identification and assessment of the possible effects of nuclear industry consolidation on NRC's oversight functions and responsibilities, and supported by extensive external stakeholder input, the staff concluded that there is no need for changes to existing NRC regulations, policies, guidance, or organizational structure at this time. Should significant changes occur in the industry, the staff will consider further study in a few assessment areas (as noted in the Report) using the PBPM process.

EXECUTIVE SUMMARY

This report provides the results of the Industry Consolidation Review Working Group of the U.S. Nuclear Regulatory Commission. This working group was formed in response to the Staff Requirements Memorandum (SRM) COMNJD-99-006, "The Effects of Industry Consolidation on NRC Oversight," dated February 20, 2000. The SRM directed the staff to assess and report to the Commission the policy implications of industry consolidation and the need to consider policy changes to NRC oversight of industry activities. The SRM also directed the staff to "be proactive and increase its interactions with stakeholders to identify emerging policy issues related to the new trends in industry consolidation."

The working group was formed of senior staff from the principal headquarters stakeholder offices and a regional manager to carry out the effort. The Working Group identified 25 areas of regulatory oversight that potentially could be affected by industry consolidation and grouped these areas into eight categories. Preliminary assessments of the potential impacts for each of the 25 areas were presented to the Commission in SECY-01-0044, "Status of Staff Efforts Regarding Possible Effects of Nuclear Industry Consolidation on NRC Oversight," dated March 16, 2001.

In SRM-SECY-01-0044, dated June 13, 2001, the Commission approved the continuation and completion of the effort in accordance with the staff's recommendation, and specifically approved publication in the *Federal Register* of the preliminary assessments. The assessments were published in the *Federal Register* (66 FR 34293) and on the NRC external Website on June 27, 2001, for a 60-day comment period.

Sixty-seven comments were received in response to the *Federal Register* notice and Web posting from eight organizations and two individuals. About one-half of the comments were generally in agreement with the staff's preliminary assessments. Several others were supportive, but offered additional perspectives for consideration. Some others disagreed with some aspect of the staff's assessment or suggested additional follow up actions.

To obtain additional external stakeholder input on the issues, the staff hosted a public workshop on November 1 and 2, 2001. The workshop combined this industry consolidation effort with a related, but separate, Office of Nuclear Regulatory Research-sponsored effort on the potential safety impacts of economic deregulation of the industry. The workshop was called the "Nuclear Industry Consolidation and Deregulation Issues Workshop." Session one of the workshop addressed industry consolidation issues relevant to this paper. The format was a round table of senior NRC managers and invited representatives of cognizant external stakeholder organizations representing a spectrum of views. The external organizations included the Union of Concerned Scientists, U.S. Enrichment Corporation, National Association of Regulatory Utility Commissioners, Nuclear Energy Institute, Nuclear Regulatory Services Group, and Nuclear Management Company. A facilitator led the workshop to encourage interactive discussion of selected focus areas among the principal participants and with the other attendees. The workshop was recorded and the transcript is publicly available.

The rest of the workshop focused on the concurrent RES-sponsored effort to identify possible consequences of economic deregulation for nuclear power safety. This effort is based on

NUREG/CR-6735, "Effects of Deregulation on Safety: Implications Drawn From the Aviation, Rail, and United Kingdom (UK) Nuclear Power Industries." The study focused on the safety issues that resulted from deregulation in these industries and in the UK. The workshop participants represented those industries, the U.S. nuclear power industry and other stakeholders. Insights from the workshop and associated studies will be used to determine if any follow-on research activities are necessary.

Based on the staff's identification and assessment of the possible effects of nuclear industry consolidation on NRC's oversight functions and responsibilities, and supported by extensive external stakeholder input, the staff concludes that there is no need for changes to existing NRC regulations, policies, guidance, or organizational structure at this time.

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INTRODUCTION AND BACKGROUND:

In order to obtain additional external stakeholder input on the issues, the staff hosted a public workshop in the TWFN Auditorium on November 1 and 2, 2001. The workshop was dual purpose and combined this industry consolidation effort with a related, but separate, RES-sponsored effort on the potential safety impacts of economic deregulation of the industry. This summary addresses only Session one of the combined workshop that addressed consolidation issues. The format was a "round table" of senior NRC managers and invited representatives of cognizant external stakeholder organizations representing the full spectrum of perspectives. The external organizations included: Union of Concerned Scientists, U.S. Enrichment Corporation, National Association of Regulatory Utility Commissioners, Nuclear Energy Institute, Nuclear Regulatory Services Group, and Nuclear Management Company.

The workshop was facilitated and promoted interactive discussions among the principal participants on six consolidation-related focus areas, as follows: (1) Plant Operational Safety, (2) Licensing, (3) Inspection, Enforcement and Assessment, (4) Decommissioning, (5) Fuel Cycle Facilities, and (6) Financial. In addition, there was an "other" category for stakeholder issues that did not fit within any of the six categories. The workshop was transcribed and the transcript is available in ADAMS at ML013330192.

RESPONSES TO EXTERNAL STAKEHOLDER COMMENTS AND FINAL ASSESSMENTS

The staff's preliminary impact assessments were published for external stakeholder comment in the *Federal Register* (66 FR 34293) and on the NRC external Website on June 27, 2001. Sixty-seven written comments were submitted from eight organizations and two individuals. An additional 21 comments were received from participants at the public workshop on November 1, 2001. The majority of the comments from all sources endorsed the staff's preliminary assessments. Several comments supported the staff's positions but offered additional perspectives for consideration. A number of comments addressed issues that were not relevant to industry consolidation. The balance either disagreed with some aspect of the staff's assessments or suggested additional or different follow up actions.

The comments and staff's responses are discussed in the following pages. Comments that simply agreed with the staff's assessments are not addressed. Those comments that were totally irrelevant to industry consolidation were responded to by separate letters to the commenters. The balance of the comments are grouped by category and issue. Wherever the preliminary assessments are modified as a result of one or more comments, this is so noted in the response. Where the staff has decided that no change to the preliminary assessment is warranted, the response explains that decision.

This report contains the final results from the staff's analysis of industry consolidation. Each section addresses key issues, including a summary of the industry consolidation session of the workshop (participants, format, focus areas, and key issues raised) followed by the staff's issue-by-issue responses to the written comments solicited by the *Federal Register* and Web publication and to the related points raised at the workshop. The responses explain how the assessments were modified to address the comments or if they were not modified, why not.

Finally, the staff's conclusions of the final impact are stated as updated to reflect current status and the comments received. The final conclusions also include, for staff consideration, possible follow-up actions for some of the issues. The staff should review the conclusions and incorporate the suggestions as appropriate, employing the PBPM.

The following acronyms are used for the external stakeholder organizations that submitted comments:

IDNS - State of Illinois Department of Nuclear Safety
INPO - Institute of Nuclear Power Operations
NARUC - National Association of Regulatory Utility Commissioners
NEI - Nuclear Energy Institute
NMC - Nuclear Management Company
NRSG - Nuclear Regulatory Services Group
UCS - Union of Concerned Scientists
USEC - U.S. Enrichment Corporation

CATEGORY 1 - PLANT OPERATIONAL SAFETY

Issue 1.a - Possible Cost-cutting Initiatives

Background:

Four comments were received from NEI, UCS, NMC, and an individual. NEI and NMC agreed with the staff's preliminary assessment. UCS suggested that the staff's assessment refer to the NRC's ongoing efforts in the area of worker fatigue and enforcement of consistent working hour limits as protection against fatigue-related human errors. The comments from the individual were concerned with the economic and political clout of consolidated licensees and the effects of economic concentration of the industry in only a few companies.

Staff response:

In response to the UCS comment, the Commission recently completed its review of a petition for rulemaking concerning worker fatigue and control of work hours. In developing a rulemaking plan for the Commission, the staff recommended a rulemaking option which would ensure worker fatigue does not compromise plant operational safety, regardless of the cause of the fatigue. On January 10, 2002, the Commission issued a Staff Requirement Memorandum approving the staff's plan to grant the petition, in part, and develop a proposed rule in accordance with the staff recommendation.

Regarding the individual's comments, the NRC's focus on operational safety is totally transparent to any economic or political influence licensees might exert. Also, the staff's regulatory oversight processes are able to assess and react to adverse safety trends and impacts. Refer to Issue 3.a, for more complete discussion of this.

No change in the assessment was needed as a result of these comments.

Discussion:

In a more consolidated, economically deregulated market, the nuclear power industry will be faced with new pressures to operate more efficiently. Cost controls could result in shorter outages (and thus longer run times), increased use of on-line maintenance, power uprate amendments, increased use of risk-informed technology and decisions and other changes that would result in lower costs and increased productivity.

Consolidated licensees will also seek to achieve economies of scale, which is a major potential benefit of consolidation. This will likely be manifested in organizational changes, both at the plant and corporate levels, to combine duplicative functions, optimize staff size, standardize best practices, and centralize functions. Organizational and operational philosophies may also be influenced by the prerequisites of economic deregulation, which often require existing utilities to separate power generation from transmission and distribution functions. Consolidation and economic deregulation will likely result in increased efforts by licensees to seek reductions in unnecessary regulatory burden. Licensees may also seek reductions in licensing fees beyond that relief already provided by Congress.

Impact Assessment:

Licensee efforts to operate more efficiently may result in net positive safety impacts. There is evidence, both domestic and foreign, to demonstrate that well-run, efficiently-operated plants are also the safest plants. Nevertheless, if carried to excess, cost-cutting measures to achieve short-term economic gains could result in longer-term adverse safety performance impacts.

Licensees are responsible to ensure that safety and regulatory compliance are not compromised by the industry goals to maximize operational efficiency and performance effectiveness. The NRC must stay focused on operational safety and have the capability to assess and react to industry activities in response to economic pressures that appear to have an adverse impact on safety. The staff's existing safety assessment processes have adequate flexibility to detect and respond to adverse safety performance trends that result from competition-driven licensee actions. At the same time, the staff will have to remain sensitive to reducing unnecessary regulatory burden.

Conclusion:

No follow up action is recommended. Continued staff monitoring of experience and feedback from the current oversight processes should provide early identification of issues related to economics-driven licensee actions that may require staff attention. This, in turn, would define any appropriate staff reaction.

CATEGORY 1 - PLANT OPERATIONAL SAFETY

Issue 1.b - Technology-related Issues

Background:

One written comment was received from NEI. While agreeing that the NRC should monitor this issue, NEI commented that the NRC could move faster in adopting risk-informed, performance-based regulatory approaches. NEI further recommended that the agency take the necessary steps to expedite the application of risk technology and incorporate results-based approaches as a means to monitor the effectiveness of the efforts.

Comments were also generated on this issue during the NRC's public workshop. A participant suggested that more rapid progress on risk-informed regulation should be pursued by "unbundling" issues where appropriate. Other comments suggested: (1) The NRC should develop thresholds for acceptable performance so that the attempts to drive imperfections to zero will not predominate; (2) Simplification and shortening of the rulemaking process, especially for approval of new technologies and methodologies, should be pursued; and (3) NMSS needs to be ready to address new technologies such as gas centrifuge for fuel cycle facilities.

Staff response:

In accordance with the Commission's direction, the staff is aggressively pursuing risk-informed regulation and the other areas noted in the comments, subject to resource constraints. Any additional actions will be evaluated in accordance with the agency's Planning Budgeting and Performance Management (PBPM) process. The assessment has been modified to reflect this.

Regarding the suggestion that the NRC develop thresholds for acceptable performance so that attempts to drive imperfections to zero will not predominate, the NRC has established thresholds for licensee performance in its reactor oversight process (ROP). These thresholds, i.e., licensee response band and regulatory response band, are determined from application of the significance determination process (SDP) to NRC inspection findings and the evaluation of licensee-submitted performance indicator (PI) information. The SDP provides an objective means of determining the safety significance of licensee performance-related issues identified during the NRC inspection process, and the PI information submitted by licensees provides an objective measure of licensee performance in selected areas amenable to the use of PI approaches. The SDP results and PI thresholds, i.e., "white," "yellow," or "red," reflect on licensee performance and dictate the level of NRC engagement per the ROP Agency Action Matrix. The thresholds established within the ROP are risk-informed to the extent practicable and correspond to a graded regulatory response. They, consequently, do not represent attempts to drive imperfections to zero. No change to the staff's assessment is necessary to address this comment.

In response to the workshop comments on improving the rulemaking process and facilitating approval of new technologies, the staff continues to seek opportunities to enhance the efficiency of the rulemaking process within the constraints of resource availability and the need for public participation. The Office of Nuclear Regulatory Research stays abreast of new and

developing technologies so that the staff can anticipate and acquire the expertise needed to review applications involving such technologies. No change to the staff's assessment was needed to address this comment.

Discussion:

While technology and process advances have continued to be developed and introduced into the design and operation of licensed nuclear facilities, industry consolidation and economic deregulation may provide additional incentives for such advances.

The NRC research-sponsored effort encompasses a variety of broad technological areas which may be involved in future developments related to industry consolidation and economic deregulation. The following are examples of such technological areas which the staff may have to deal with in the future.

1. Fuel integrity must be addressed in an integrated fashion considering longer operating cycles, ultra-high fuel burnups, new cladding materials, power uprates, and changes to operational conditions such as may result from load following. A stronger, consolidated industry may see advantages to moving to a simpler performance-based assessment rather than the present design-based method.
2. Human and organizational factors affected by industry consolidation and deregulation may need to be considered to address reduced staffing, modified maintenance strategies, and possible increased use of contractors.
3. Introduction of new technologies, such as advanced information technologies, evolution of digital instrumentation and control systems in existing facilities, and development of new reactor concepts may require new regulatory approaches. These types of issues are also pertinent to Issue 2.b.

The staff has ongoing, or planned activities which will enable it to accommodate the technology-related issues arising from industry consolidation and deregulation. The staff is aggressively pursuing progress in such areas subject to the constraints on resources. The activities are evaluated subject to the agency's Planning, Budgeting, and Performance Management (PBPM) process. The following are examples of such activities:

1. Development of risk-based performance indicators (RBPIs) could provide an additional tool with which to assess plant safety performance on a plant-specific as well as industry-wide basis. The RBPIs, if successfully developed, would provide broader coverage of risk than the current performance indicators and would allow a more detailed assessment of the root causes of problems, whether or not they are related to consolidation or deregulation. Also, plant-specific thresholds based upon risk could be established.
2. Risk information is routinely used to assist in regulatory decisions regarding such issues as equipment and plant aging, fuel burnup and power uprates. The synergetic effects of such changes on the overall safety of operating plants may require re-evaluation of existing probabilistic risk assessments.

3. Advanced information technologies are likely to be employed in emergency preparedness programs (Issue 1.e). Areas of potential interest are possible consolidation-related impacts on the communications infrastructure and integrity of data used for making decisions during emergencies.
4. There is an increased focus on results-based regulatory decision-making. The staff has developed high-level guidelines for performance-based activities to facilitate implementation of such approaches while ensuring that adequate safety margins are maintained. Broader use of performance-based approaches may allow more direct observation of the effects of consolidation.

Impact Assessment:

The technology-related aspects of many of the potential issues that may arise from industry consolidation and deregulation require that more experience and operational information be incorporated into the staff's evaluations. While the staff is alert to possible safety concerns, the expectation is that the changes will also bring about safety improvements. However, impact assessments are premature at this point. The work being conducted by the RES staff on issues relevant to industry consolidation and deregulation provides confidence that technical challenges can and will be met effectively.

The generic issues program has dealt with a number of issues where safety considerations similar to those occurring with industry consolidation were addressed. A process exists for new information from industry consolidation to be fed back into the program and potentially trigger a re-evaluation of specific issues, if appropriate. NRC staff monitors the changes occurring within the nuclear industry and take these changes into account as appropriate. So far, resolved issues in this area have not had to be re-evaluated, suggesting that the safety assessments conducted previously remain valid.

Conclusion:

No follow up action is recommended. As experience with industry consolidation is limited at this time, the staff's emphasis should continue to be on monitoring operational information and being alert to indications of an unexpected nature.

CATEGORY 1 - PLANT OPERATIONAL SAFETY

Issue 1.c - Spent Fuel Storage and Transportation

Background:

Two comments were received from NEI and IDNS. NEI commented on the long lead times the industry has seen for issuing Independent Spent Fuel Storage Installation (ISFSI) licenses and cask certifications and amendments. IDNS commented on the potential for a large increase in spent nuclear fuel transportation.

Staff response:

In response to the NEI comment involving the lead times for issuing ISFSI licenses and cask certifications and amendments, the staff notes that NEI's comments on changing the process for issuing or amending the Part 72 storage cask certificates of compliance are the subject of a previously-submitted petition for rulemaking, PRM-72-5, that NEI filed on April 19, 2000, and was noticed in the *Federal Register* on June 9, 2000 (65 FR 36647). Subsequent to the public workshop, the Commission published a notice in the *Federal Register* denying PRM-72-5 (66 FR 63964, December 11, 2001).

Furthermore, the staff disagrees with NEI's claim that the current Part 72 regulations contain "extremely conservative simplistic technical bases for cask certifications" and that this adds to review time and applicant burden. The current Part 72 regulations establish minimum performance standards for the safe storage of spent fuel in dry casks. Cask designs may be simple with large margins of safety (and less operational flexibility) or they may be complex with smaller margins of safety (and greater operational flexibility). Complex cask designs with smaller margins of safety typically require more sophisticated and lengthy analysis by the applicant, and the NRC staff reviewing the application, to ensure that public health and safety and the environment will be adequately protected when spent fuel is stored in the cask. However, staff believes it is wholly within the applicant's discretion — in developing a specific cask design—to balance operational flexibility (marketability) issues with design complexity and margin of safety issues. Furthermore, the staff has worked with NEI over the last two years to develop standardized technical specifications for spent fuel storage cask designs to reduce industry burden in the development of applications and to allow industry to take fuller advantage of the recently revised regulations in 10 CFR 72.48 [permitting certificate holders to make certain changes to a cask design without prior NRC approval]. As part of that effort, NRC staff published NUREG-1745, "Standard Format and Content for Technical Specifications for 10 CFR Part 72 Cask Certificates of Compliance," dated June 2001.

In response to the IDNS comment on the potential for a large increase in spent nuclear fuel transportation, the staff believes that while a consolidated utility could centralize its dry cask spent fuel storage activities at one location, industry has not provided any indication that any such actions are contemplated. The NRC staff has raised this specific question with industry in previous public meetings. Notwithstanding the absence of any industry indication of an intention to create and use a centralized ISFSI at one of its reactor sites, NRC regulations require amendment of the Part 72 specific license (for fuel stored under a specific license) or amendment of the Part 50 operating reactor license (for fuel stored under the Part 72 general

license) to store the additional spent fuel at a centralized site. In either case, affected States, the public, and other stakeholders would have the opportunity to request a hearing on the amendment request.

No change in the assessment was needed as a result of these comments.

Discussion:

U.S. nuclear power plants were not designed to store all the spent nuclear fuel generated throughout their original operating lives, let alone with extended lifetimes. To date, utilities have been coping with the lack of spent fuel storage capacity by expanding the capacity of spent fuel pools through redesign (reracking) and by constructing independent spent fuel storage installations (ISFSIs) for at-reactor, above ground, dry storage. Prior to the increase in industry consolidation activities, Private Fuel Storage LLC, a company owned by eight U.S. utilities, applied for a license to receive, handle, transfer, and store spent nuclear fuel from commercial nuclear power plants at a privately owned ISFSI. This away-from-reactor ISFSI will be able to store as much as 40,000 MTU of spent fuel at one location. The purpose of the proposed facility is to satisfy the need for an interim storage facility that would serve as a safe, efficient, and economical alternative to continued spent fuel storage at reactor sites. NRC is aware of a potential application for a second away-from-reactor ISFSI (i.e., the Owl Creek site). As a result of industry consolidation and the good performance record of operating plants, it is expected that a majority of all currently operating plants will seek license renewal. The staff must review and approve all applications for license renewal. As no application for a permanent spent fuel storage site has been received by the NRC to date, there will likely be a need for additional temporary spent fuel storage as plants operate for extended lifetimes. At this point in time, it is premature to predict whether nuclear industry consolidation could increase the need to consolidate spent fuel storage either at selected reactor site ISFSIs or at new away-from-reactor ISFSIs. Further, there is no basis to say that consolidation will affect the amount of spent nuclear fuel that will need to be transported to or from reactor sites.

Impact Assessment:

The NRC has been able to successfully address applications for new ISFSI licenses and new spent fuel storage cask designs, as well as applications to amend existing licenses and cask certifications. Consolidation could result in an increased number of amendments to existing ISFSI licenses (to increase storage capacity), applications for new site-specific ISFSI licenses, applications for away-from-reactor ISFSIs, applications to amend existing Part 71 and 72 quality assurance programs, and amendments to existing certified cask designs (to permit storage of additional types of spent fuel and fuel with higher burnup). The staff currently interfaces with the licensees and industry groups (e.g., NEI) on a periodic basis to identify future submittals and thus aid in assessing future resource needs.

Existing Part 71 and 72 regulations, policies, and guidance are sufficient to support nuclear industry consolidation.

Conclusion:

No follow up action is recommended. Currently, it appears that ISFSI licensing and spent fuel storage cask certification regulations, policies, and procedures are sufficient to accommodate situations resulting from industry consolidation. Staff will continue to work with industry to obtain advance notice of future applications and thus predict future casework levels that may be generated by consolidations. Furthermore, there may be some unique, unanticipated circumstances that require changes to spent fuel storage or transportation policies or regulations. For either of these situations, the staff will utilize the PBPM process to address resource impacts and will continue to identify significant policy matters and make appropriate recommendations to NRC management.

CATEGORY 1 - PLANT OPERATIONAL SAFETY

Issue 1.d - Low-Level Radioactive Waste Management

Background:

Three comments were received from NEI, UCS, and IDNS. NEI agreed with the NRC staff's preliminary assessment. UCS indicated that electricity deregulation pressures plant owners to find ways to increase revenues and that nuclear plant sites could become storage sites for low-level wastes generated by medical and other non-power sources, and that this issue should be included in the assessment. IDNS disagreed with NRC staff that utilities could save money by developing a centralized storage facility and processing their own wastes. IDNS said that nuclear power stations are generally not licensed to receive waste generated off-site and this would likely prohibit the development of a centralized facility at an existing nuclear power station. IDNS also added that industry consolidation has involved nuclear power generating plants located in multiple States and compact regions and transferring waste across compact boundaries for processing may run afoul of the import/export authority of regional compacts.

Staff response:

Relative to the UCS comment, Generic Letter 85-14, "Commercial Storage at Power Reactor Sites of Low-Level Radioactive Waste Not Generated by the Utility," presents the NRC staff position on storage of wastes not generated by the utility. In the Generic Letter, NRC staff stated that it is opposed to any activity at a nuclear reactor site which is not generally supportive of activities authorized by the operating license or construction permit, and which may divert the attention of licensee management from its primary task of safe operation or construction of the power reactor. Any application for a proposed commercial waste storage facility would have to demonstrate that the storage activities would be safe, there would be no significant environmental impact, and the proposed activities would be consistent with and not compromise safe operation of the nuclear power plant.

In response to the IDNS comment, the cost-effectiveness of centralized waste processing will depend on the types and volumes of wastes generated and the types of processing systems proposed. For a group of consolidated nuclear power plants, it may be possible to achieve the necessary economies of scale to make a centralized processing operation cost-effective. The staff agrees with IDNS that amendments to licenses will be required for a facility accepting wastes for processing or storage from other nuclear power plants. The staff also agrees that regional compact requirements will need to be considered if participating nuclear power plants are in multiple States or compact regions.

The staff has modified the assessment to reflect the above comments.

Discussion:

Nuclear industry consolidation can affect how individual licensees address management of low-level wastes. Regulations applicable to waste management include operational radiation health and safety requirements applicable to all waste generator licensees and requirements for commercial facilities licensed to dispose of low-level radioactive wastes. The Low-Level

Radioactive Waste Policy Amendments Act of 1985 provides a process for siting new low-level waste disposal facilities. Regulations are also in place for transportation of low-level radioactive wastes. Policy guidance for implementing these regulations has been prepared and issued as standard format and content guides, standard review plans, and branch technical positions.

Nuclear industry consolidation has the potential to strengthen low-level waste management programs within licensee organizations by consolidating management of waste disposal activities. The Envirocare disposal facility in Utah currently negotiates disposal charges on a case-by-case basis. Therefore, consolidation may also reduce disposal costs through the negotiation of larger volume contracts. Additional cost savings could also be implemented through the potential use of licensees' own low-level waste volume reduction and processing systems that may become economical for a larger number of plants, rather than contracting for this service. The cost-effectiveness of centralized waste processing will depend on the types and volumes of wastes generated and the types of processing systems proposed. For a group of consolidated nuclear power plants, it may be possible to achieve the necessary economies of scale to make a centralized processing operation cost-effective. Amendments to licenses will be required for a facility accepting wastes for processing or storage from other nuclear power plants. The construction and use of new volume reduction and waste processing systems could generally be implemented through 10 CFR 50.59, without the need for a license amendment. Incineration, however, would require licensing pursuant to 10 CFR 20.2004. Due to the controversial nature of incineration issues, intervention on any such license amendment applications would be likely.

Most nuclear power plants have developed on-site storage facilities as a contingency in the event of short-term interruptions in disposal site availability, as has occurred in the past. Industry consolidation could allow more optimal use of these storage facilities. However, because nuclear power plants generally are not licensed to accept wastes from off-site, license amendments would be required to implement optimized storage programs among several nuclear power plant sites. Indeed, the staff recently issued a license amendment to TVA that allows them to store low-level waste from the Watts Bar facility at Sequoyah. A consolidated on-site waste storage facility could be opened to wastes not generated at that site. Any application for a proposed commercial storage facility for wastes generated elsewhere would have to demonstrate that the storage activities would be safe, there would be no significant environmental impact, and the proposed activities would be consistent with and not compromise safe operation of the nuclear power plant. There would also be a need for transportation of wastes from the point of generation to the centralized storage facility. Due to the controversial nature of waste management and transportation issues, intervention on any license amendment applications is a likelihood. Centralization of storage facilities would need to consider Regional Compact requirements if participating nuclear power plants are in multiple States or Compact Regions. This could require that licensees increase tracking of the origin of the wastes to ensure that State and Compact waste generator reporting requirements are met.

There do not appear to be consolidation efforts among the low-level waste disposal licensees at this time. Programs at low-level waste facilities are driven primarily by external impacts (e.g., decisions related to the closure of the Barnwell low-level waste site) rather than by consolidation. Currently, all low-level waste disposal site facilities are located in and licensed by Agreement States, and there are no new applications projected to be submitted to the NRC.

Impact Assessment:

Regulations and policies addressing low-level waste management and transportation are sufficiently flexible to address license amendments to consolidate on-site storage operations or to use advanced volume-reduction technology. Industry consolidation should have no impact on the availability of low-level waste disposal sites or programs for handling and processing mixed wastes. There does not appear to be a need to revisit the Low-Level Radioactive Waste Policy Amendments Act of 1985 based solely on industry consolidation impacts, although the lack of progress in opening new low-level waste disposal sites, as documented by the General Accounting Office, may require amendment of that statute. DOE and State projections of low-level waste generation may be affected by nuclear power plant license renewals that occur from industry consolidation.

Conclusion:

No follow up action is recommended. It appears that current low-level waste management regulations and policies are sufficiently flexible to accommodate situations resulting from industry consolidation. Therefore, industry consolidation appears to have no significant impact in the waste management area. However, it may be beneficial for the staff to consider the effects of license renewals when providing feedback on long-range DOE and State projections of low-level waste generation.

CATEGORY 1 - PLANT OPERATIONAL SAFETY

Issue 1.e - Emergency Preparedness

Background:

Three comments were received on this issue from NEI, UCS, and NMC. NEI was largely in agreement with the staff's assessment but suggested that the assessment could be improved by recognizing the role of the Reactor Oversight Process (ROP) in flagging potential safety impacts of the licensees' emergency preparedness (EP) programs resulting from consolidation. UCS commented that industry consolidation seems like an excellent opportunity to stockpile potassium iodide (KI) as a public health protective measure in the event of an accident. NMC's comment addressed the staff's concerns in the preliminary impact assessment about centralizing certain emergency preparedness activities. Several workshop comments on this issue were similar to the written comments.

Staff response:

In response to NEI's comment, the staff acknowledges that industry consolidation is likely to encourage increased centralization of Emergency Operations Facilities (EOFs) and sharing of corporate personnel staffing emergency response facilities (ERFs). The ROP inspection procedures evaluate EP performance regardless of the size or arrangement of the licensee's organization or the location of its ERFs. The EP Cornerstone of the ROP is designed to respond to a decline in performance and ensure that the licensee is capable of implementing its Emergency Plan to protect the public health and safety in the event of an emergency.

In response to the UCS comment, a recent rule change, effective April 19, 2001, requires that States or Tribes with population within the 10-mile emergency planning zone of commercial nuclear power plants consider including potassium iodide as a protective measure for the general public to supplement evacuation and sheltering in the unlikely event of a nuclear power plant accident. Further, the Commission has recently offered to supply KI to those States requesting it. The Commission believes the final rule, together with the Commission's decision to provide funding for the purchase of a State's supply of KI, strikes a proper balance between encouraging (but not requiring) the offsite authorities to take advantage of the benefits of KI. By requiring consideration of the use of KI, the Commission also recognizes the important role that States and local governments play in offsite emergency planning. Notwithstanding the staff's actions to date and the fact that the use of KI for the public is an offsite EP responsibility, the staff does not believe that this issue is related to industry consolidation.

In response to NMC's comment, the staff will continue to review licensee requests for EP program changes in accordance with 10 CFR 50.54(q), including those involving the consolidation of functions, organizations, and facilities to determine whether the changes are effective and continue to meet regulatory requirements.

No change to the assessment was needed as a result of these comments.

Discussion:

Emergency preparedness (EP) programs, both on-site and off-site, are sensitive to the impacts of industry consolidation because of the dependence on relationships with State and local governments and facilities where the plants are located. Outcomes of industry consolidation have included centralization of staffs, functions, and facilities remote from individual site locations and the standardization of licensee EP programs and procedures. These outcomes can have both positive and negative impacts. Consolidation can strengthen licensees' programs or, conversely, create problems and deficiencies throughout multiple plant organizations or facilities. There are NRC staff resource implications and challenges to assure that regulations and policies continue to be satisfied and that the NRC's safety assessment processes provide sufficient focus on any proposed changes. Changes that impact offsite emergency preparedness are coordinated with the Federal Emergency Management Agency (FEMA) as well as affected State and local authorities.

Impact Assessment:

The NRC must be alert to potential safety impacts of EP program changes resulting from consolidation. Industry consolidation has already resulted in some centralized Emergency Operations Facilities (EOFs), with the corporate headquarters serving as the location for and source of personnel to staff the EOF. Shared Emergency News Centers are another result of consolidation, with licensee corporate personnel staffing these facilities. Efficiencies can result when one EOF is capable of effectively serving multiple nuclear sites.

Some concerns associated with centralized emergency preparedness facilities remote from the site area include the potential loss of expertise local to the facility and maintenance of local contacts with first responders. Corporate personnel may face challenges in maintaining knowledge of the plant(s), local organizations, and procedures. However, centralized, shared facilities and staffs can strengthen EP programs. In addition, communications capabilities have improved in recent years and the need for close proximity to the site may not be as great as it was previously thought to be. Consolidation of EOFs affecting multiple States and/or local authorities can present challenges in accommodating differences among these offsite entities and meeting the needs of local constituencies. A major factor in the location of the EOF is ensuring the capability for effective communication and response among the licensee, the State and local emergency response organizations, FEMA, and NRC relative to protective action decision-making and implementation of protective actions.

Another area of potential impact is the incentive for increased use of standardized emergency response procedures across multiple reactor facilities. Standardized procedures have positive and negative aspects. They can result in a better procedure and the ability to cross-utilize staff at multiple facilities. However, a licensee may be more reluctant to modify standardized procedures for needed changes, due to the number of facilities affected by procedure changes and potentially increased training needs.

NRC has reviewed industry requests for consolidation of emergency response facilities (ERFs), changes in emergency plans and procedures, Emergency Action Levels (EALs), and emergency organizations as a result of consolidation. The NRC evaluates proposals for centralized EP staffs, programs and facilities and, indeed, has approved such proposals in the

past. Commission-level approval is required for centralized EOFs and EOFs located more than 25-miles from a nuclear power plant site. The NRC coordinates with FEMA and States when emergency planning changes are contemplated that affect offsite preparedness. This coordination is adequate to ensure the offsite preparedness is not adversely effected by future changes.

Conclusion:

No follow up action is recommended. Given the ongoing industry consolidation, the potential exists that owners of multiple facilities will continue to seek consolidation of EP program functions and organizations. This suggests that existing NRC processes may be used to monitor, trend, and assess staff resource implications and potential safety challenges to assure that regulations and policies continue to be satisfied and that the NRC's safety assessment processes provide sufficient focus on emergency preparedness.

CATEGORY 1 - PLANT OPERATIONAL SAFETY

Issue 1.f - Reliable Off-site Power

Background:

Five written comments were received from NEI, UCS, NRSG, INPO, and one individual. NEI agreed with the NRC staff's preliminary assessment. UCS and INPO commented on the industry's Equipment Performance and Information Exchange (EPIX) system. The UCS comment related to public availability of the EPIX information. The INPO comment focused on the scope of the EPIX system relative to grid problems. The comment by NRSG addressed the formation of Regional Transmission Organizations (RTOs) and their role in the reliability of off-site power. The comment from the individual involved the use of non-nuclear auxiliary power generators to improve off-site power reliability.

Comments received at the NRC's public workshop amplified on the issue of RTOs. Some stakeholders provided more recent information on the status of actions underway to set up RTOs and expressed concerns regarding reliable off-site power for nuclear power plants during the transition period when such entities are on a learning curve. Several stakeholders suggested that close monitoring by NRC of developments on RTOs is in order.

Staff response:

With respect to the use of auxiliary generators to improve off-site power reliability, the staff monitors developments related to industry consolidation which might impact off-site power reliability consistent with recommendations in SECY-99-129, "Effects of Electric Power Industry Deregulation on Electric Grid Reliability and Reactor Safety" dated May 11, 1999. Consistent with recommendations in SECY-99-129, the staff will take under consideration any additional regulatory requirements, such as black-start generators, necessary to meet off-site power requirements based on operational data and risk-informed analysis. There is no need to make any changes in the staff's assessment.

Regarding public availability of the EPIX system developed by INPO, the staff recognizes the concerns expressed regarding the use of non-public information to make regulatory decisions. However, it is not inappropriate for NRC to rely on database systems such as EPIX in evaluating potential safety issues that might arise relative to response of a plant to off-site power disturbances. On balance, safety is better served by the NRC using the best available information rather than to forego the type of information in EPIX. The staff agrees with the comment that grid problems would not be reported in EPIX. Hence, the relevant sentence in the "Preliminary Impact Assessment" has been modified appropriately.

Addressing the comments on RTOs and their role in the reliability of off-site power, the staff is aware of the formation of the RTOs and is monitoring their development and evolving role. The staff's preliminary impact assessment has been modified to take account of the RTOs. Any changes in the level of involvement of the NRC with RTOs will be predicated on the results of the monitoring effort.

Discussion:

As described in Issue 8.a, the primary concerns that arise with respect to off-site power reliability are a result of economic deregulation rather than industry consolidation. Stability and reliability of off-site power are significant safety considerations in the regulation of nuclear power plants. The primary reason is that off-site power is the preferred source of electrical supply to operate decay heat removal systems. Hence, although highly reliable on-site emergency diesel generators are available to assure capability to shut down the plant safely and provide for transfer of decay heat to the ultimate heat sink temporarily, a reliable off-site power supply is important for long-term safety. The NRC has a significant interest in monitoring challenges to the operation and management of the electric power grid so that appropriate actions can be taken to address concerns regarding reliability of off-site power.

From the perspective of plant operational safety, the potential challenges to the reliability of off-site power can affect the results of risk analyses used in safety related decision-making. Increasingly, both licensees and the NRC staff use probabilistic risk assessments (PRAs) for risk-informed decision-making. Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," provides the guidance needed for making licensing decisions using risk insights that may derive from the impacts of changes due to economic deregulation. New information based on grid experience after economic deregulation may have to be considered in estimating the frequency of initiating events where off-site power plays a role. Most of the information needed is likely to be readily available from the grid operators. This information is likely to be a part of submittals made by licensees in support of licensing actions.

In recognition of the importance of assuring the stability and reliability of off-site power the industry, as well as the NRC, has implemented programs and other initiatives to address this challenge. The NRC issued Regulatory Issue Summary 2000-24 on the subject in December 2000. NEI and INPO sponsored a workshop on offsite power reliability in April 2001, in which NRC staff participated. In 1999, INPO issued SOER 99-1, which provides guidelines for good practices in support of grid reliability and is currently conducting an audit of licensees to determine the degree of conformance to these good practices.

Impact Assessment:

Reliability of off-site power lately has been receiving considerable attention. Most of the external stakeholders include other government agencies with regulatory responsibilities, in addition to the industry. Communication channels have been established with various stakeholders and are improving as experience is gained. The staff has become aware of the formation of Regional Transmission Organizations (RTOs) and their potential role in the reliability of off-site power, and is monitoring their development through appropriate interaction with the cognizant stakeholders. Also, the Institute for Nuclear Power Operations (INPO) has developed the Equipment Performance and Information Exchange (EPIX) system, which, in the future, may enable information to be obtained regarding equipment that responds to off-site power disturbances. This information may be used to update PRAs.

Relative to operational safety matters, the body of regulations currently in force provides for safe operation, shutdown, and decay heat removal from nuclear power plants. The established

lines of communication with industry and other stakeholders, especially those concerned with economic deregulation, are expected to provide timely information if safety issues arise. In addition, the NRC has in place the needed infrastructure (such as a Memorandum of Understanding with the Electric Power Research Institute) to obtain and assess information affecting off-site power reliability.

Conclusion:

No follow up action is recommended. The NRC will continue its ongoing efforts to monitor developments relative to grid operation.

CATEGORY 2 - LICENSING

Issue 2.a - License Transfer Process

Background:

Three comments were received from NEI, UCS, and one individual. NEI agreed with the staff's preliminary assessment. UCS commented on the inappropriate closure of a number of licensing commitments before a plant sale and recommended that the assessment recommendations be revised as appropriate from the outcome of an ongoing NRC investigation of that issue. The individual commented on the lack of incentives for owners to make plant repairs before a plant sale.

Staff response:

In response to the individual's comments, the NRC's ROP would identify any maintenance or material deficiencies in the plant and this would result in appropriate agency response to ensure the licensee's compliance with plant safety standards. The NRC obtains, reviews, and assesses all relevant organizational and financial information associated with each license transfer to determine whether the proposed transferee is qualified and the transfer is otherwise consistent with the law and NRC regulations. The NRC is alert for evidence that licensees who have decided to sell their nuclear plants, may no longer have the incentive to invest in safety or maintenance improvements, or take necessary corrective action to address identified problems, pending transfer of responsibility and liability to the license transferee. The staff considers such indications as part of its oversight processes and assures that appropriate corrective actions are taken, regardless of whether a sale is pending.

In response to UCS's comment regarding the ongoing investigation, once the investigation is completed, any staff findings will be addressed as appropriate.

No change to the assessment was needed as a result of these comments.

Discussion:

The NRC responsibilities for the transfer of a license are set forth in 10 CFR 50.80, "Transfer of Licenses." From 1998 through the present, the staff has received license transfer applications for about 100 nuclear power reactor units. Most of the reviews for these applications have been completed except for a few that were submitted recently. Applications for transfer of a license include information on the identity and technical and financial qualifications of the proposed transferee, as well as any additional information that the Commission requires, such as radioactive material safeguards protection, and certain information related to the purpose of the transfer and the nature of the transaction necessitating the transfer. The NRC must obtain, review, and assess all relevant organizational and financial information associated with each license transfer to determine whether the proposed transferee is qualified and the transfer is otherwise consistent with the law and NRC regulations. Transfer of the license is by issuance of an order and, where necessary, a conforming amendment.

A concern has been raised by some external stakeholders that once a licensee has decided to sell its nuclear plants that licensee may no longer have the incentive to invest in safety or maintenance improvements, or take necessary corrective action to address identified problems, pending transfer of responsibility and liability to the license transferee. The stakeholders' proposed resolution to this concern is that the NRC staff consider such indications in its license transfer reviews and make the correction of physical or performance problems a condition of transfer approval.

Impact Assessment:

The staff believes that the current license transfer process is effective. It appears likely that license transfer applications will continue to be submitted, and completed transfers will continue to be reviewed for lessons learned to improve the effectiveness of the process.

The concern that a licensee planning to sell its plant might no longer place a high priority on safety initiatives is accommodated by the staff's oversight process, as discussed in Issue 3.a. The NRC closely monitors the transfer process to ensure that NRC regulations and license requirements are met regardless of any pending sale. Further, the new license holder has a strong incentive to assure that the plant will meet NRC requirements upon completion of the transfer. The staff has had considerable experience with the license transfer process during the past few years and has seen only one example that appears to support this concern. This situation involved a plant that had a number of significant performance issues existing prior to and during a pending sale period. That sale period was protracted and progress in addressing equipment and human performance issues slowed considerably in the latter phase of the sale process. It appears that the buyer was unable to address them until the transfer was complete.

Conclusion:

Given that the staff has only seen one isolated example that supports the concern discussed in the Impact Assessment section above, no follow up action is recommended.

CATEGORY 2 - LICENSING

Issue 2.b - New License Applications, Site Approvals, and Reactivations of Deferred Plants

Background:

Three comments were received from NEI, UCS, and NRSRG. NEI commented on the need for timely decisions on the scope of National Environmental Policy Act (NEPA) reviews and the treatment of previously reviewed information at existing sites. UCS commented on the funding and staffing for the NRC's Future Licensing Organization, now called the New Reactor Licensing Project Office (NRLPO). NRSRG commented on the need to achieve efficiencies in the power uprate review process.

Staff response:

In response to the NEI comment related to timely decisions on the scope of NEPA reviews and the treatment of previously reviewed information at existing sites, the NRC notes that both issues are subjects of recently received NEI petitions for rulemaking. Both petitions are subject to the NRC process for reviewing petitions for rulemaking (NUREG-BR-0053, Revision 5).

In response to the UCS comment related to the funding and staffing for future licensing, the NRLPO was established in FY 2001 with available resources. Using the established PBPM process for setting strategic directions and budgeting resources, the NRC routinely ranks its projects and activities based on the agency's performance goals, often referred to as the "four pillars": maintaining safety; increasing public confidence; reducing unnecessary regulatory burden; and making NRC activities and decisions more effective, efficient and realistic. New work not previously identified in the budget process, such as future licensing activities, is evaluated and added while other, lower priority, work is stopped or delayed as a result. The redirection of resources in FY 2001 to address future licensing activities, including the staffing of NRLPO, did not affect the staff's ability to ensure the adequate protection of public health and safety at existing operating facilities, as maintaining the safety of the operating nuclear power reactors remains the NRC's highest priority.

In FY 2002, the Congress appropriated an additional \$10 million to enable the NRC to prepare for and respond to new reactor initiatives without jeopardizing NRC programs for the safety of operating facilities or impeding other important ongoing initiatives. To keep pace with the industry interest, the NRC has included resources for new reactor initiatives in the FY 2003 budget request. The discussion in Issue 2b was revised to reflect this updated information.

In response to the NRSRG comment about improving the efficiencies of the power uprate reviews, the staff has taken the initiative to improve the review process for measurement uncertainty recapture power uprates. Measurement uncertainty recapture power uprates are on the order of 1.5 percent and are achieved by implementing enhanced techniques for calculating reactor power. The staff recently issued Regulatory Issue Summary 2002-03 that provides guidance on the content of applications for such power uprates. The staff is reviewing its process for both stretch power (about 7 percent) and extended power uprates (up to 20

percent). Current power uprate reviews being performed by the staff are being assessed to determine what improvements and efficiencies can be incorporated in future reviews.

The assessment of this issue has been modified to reflect these stakeholder comments.

Discussion:

A consolidated nuclear power industry consisting of larger, financially strong nuclear operators is more likely to consider new plant applications, standard design applications, power uprates, reactivation of deferred plants, and site approval applications. There already is industry consideration of new reactor design applications (such as the pebble-bed-type standard design) within the next few years.

With larger, more stable licensees, the costs associated with new nuclear power plant planning and construction can be more readily supported. These new units likely would serve as merchant power plants for the owner. New construction may also involve multiple corporations pooling their resources to build new facilities.

The NRC has been monitoring industry activities in this area. The Commission has stated in COMSECY-00-0026 (REVISED FY 2000-2005 STRATEGIC PLAN) that the staff has an important ongoing initiative to improve the regulatory infrastructure associated with new plant construction (10 CFR Part 52) and that improving this infrastructure should serve to improve the efficiency, effectiveness, predictability, and consistency of the combined license review process. The staff is also reviewing two NEI petitions for rulemaking that address timeliness and scope of NEPA reviews and treatment of previously reviewed and approved information at existing sites.

With respect to power uprates, the staff has undertaken initiatives to improve the efficiency and timeliness of the review processes for measurement uncertainty recapture, stretch power, and extended power uprates.

Impact Assessment:

The staff will need to assure that the necessary staff resources, expertise, organizational infrastructure, review processes, and guidance are available to support future activities in this area. In addition, current regulations and processes may need to be reviewed. New guidance and rule changes may be needed on the scope of the review, as well as for antitrust and foreign ownership issues. The Commission directed the staff in COMJSM-00-0003, "Staff Readiness for New Nuclear Plant Construction and the Pebble Bed Reactor," to assess existing capabilities and identify needed enhancements to process an early site permit application, a license application, and construction of a new nuclear power plant. It also directed the staff to assess and identify needed enhancements to the regulatory infrastructure supporting applicable regulations, with emphasis on identification of regulatory issues and potential process improvements. In response to this directive, the NRC established the New Reactor Licensing Project Office within the Office of Nuclear Reactor Regulation and the Advanced Reactor Group within the Office of Nuclear Regulatory Research to coordinate an interoffice effort to assess the needed technical, licensing, and inspection capabilities to ensure that the agency can

effectively carry out its future licensing activities. The staff's assessment of its readiness to process future applications for early site permits, standard design certifications, combined licenses for commercial nuclear power plants, and reactivation of construction at deferred plants, was presented to the Commission in SECY-01-0188.

Conclusion:

No follow up action is recommended. Renewed interest in new license applications is attributable, at least in part, to industry consolidation. The Commission and staff have had several meetings with industry representatives who are formulating plans for possible site and plant license application submittals in the next few years. The staff already has initiatives underway to prepare for such submittals. These ongoing initiatives appear to be sufficient and should be responsive to industry developments and evolving plans. In FY 2002, Congress appropriated an additional \$10 million to enable the NRC to prepare for and respond to new reactor initiatives without jeopardizing NRC programs for the safety of operating facilities or impeding other important ongoing initiatives. To keep pace with the industry interest, the NRC has included resources for new reactor initiatives in the FY 2003 budget request.

CATEGORY 2 - LICENSING

Issue 2.c - License Renewal

Background:

Two comments were received from NEI and NRSRG. NEI agreed with the staff's preliminary assessment. NRSRG commented on the need to streamline the license renewal process and improve efficiencies in the power uprate review process.

Staff response:

In response to the NRSRG comment on further streamlining the license renewal process, the staff has recently issued the Generic Aging Lessons Learned (GALL) report, the Standard Review Plan (SRP) for License Renewal (NUREG-1800), and Regulatory Guide 1.188, "Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses." The St. Lucie license renewal application, submitted in late November 2001, is the first such application that was prepared using the guidance in these documents. The staff review of this and subsequent license renewal applications is expected to provide additional lessons learned or efficiencies gained and incorporate these improvements in future guidance updates.

The assessment has been modified to reflect this comment.

Discussion:

The number of future license renewal applications is expected to increase as a result of consolidation. Some reactors that were not considered to be candidates for license renewal could be reevaluated as a result of consolidation. With larger, more financially stable nuclear power plant owners, increased competition in power generation, and because of cost benefits, there is increased incentive to extend the licenses of currently operating nuclear power plants. License renewal is seen by licensees as a cost-effective means of adding capacity. It is anticipated that virtually all of the currently operating plants will seek license renewal.

The license renewal process for power reactors relies on a review of the licensing basis and plant design, scoping, and screening of structures and components that need to be subjected to an aging management review and evaluation of time-limited aging analyses.

Impact Assessment:

The staff recognizes the potential resource impacts of the receipt of an increased number of license renewal applications, some of which may not have been in the planning assumptions. The NRC has published Regulatory Issue Summary 2000-20, which encourages licensees to inform the staff as soon as possible of their plans for license renewal. The staff uses the PBPM process to budget for applications for which the staff has been notified of submittal dates and to respond to emergent work. In order to improve the efficiency and effectiveness of the license renewal process, the staff recently issued the Generic Aging Lessons Learned (GALL) report, the Standard Review Plan for License Renewal (NUREG-1800), and Regulatory Guide 1.188,

“Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses.” Additionally, the staff has successfully worked with NEI and Industry to pace the submittals so we can better schedule our resources and continue to meet industry needs.

However, license renewal is a voluntary initiative and the decision to renew an operating license is largely a business decision over which the NRC has no control. In addition, a greater number of renewal applications could result in already established submittal dates being changed as consolidated licensees re-evaluate and re-prioritize their license renewal plans.

Conclusion:

No follow up action is recommended. As consolidation progresses, continuing the NRC staff's efforts of being engaged with the industry as to changing license renewal plans and schedules and modify resource planning assumptions and review processes accordingly is appropriate.

CATEGORY 2 - LICENSING

Issue 2.d - NRC Organizational Structure

Background:

Three comments were received on this issue from NEI, NRSB, and NMC. NRSB recommended that the NRC should be able to achieve greater efficiencies through consolidation of its own organization and reduce redundancy in the organizational structure. The commenters further recommended that the NRC consider consolidating certain regional reactor oversight functions in Headquarters, thereby promoting greater consistency in reactor oversight and inspection activities. This would keep these programs more risk-informed and performance based. Both NEI and NMC concurred with the staff's preliminary impact assessment.

A workshop comment, somewhat related to organizational structure, cautioned that the NRC must be alert to excessive staff reductions imposed by budget cuts, so as to assure the availability of adequate resources for all important regulatory activities, including those needed to realize the full potential benefits of consolidation.

Staff response:

In response to the workshop comment, the NRC's annual budget request process adequately reflects anticipated needs for all programs. However, the NRC's PBPM process assures that the resources authorized in the budget are made available for the most important regulatory activities. PBPM is a continuous process that identifies and prioritizes programs and resources to support the direction and goals, and measures and assesses performance in achieving the strategic direction and goals. The staff believes that this adequately addresses the stated concern and that no change to the assessment was needed.

The NRSB comment is addressed as part of the staff response to Issue 3.a comments.

Discussion:

Traditionally, licensees have operated within limited geographical service areas and have had to interface with just one regional office and one headquarters project directorate. As a result of consolidation, some licensees may have to interact with as many as four regional offices and headquarters project directorates. This is likely to introduce management challenges, both for the staff and the licensees, especially with respect to consistent, coordinated, efficient, and effective regulatory oversight.

The Commission stated in COMSECY-00-0026 (REVISED FY 2000-2005 STRATEGIC PLAN) that the staff needs to assure that NRC stakeholders recognize the importance the Commission places on regional consistency and coordination. With deregulation proceeding in the electric industry and with continuing applications for license transfers, the NRC will see an increase in the number of cross-regional licensees. While consistency and coordination between and among headquarters and the regions have been high priorities for the NRC, the increase in

cross-regional licensees represents a growing challenge in these areas warranting greater management oversight.

Impact Assessment:

The industry is currently in a state of transition and significant consolidation is relatively recent. Thus, it is premature to identify potential challenges to the current NRC organization, or to consider alternative organizational structures.

With respect to the question of whether the existing regional boundaries and currently assigned licensee oversight responsibilities will facilitate efficient and effective regulation of those licensees that own and operate reactor facilities in multiple regions, the key is effective NRC management oversight to assure consistency in implementing its programs. Measures that have been developed to assure consistent application of oversight processes include various periodic meetings with regional and headquarters management to discuss program implementation issues, conducting annual self-assessments, development of metrics for inspection procedures, program office audits of regional inspection reports, and obtaining industry stakeholder feedback. Consistent application of the Significance Determination Process among regions will be particularly important. Increased communications, both formal and informal, among the respective regional staffs are necessary to share insights when programs and processes are transferred from one licensee to another. Increased communications and coordination among regional staffs may also result in a broader look at a particular performance issue.

Conclusion:

Within the next few years, the regional and headquarters staffs will gain significant experience in regulating and otherwise interacting with consolidated licensees. This experience should be monitored so that a meaningful assessment of the impacts of consolidation on the NRC organization can be made at the appropriate time.

Should significant changes occur in the industry, the staff will consider a follow up effort to establish a consistent, agency-wide process to monitor and document relevant staff experience and stakeholder feedback and to establish meaningful assessment criteria for evaluating this experience and feedback. A principal objective of this effort would be an assessment of the impact of industry consolidation on both the efficiency and effectiveness of the agency's current organizational structure. This effort would be considered using the PBPM process.

CATEGORY 3 - INSPECTION, ENFORCEMENT, AND ASSESSMENT

Issue 3.a - NRC Reactor Oversight Process (ROP)

Background:

Six written comments on this issue were received from NEI, UCS, NMC, NRSRG, and two individuals. Comments were also received from two stakeholders at the public workshop.

- 1) The NEI and NMC comments and the comments received at the public workshop addressed the need for an inspection module or “contingency plan” to facilitate NRC assessment of a licensee facing financial difficulties/pressures. Both NEI and NMC stated that such a module or plan was not needed.

Staff response:

NEI stated that the “ROP, as designed and now in effect, provides adequate assurance that the NRC can assess whether there are safety significant performance issues at nuclear power plants which may have resulted from industry consolidation or *financial pressures* [emphasis added].” NEI further stated that “if there were any financial concerns which resulted in cutbacks in staff or reductions in safety-related activities such that there was some *meaningful* impact on safety, the existing residents and baseline inspection programs should clearly identify them.”

The inspection activities of resident inspectors at each facility are governed by the ROP, which consists of baseline, supplemental, and plant status inspections. These inspection activities are specifically targeted toward evaluating safety performance problems deriving from licensee actions regardless of any pressure. While NEI is correct that the resident inspectors focus separately on “plant status,” the purpose of the inspection activities in this area, as defined by Appendix D, “Plant Status,” to NRC Manual Chapter 2515, “Light-Water Reactor Inspection Program-Operations Phase,” is to facilitate selecting and implementing the appropriate baseline inspection procedures based on knowledge of plant activities and risk-significant evolutions. As defined by Appendix D, plant status activities consist of control room walkdowns, plant tours, and attendance at “status” meetings so that the inspectors are aware of emergent plant issues, current equipment problems, and ongoing activities that impact plant risk.

As stated in Appendix D, the purpose of the control room walkdown (observing the indicated parameters and equipment configuration indications on the control boards) is to enable the inspector to identify unexpected plant conditions that warrant additional inspection under the baseline inspection program. The purpose of conducting plant tours is to obtain an independent perspective of ongoing activities that may affect plant performance, e.g., unauthorized modifications to structures, systems, and components (SSCs) that could affect the SSC’s function; status of on-site and off-site emergency response facilities; material condition of SSCs such as any leakage involving radioactive liquids or gases. The purpose of attending status meetings is to gather information about overall site activities in order to determine what activities will be or are being conducted so that inspection resources can be appropriately focused on those activities with higher safety significance. Following the guidance in Appendix D, the inspector is expected to attend licensee meetings “that provide an overall status of the plant and pertinent ongoing activities” such as the licensee’s plan-of-the-

day meeting, shift turnover meeting, emergent work meeting, equipment prioritization meeting, and corrective action document review meeting.

None of the activities described under plant status are intended to evaluate the potential for a licensee, when faced with financial pressures, including potential bankruptcy, to make decisions that might have long-term effects on operational safety.

Commenters at the public workshop stated that the ROP should be the vehicle for evaluating the safety performance of a licensee facing financial difficulties, basically a “one size fits all” approach. Also, NMC submitted a written comment that “emphasis should continue to be placed on the development and evolution of the ROP such that it serves as a leading indicator to performance problems and will aid the NRC in identifying the need to review a licensee with financial difficulties.” The staff agrees with these comments, but recognizes that there is insufficient experience with implementation of the ROP in a consolidated industry environment to conclude that the ROP has evolved to this point.

Regarding NMC’s comment that “it is not appropriate for the NRC to be involved in the financial decisions of a licensee unless it is shown to be having an impact on safety,” the key, from the staff’s perspective, is being able to determine if there **will be** [emphasis added] an impact on safety rather than waiting for the safety impact to become self-evident.

The staff’s assessment has been modified to recognize these comments.

- 2) One stakeholder at the workshop suggested that the staff’s final report on the effects of industry consolidation include some anecdotal information on the NRC’s experience with its oversight of Southern California Edison and Pacific Gas and Electric during the recent period when these two licensees were facing substantial financial difficulties.

Staff response:

This recommendation was provided in response to a discussion at the public workshop regarding whether safety performance problems deriving from licensee actions in response to financial pressures would surface at a significance level and in a time frame that would allow the NRC to engage a licensee via the ROP to ensure appropriate root cause evaluation and corrective action before the safety performance problem becomes a significant concern. The staff commented that there has not been sufficient experience to validate whether a licensee facing financial pressures will make non-conservative decisions that result in significant safety concerns whereby the underlying performance problems have not been identified via the ROP in a timely manner. The staff also commented that while the NRC exercised proper oversight of the Southern California Edison and Pacific Gas and Electric licensees, the oversight activities were not fully bounded by the ROP as it is currently defined.

The staff’s assessment has been modified to include reference to the NRC’s experience with its oversight of Southern California Edison and Pacific Gas and Electric during the period when these two licensees were facing substantial financial difficulties.

- 3) Two of the written comments addressed the issues of consistency and efficiency of NRC oversight for licensees that cross regional boundaries. NEI stated that issues of NRC

consistency and efficiency continue to exist and must be addressed regardless of industry consolidation. NRSRG stated that the NRC should achieve organizational efficiency by shifting certain region-based reactor oversight programs to its headquarters' office.

Staff response:

Regarding the issue of consistency, the staff agrees with the need to ensure consistent implementation of its regulatory oversight activities across regional boundaries, independent of industry consolidation. The NRC uses its detailed procedures which provide specific guidance on implementation of the various oversight processes, e.g., Manual Chapter 2515, the Enforcement Manual, and Management Directive 8.5, "Allegations"; self-assessment processes, e.g., inspection, allegation, and enforcement program audits; and frequent communications between regions and the program office, to ensure that its regulatory oversight programs and processes are being implemented in a consistent manner. The NRC also places a premium on obtaining feedback, with specific examples, from the regulated industry when there are indications that the NRC has not implemented its regulatory processes consistently.

Regarding the issue of organizational efficiency, regional offices with cross-regional licensees have increased communications to ensure consistency and efficiency in application of the ROP. For example, Region III staff and management engage in periodic discussions with their respective counterparts in Region I to discuss ROP implementation issues affecting the effective and efficient regulatory oversight of Exelon. In addition, Exelon management periodically visits the NRC headquarters office to provide the staff with "status of the fleet" presentations. This affords the NRC staff an opportunity to engage the licensee on cross-cutting performance or regulatory issues. Similarly, it provides the licensee with an opportunity to engage the NRC staff on any issues pertaining to effectiveness, efficiency, and consistency in implementation of the ROP.

Consolidation is a relatively recent phenomenon and the staff has only limited experience in implementing the ROP with cross-regional licensees. To date, the staff has not identified any significant challenges in implementing the ROP with consolidated licensees. (Refer to Issue 3.a for a discussion of the potential challenges in using the ROP, as currently structured, to identify adverse safety performance trends deriving from licensee actions in response to financial pressures). However, even in the absence of problems, the NRC continuously seeks opportunities to improve the efficiency and effectiveness of its processes, functions, and organization. The staff agrees that industry consolidation may provide such an opportunity. At present, there is insufficient experience to justify any significant organizational changes such as shifting region-based ROP functions to the headquarters' program office.

No change to the staff's assessment of this issue is necessary as a result of these comments.

- 4) A UCS comment addressed its petition for rulemaking that would require licensees to submit Performance Indicator (PI) information since submittal of PI information is currently voluntary.

Staff response:

In highlighting the need for rulemaking, UCS described a potential scenario whereby a consolidated licensee elects not to submit PI information on a voluntary basis because that information reflects “unacceptable” licensee performance, which would require a plant shutdown upon NRC application of the Agency Action Matrix. UCS commented that because “the NRC lacks the inspection resources to replace PI data,” the ROP, and consequently, public safety, is dependent upon licensees voluntarily providing PI data.

In assessing overall licensee performance within the framework of the ROP, the NRC uses both PI information submitted by licensees and the results of baseline inspection activities. The PI data represents objective information pertaining to licensee performance. In the event that this information is not available due to unique circumstances such as plant startup after an extended outage where there has been insufficient time for the accumulation of meaningful data, or in the unlikely event that a licensee chooses not to provide the information, the NRC would respond in accordance with the established processes to ensure the needed information is obtained and reviewed. This is the approach exercised by the NRC in the case of D. C. Cook, which had been shut down for more than three years.

Regarding the availability of resources to conduct any required additional inspections, should there be a resource shortage, the NRC would use its Planning, Budgeting, and Performance Management process to redirect resources from lower priority activities given the relative importance of accurately assessing overall licensee safety performance. The NRC could also choose to issue a Demand for Information to affected licensees in order to obtain the PI information.

No change to the staff’s assessment of this issue is necessary as a result of this comment.

- 5) A written comment from an individual addressed the need for the NRC “to take a close look at upper level management changes.”

Staff response:

The NRC uses the “performance-based” concept in assessing licensee safety performance. This means that NRC action, or the degree of regulatory engagement, is a function of licensee performance. Those licensees exhibiting adverse performance trends receive an increased level of NRC oversight. The level of NRC oversight is not a function of what managers are in place, but is determined by overall licensee safety performance as evaluated through the ROP.

No change to the staff’s assessment of this issue is necessary as a result of this comment.

- 6) A workshop comment addressed the public availability of information when a licensee conducts a self-assessment, including an evaluation by INPO, of a particular area in lieu of the NRC conducting an inspection in that area. During the discussion of this issue at the workshop, another stakeholder commented that with increasing consolidation, the industry will want to make greater use of self-assessment activities in the regulatory process.

Staff Response:

The staff agrees that if the licensee conducts a self-assessment of its performance in a particular area in lieu of the NRC conducting a specific inspection within the context of the ROP, and the NRC uses the results of that self-assessment in evaluating licensee performance, then some type of written record needs to be provided to the public which clearly communicates the basis for the NRC's conclusions regarding licensee performance.

Regarding the industry's desire to more extensively use self-assessments as a substitute for NRC inspection activities, the NRC has successfully used this approach in the past. Specifically, the Electrical Distribution System Safety Functional Inspections and the Service Water System Functional Inspections are examples of where licensee self-assessment efforts, with an appropriate degree of NRC oversight, were accepted as substitutes for NRC inspections. However, as the staff noted at the workshop, the NRC decided not to credit licensee self-assessments in lieu of conducting NRC inspections during at least the first year of full implementation of the ROP. As the NRC gains experience with implementation of the ROP, the NRC will further evaluate the viability of allowing licensees to conduct self-assessments in lieu of NRC inspection. The NRC staff has initiated discussions with both internal and external stakeholders on this initiative.

The staff agrees with the stakeholder comment that the results of licensee self-assessments need to be communicated to the public in an appropriate manner if the NRC relies on those self-assessments in lieu of conducting NRC inspections. However, this is not an issue related directly to industry consolidation. Consequently, no change to the staff's assessment is considered necessary as a result of this comment.

- 7) A comment was made at the workshop that the "NRC should monitor the effects of industry consolidation where disparate corporate cultures attempt to merge."

Staff response:

The ROP is structured to focus on licensee performance results. If safety performance problems arise because a licensee has not integrated "corporate cultures" effectively, the resulting adverse performance trend should be flagged by the ROP. The staff would then engage the licensee at an appropriate level as a function of the safety significance of the performance problems. The NRC, via the ROP, does in essence "monitor the effects" of any activities if those activities translate to safety-significant issues. To the extent that "industry consolidation where disparate corporate cultures attempt to merge" results in safety-significant licensee performance problems, the NRC does monitor those effects.

No change to the staff's assessment of this issue is necessary as a result of this comment.

Discussion:

In evaluating the potential impact of industry consolidation on effective implementation of the reactor oversight process (ROP), a number of issues need to be considered. One of the

principal considerations is whether the ROP will provide the NRC with assurance that licensees are maintaining public health and safety in a consolidated/deregulated environment. The ROP is performance-based, meaning the level of NRC engagement is a function of licensee performance. It is also structured to be “indicative” rather than “diagnostic,” meaning the inspection and assessment processes within the ROP are designed to provide an indication of licensee problems, e.g., performance indicators (PIs) and associated thresholds, rather than to determine the specific root causes for issues of lesser significance. This raises the question of whether the ROP enables the NRC to address adverse performance trends that might result from consolidation-related cost-cutting initiatives, which could be driven by financial pressures, or non-conservative changes to corporate policies, programs, and procedures, before they evolve into significant safety issues.

Industry consolidation could result in staffing reductions as licensees seek to increase their efficiency of operations by eliminating redundant functions and standardizing “best practices.” If the staffing reductions are substantive, not targeted appropriately, and/or not managed well, problem identification and resolution functions could be impacted as key staff leave the company. Licensee efforts to increase operational efficiency could also result in changes to corporate policies, programs, and procedures. If these changes are non-conservative, the effectiveness of problem identification and resolution activities could be adversely affected. For example, a licensee could adopt a corrective action program with higher thresholds for initiating a root cause evaluation. This could result in more significant problems developing, as the root causes for lower level issues are not addressed. It is important to note that, while these postulated scenarios are possible, experience to date with consolidated licensees has demonstrated that the opposite is true. Changes associated with the integration of individual facilities into consolidated entities have generally been well managed and produced positive performance results.

The situation that existed in California in early 2001, where the Southern California Edison and Pacific Gas and Electric companies faced substantial financial difficulties, including potential bankruptcy, generated a number of questions regarding the NRC’s role in ensuring public health and safety. The NRC initiated a number of actions to ensure an appropriate regulatory response to the developing situation, which included measures to ensure the licensees were maintaining reactor safety and to increase public confidence. The NRC monitored site activities for any impact from licensee actions, established a multi-disciplined team from various NRC offices to deal effectively with the potential bankruptcy of one or both licensees, conducted weekly phone calls with licensee management to monitor each licensee’s financial status, and developed a management oversight plan to include a monthly visit to each site by a senior NRC manager. The NRC also drafted an “options” plan for the regulatory response to a bankruptcy situation. Furthermore, the NRC implemented a number of compensatory actions to supplement the ROP baseline inspection program. These included tracking the licensee’s operational and maintenance budget and capital budget to identify short-term and long-term changes, respectively; tracking licensee staffing levels, corrective maintenance backlog, overdue preventive maintenance activities, work schedule adherence, and refueling outage plans; monitoring emergency preparedness functions, e.g., siren and offsite communications capabilities; evaluating licensee actions to ensure the reliability of offsite power to the nuclear units; and assessing licensee public communications initiatives.

Collectively, these compensatory actions and monitoring activities revealed that there was no adverse impact on safety as a result of the licensee’s financial difficulties. Nevertheless, the

NRC implemented these actions in recognition of the potential for significant financial pressures on a licensee to result in decisions to reduce the workforce, revise the scope of and/or delay planned maintenance and modification activities, shorten or delay plant outages, terminate licensing classes or training initiatives, etc. While these decisions would likely result in performance problems, it is not clear how significant those problems may be or in what time frame they would emerge. Assuming that some licensee decisions would have short-term and substantive effects on performance, and given that the NRC focus is on safety performance, a critical question is whether the NRC's safety assessment processes, as currently defined by the ROP, are structured to ensure that the NRC becomes aware of these performance issues in sufficient time to engage the licensee with the appropriate focus. For those licensee decisions that provide short-term financial relief but have a longer-term impact on performance, the question is how significant the associated performance issues would be when they first surface.

Another issue warranting consideration is whether the existing regional boundaries and currently assigned licensee oversight responsibilities will facilitate effective regulation, within the context of the ROP, for those licensees that own and operate reactor facilities in multiple regions (refer to Issue 2.d). Licensees that cross regional boundaries may present management challenges for the NRC with respect to consistency, coordination, and efficiency of oversight.

Impact Assessment:

There are two scenarios that need to be considered in evaluating what impact industry consolidation might have on the effectiveness of the ROP. The first scenario relates to longer-term manifestation of licensee performance problems stemming from consolidation-related activities, and the second scenario involves safety performance problems deriving from licensee actions in response to financial pressures. The NRC staff recognizes that the second scenario is not necessarily driven by consolidation-related activities. A licensee could experience financial difficulties, independent of consolidation. However, the staff considered it appropriate to evaluate the issue of whether safety performance problems deriving from licensee actions in response to financial pressures would surface at a significance level and in a time frame that would allow the NRC to engage a licensee via the ROP to ensure appropriate root cause evaluation and corrective action before the safety performance problem becomes a significant concern.

Regarding the first scenario, one of the primary considerations is whether the ROP is conducive to identifying adverse performance trends that might result from consolidation-related activities such as cost-cutting initiatives and non-conservative changes to corporate policies, programs, and procedures. The NRC must be able to engage a licensee to ensure the underlying performance deficiencies are appropriately addressed before these deficiencies evolve into significant safety issues that challenge public health and safety. Licensee performance issues, particularly those relating to human performance and the corrective action program, should become evident at a lower level of significance. This affords the licensee the opportunity to correct the issues before more significant NRC action is necessary due to elevated safety performance problems.

As noted earlier, by design, the ROP is "indicative" rather than "diagnostic," which means that until the inspection findings and PIs become more safety significant, the ROP does not focus on

why a particular performance problem has occurred. The presumption with this approach is that licensee's are identifying and correcting the issues of lesser significance. Thus, if consolidation-related, cost-cutting initiatives or non-conservative changes in corporate policies, programs, and procedures result in performance issues, those issues are expected to surface initially as findings of lesser safety significance. The licensee should then determine the extent of the condition and implement appropriate corrective action. Assuming that consolidation-related activities continue to create performance problems because the licensee has not addressed the root causes for the issues of lesser significance, those problems may develop into more safety-significant issues. The NRC would then detect this adverse performance trend and engage appropriately. This is not to say that licensee performance problems could not initially be evident at a higher level of significance, but this should be the exception if the licensee is aggressively addressing its lower level issues.

Consistent with the discussion above, the corporate structure, ownership, and location of a particular plant should not impact the effectiveness of the ROP. While industry consolidation may offer efficiencies for the licensee, the assessment process under the ROP is based on performance results and not on how licensees gain efficiencies. Inspection activities under the baseline and supplemental inspection programs are sufficiently defined in terms of scope and objectives, that ownership or geographic location is not a factor in effective implementation of the inspection program. Similarly, the use of risk information to determine the safety significance of inspection findings by applying the Significance Determination Process (SDP) is independent of plant ownership or licensee size.

In assessing overall licensee performance, the ROP uses PI information in conjunction with the significance of inspection findings. The degree of regulatory engagement is dictated by the results of this assessment through the Agency Action Matrix. Each licensee is expected to submit quarterly PI information to the NRC for each plant owned by that licensee. If a licensee, for some reason, elects not to submit PI data for a specific plant, then the ROP has provisions for additional inspection activities to obtain the information captured by the PIs in order to fully assess licensee performance. As the ROP is further refined, each licensee will be expected to implement associated changes, e.g., revisions to the PI reporting criteria, at each of its facilities.

Regarding the second scenario, there is a concern among some stakeholders that a licensee, when faced with financial pressures, including potential bankruptcy, could make decisions that have significant short- or long-term effects. With respect to substantial short-term effects, the question is whether the NRC's regulatory oversight framework, given its performance-based, indicative nature in contrast to a more diagnostic approach, could preclude the NRC from increasing the level of licensee oversight in a timely manner to assure that operational safety is being maintained. Rather than having a short-term impact, some licensee decisions to dramatically improve financial viability could generate performance issues that do not surface until several months after the decisions are implemented. These performance issues could be safety-significant, depending upon the activities affected by the financially-based decisions. To date, there has been no evidence that a licensee facing financial pressures will make non-conservative decisions that result in significant safety concerns whereby the underlying performance problems have not been identified via the ROP in a timely manner such that the NRC can appropriately engage a licensee.

Conclusion:

The ROP is expected to be transparent to industry consolidation. However, the NRC currently has limited experience with the effects of industry consolidation on effective implementation of the ROP. With additional experience, changes that may be needed to the ROP should become evident. The annual self-assessment process built into the ROP is the vehicle to evaluate any needed changes. Continued use of the ROP self-assessment process to periodically evaluate the effectiveness of the ROP in light of the changing industry environment is adequate.

Regarding the issue of the effectiveness of the ROP in assessing the safety performance of a licensee facing financial difficulties, the staff agrees with industry observations that the ROP should be the vehicle for evaluating that safety performance. The NRC staff also agrees with the comment offered by one of the industry stakeholders that, "emphasis should continue to be placed on the development and evolution of the ROP such that it serves as a leading indicator to performance problems and will aid the NRC in identifying the need to review a licensee facing financial difficulties." However, in the staff's view, there is insufficient experience with implementation of the ROP in a consolidated industry environment to conclude that the ROP has evolved to this point.

Should significant changes occur in the industry, the staff will consider initiating a study to determine if an inspection module or "contingency plan" (similar to the "strike contingency plans" generated by some of the regional offices) needs to be developed to facilitate NRC evaluation of the safety performance of a licensee facing financial difficulties. This may help ensure that an enhanced level of NRC oversight is provided, if appropriate, in a timely manner to assure operational safety is being maintained, and that the longer-term performance impacts of licensee actions have been appropriately evaluated. Consideration of this effort would employ the PBPM process.

CATEGORY 3 - INSPECTION, ENFORCEMENT, AND ASSESSMENT

Issue 3.b - Other NRC Inspection Programs

Background:

NEI commented on this issue and addressed the need for consistent application of the revised process for regulatory oversight of materials licensees, particularly the Significance Determination Process (SDP).

Staff response:

The staff recognizes that successful implementation of the revised oversight process for material licensees, which pertains to the inspection programs for fuel cycle facilities and independent spent fuel storage installations, will require consistent application. While the SDP is still under development, the staff also recognizes that the SDP has to be structured such that it can be applied uniformly to inspection findings at each type of materials facility. Once fully developed, the staff will rely on its internal communications and self-assessment processes to ensure consistent application of the revised oversight process, including the SDP, by both headquarters and regional inspectors, similar to the current reactor oversight process.

No change to the staff's assessment of this issue is necessary as a result of this comment.

Discussion:

The NRC is in the process of developing revisions to the fuel cycle facility oversight process, including inspection, performance assessment, and enforcement. This process affects nine fuel cycle facilities: two gaseous diffusion plants, two highly enriched uranium fuel fabrication facilities, four low-enriched uranium fuel fabrication facilities, and one uranium conversion facility (refer to Issue Category 6). These facilities possess large quantities of materials that are potentially hazardous (radioactive, toxic, and/or flammable) to the workers, public, and environment. Similar to the reactor oversight process (ROP), the overarching objective in revising the fuel cycle facility oversight process is to establish a process that is more risk-informed and performance-based to focus on the more significant risks at fuel cycle facilities. The intent is to provide an objective and reliable basis for determining if a fuel cycle facility is safe and secure and to provide early indications of declining safety and safeguards performance.

The staff has interacted with external stakeholders through several public meetings and exchanges of documents. Stakeholder comments on a plan for revision of the fuel cycle facility oversight process, which lists the priority, sequence, and schedules for completing the oversight program revisions, are being evaluated.

The NRC is also in the process of risk-informing and performance-basing the inspection program for independent spent fuel storage installations (ISFSIs). This is being accomplished in a phased approach. The short-term phase involves risk prioritizing the existing inspection procedures using available risk/consequence information and an expert panel approach, and applying inspection resources commensurate with risk and the performance history of the

licensee. The longer-term phase is conceptualized to more closely align with the risk-informed inspection approach of the ROP. This would involve completing a probabilistic risk assessment (PRA) for ISFSIs and then using the PRA results to aid in developing an inspection program, which utilizes performance indicators and a significance determination process, similar to the ROP.

Impact Assessment:

Given that the NRC is planning to revise the fuel cycle facility oversight process using a framework similar to the ROP, it is reasonable to expect that the new oversight process will be able to accommodate potential impacts of consolidation (refer to Section 3.a. for a discussion of the impacts of industry consolidation on the ROP). In addition, the extensive outreach effort initiated by the NRC to exchange information and obtain stakeholder feedback provides an opportunity to discuss any expected impacts from the consolidation of fuel cycle facilities on the new oversight process. Similarly, since the ISFSI inspection program is being revised using a framework similar to the ROP, it is reasonable to expect that the new program will be able to accommodate potential impacts of consolidation.

Conclusion:

No additional staff action beyond the planned revisions to the fuel cycle facility oversight process (discussed above and under Issue 6) is recommended at this time.

CATEGORY 3 - INSPECTION, ENFORCEMENT, AND ASSESSMENT

Issue 3.c - NRC Enforcement Program

Background:

Comments on this issue were received from NEI and the NMC.

NEI commented on the need for the NRC to audit implementation of its enforcement program to ensure that it is applied consistently among the regions, stating that additional coordination and communication between the regions and program office is likely to be beneficial now and should not depend on some impact of consolidation.

With regard to the discussion in the staff's preliminary assessment that the Office of Enforcement may decide to increase its audit activities in an effort to minimize inconsistencies among the regions in implementing the enforcement program, NMC commented that it supported the staff's recommendation that the NRC obtain and assess relevant staff experience, as well as stakeholder feedback, concerning the impact of consolidation on the NRC's regional offices.

Staff response:

The staff recognizes that it is important for the Office of Enforcement to maintain its oversight activities of regional enforcement program implementation to minimize inconsistencies. The need for this oversight is independent of consolidation activities. The level of oversight is a function of how well the enforcement program is being implemented, as determined by self-assessment results and stakeholder feedback. It is also affected by resource availability. However, the staff also acknowledges that there may currently be some inconsistencies in how the enforcement program is being implemented that have not yet been identified through self-assessment efforts, and/or some inconsistencies could arise in the future. These may include different thresholds for issuing non-cited violations, distinguishing between minor and Severity Level IV violations, and reaching conclusions on alleged discrimination. These current or potential future inconsistencies should be more readily apparent to cross-regional licensees. In its preliminary impact assessment, the staff noted that the Office of Enforcement might want to increase its oversight activities to further ensure the enforcement program is being implemented consistently. This recommendation does not stem from a conclusion that the current level of program office oversight is not effective.

No change to the staff's assessment of this issue is necessary as a result of these comments.

Discussion:

The NRC derives its enforcement authority from the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, as amended. The NRC exercises its statutory authority to impose enforcement sanctions in accordance with its enforcement policy described in NUREG-1600, "General Statement of Policy and Procedures for NRC Enforcement Actions." Enforcement actions have been used as a deterrent to emphasize the importance of compliance with NRC requirements and to encourage prompt identification and prompt,

comprehensive correction of violations of those requirements. Compliance with NRC requirements plays an important role in giving the NRC confidence that safety is being maintained. In the context of risk-informed regulation, compliance also plays an important role in ensuring that key assumptions used in underlying risk and engineering analyses remain valid.

With the development of the reactor oversight process (ROP), where the significance of individual non-compliance findings is evaluated using more objective criteria and the regulatory response to these findings is more predictable, the enforcement program was revised to integrate better with the ROP. This revision to the enforcement program consisted of categorizing violations into two groups. The first group consists of those violations that can be evaluated under the Significance Determination Process (SDP), with appropriate NRC action determined by the Agency Action Matrix. Issue 3.a. discusses the potential impacts of industry consolidation on the ROP. The second group includes violations related to willfulness, including discrimination; violations involving actual safety consequences, such as an overexposure to the public or plant personnel or a substantial release of radioactive materials; and violations that may impact the NRC's ability to oversee licensed activities. This issue discussion focuses on the impact of industry consolidation on the enforcement program as it pertains to violations in the second group.

As noted in other issue discussions, licensee efforts to increase operational efficiency could result in changes to corporate policies, programs, and procedures. If these changes are perceived to be non-conservative or are not managed well, licensee staff may elect to use the NRC's allegation process to express their concerns. Licensee staff may choose to seek resolution by bringing their concerns/issues to the attention of licensee management and/or by using the established employee concerns program, and then if not satisfied with the outcome, refer their concerns to the NRC via the allegation process. Alternatively, licensee staff may decide to go directly to the NRC with their issues, or raise them to the NRC and licensee at the same time. Given that consolidation results in more reactor facilities under one licensee's control, corporate-wide changes affect more reactor facilities and hence more employees. With more staff impacted by these changes, there is a greater potential for allegations to result. In addition, cost-cutting initiatives such as reductions in licensee staff could result in an increased number of discrimination allegations as some staff claim that they were laid-off or moved to another organization due to raising a safety concern. Increased numbers of allegations would translate to an increased enforcement workload, assuming that the NRC substantiates some percentage of these allegations, in whole or in part, based on the results of its investigations.

On the other hand, it is equally likely that consolidation may result in a reduced volume of enforcement actions because of stronger licensees and better managed regulatory programs. Staff experience to date with consolidated licensees has not shown any increase or decrease in discrimination complaints or other allegations or in related enforcement actions.

While measures and processes have been established to assure consistent application of the enforcement program among the regions, e.g., audits, enforcement panels, counterpart meetings, etc., those inconsistencies in implementing the enforcement program that may exist will be more apparent to cross-regional licensees. These inconsistencies may involve different thresholds for issuing non-cited violations, distinguishing between minor and Severity Level IV violations, and reaching conclusions on alleged discrimination. This may necessitate more

oversight from the Office of Enforcement to ensure similar issues are treated consistently among the regions.

Another area potentially impacted by consolidation relates to the possible employment by a licensee of an individual who was terminated at one facility, based on poor performance or wrongdoing (whether or not the individual had been issued an NRC order prohibiting his involvement in licensed activities), at another facility if the second employer is unaware of the performance or wrongdoing problem at the first facility. This would be less likely to occur in a consolidated industry with fewer licensees.

Impact Assessment:

The staff recognizes that it is important for the program office to maintain its oversight activities of regional enforcement program implementation to minimize inconsistencies. The need for this oversight is independent of consolidation activities. The level of oversight is a function of how well the enforcement program is being implemented as determined by self-assessment results and stakeholder feedback. It is also affected by resource availability. However, the staff also acknowledges that there may currently be some inconsistencies in how the enforcement program is being implemented that have not yet been identified through self-assessment efforts and/or some inconsistencies could arise in the future. These may include different thresholds for issuing non-cited violations, distinguishing between minor and Severity Level IV violations, and reaching conclusions on alleged discrimination. These current or potential future inconsistencies should be more readily apparent to cross-regional licensees.

The impact of industry consolidation on the NRC's enforcement program relates to implementation issues vice policy issues. It appears that the NRC can address these implementation issues within the context of the existing enforcement program framework/infrastructure. The Office of Enforcement may decide to increase its audit activities in an effort to minimize inconsistencies among the regions in implementing the enforcement program. The coordination and communication efforts between the regions and program office help assure that the same thresholds are applied for determining if discrimination violations occurred, as well as distinguishing between cited and non-cited violations and between minor and Severity Level IV violations. Regarding the potential increase in enforcement workload stemming from a potentially greater number of allegations and discrimination complaints, the Office of Enforcement's program and processes allow for monitoring to determine if additional resources are warranted.

Conclusion:

Experience with the effects of industry consolidation on effective implementation of the enforcement program is limited. The NRC should continue to monitor the enforcement workload associated with discrimination complaints and technical-related allegations to determine if industry consolidation activities are influencing this workload and make resource decisions based on the monitoring results. The Office of Enforcement should maintain its oversight activities of regional enforcement program implementation to minimize inconsistencies.

CATEGORY 3 - INSPECTION, ENFORCEMENT, AND ASSESSMENT

Issue 3.d - NRC Allegation Program

Background:

Comments on this issue were received from NEI and NMC.

- 1) Both NEI and the NMC challenged the validity of the staff's conclusion in its preliminary assessment that consolidation could potentially result in an increased number of allegations, including those involving discrimination complaints. Additionally, NEI took issue with the conclusion that inspection activities may need to increase, which could necessitate additional resources, in order to validate that corporate cultural initiatives deriving from consolidation have not adversely affected the safety conscious work environment (SCWE). The NMC, on the other hand, commented that "consolidation calls forth a need for greater care in this area [SCWE]."

Staff response:

While the staff acknowledged in its assessment that experience to date with consolidated licensees has not shown any noticeable increase or decrease in allegations, the potential for an increased number of allegations was based on the following considerations. Licensee efforts to increase operational efficiency could result in changes to corporate policies, programs, and procedures. If these changes are perceived to be non-conservative or are not managed well, licensee staff may elect to use the NRC's allegation process to express their concerns. Licensee staff may choose to seek resolution by bringing their concerns or issues to the attention of licensee management and/or by using the established employee concerns program, and then if not satisfied with the outcome, refer their concerns to the NRC via the allegation process. Alternatively, licensee staff may decide to go directly to the NRC with their issues, or raise them to the NRC and licensee at the same time. Given that consolidation results in more reactor facilities under one licensee's control, corporate-wide changes affect more reactor facilities and hence more employees. With more staff impacted by a change, there is a greater potential for allegations to result. In addition, cost-cutting initiatives such as reductions in licensee staff could result in an increased number of discrimination allegations as some staff claim that they were laid-off or moved to another organization due to raising a safety concern. Many times, the "safety concern" is associated with some technical issue. Consequently, in addition to investigating the discrimination complaint, assuming there is a prima facie case, the NRC staff evaluates whether the technical issue is valid and has been appropriately resolved.

Using similar logic, corporate cultural initiatives, such as efforts to maintain a safety conscious work environment (SCWE), could be impacted by non-conservative changes in corporate policies, programs, or procedures. With more staff affected by these changes due to an increased number of sites within a corporation, the greater the impact of a given change. Additional NRC inspection and/or licensee contracting for an independent assessment may be necessary to evaluate whether the SCWE was adversely impacted by changes in corporate policies, programs, or procedures.

Regarding NEI's comment that there is no conclusive evidence that the agency's inspection activities are capable of validating the existence of corporate cultural issues, both the NRC and the industry have endorsed the concept that an SCWE is an important cross-cutting issue with respect to licensee performance. Within this context, the reactor oversight process currently includes a limited evaluation of a licensee's SCWE as part of the Problem Identification and Resolution Inspection procedure.

The staff is not trying to "force licensees to meet staff-designated SCWE objectives," "attempt to regulate work cultures through inspection activities," or "use inspection activities as a substitute for a SCWE rule." Rather, the staff is pointing out that one potential outcome from industry consolidation could be non-conservative and/or poorly managed changes to corporate policies, programs, or procedures which could have a detrimental effect on the existing SCWE. In the staff's view, it is important to monitor for this potential outcome.

Notwithstanding the basis described above for concluding that an increased number of allegations is a potential outcome from industry consolidation, as the staff pointed out in its preliminary assessment, consolidation could also result in a reduced number of allegations.

- 2) NEI commented on whether an allegation received by the NRC should be referred to the licensee, suggesting that the agency should revise its policy so that allegations will be routinely referred to licensees for resolution.

Staff response:

The majority of allegations are referred to the affected licensees, with a response typically requested within 30 days. The licensee's response is reviewed by the NRC staff to determine if the licensee has adequately evaluated the issues and initiated action as appropriate. In those instances where an allogger desires that his/her identity be protected, the NRC conducts an independent inspection to determine the validity of the allegation, unless the issue is of an immediate safety concern such that informing the licensee is necessary to address the issue promptly. Routinely referring allegations to licensees without regard to identity protection would be a departure from the Commission's policy on the allegation process.

No change to the staff's assessment of this issue is necessary as a result of this comment.

- 3) NMC commented on the NRC recommendation in its preliminary assessment that the NRC should continue to monitor the number of allegations received to evaluate the impacts of industry consolidation. NMC agreed that the NRC should monitor the volume of allegations received as industry consolidation proceeds. However, NMC commented that the monitoring should also include the scope and nature of the allegations.

Staff response:

While it was intended that the monitoring activities would also include an assessment of the scope and nature of allegations received, the staff's preliminary assessment did not specifically state this.

The staff's assessment has been modified to clarify that continued monitoring of allegations received will include an evaluation of their number, scope, and nature.

Discussion:

The allegation program was established to provide a mechanism for individuals to identify safety and regulatory issues directly to the NRC. An allegation is defined as a "declaration, statement, or assertion of impropriety or inadequacy associated with NRC-regulated activities, the validity of which has not been established." The allegation program is structured to provide a comprehensive response to an allogger's concerns in a timely manner. It includes provisions to protect the identity of the allogger; to provide timely resolution of the issues specific to an allegation; and to communicate the staff's understanding of those issues, status of the staff's review efforts, and ultimate resolution of the issues in a timely manner. Industry consolidation could potentially impact these and other aspects of the allegation program.

As discussed in Issue 3.c, licensee efforts to increase operational efficiency could result in changes to corporate policies, programs, and procedures. If these changes are perceived to be non-conservative or are not managed well, licensee staff may elect to use the NRC's allegation process to express their concerns. Licensee staff may choose to seek resolution by bringing their concerns/issues to the attention of licensee management and/or by using the established employee concerns program, and then if not satisfied with the outcome, refer their concerns to the NRC via the allegation process. Alternatively, licensee staff may decide to go directly to the NRC with their issues, or raise them to the NRC and licensee at the same time. Given that consolidation results in more reactor facilities under one licensee's control, corporate-wide changes affect more reactor facilities and hence more employees. With more staff impacted by these changes, there is a greater potential for allegations to result. In addition, cost-cutting initiatives such as reductions in licensee staff could result in an increased number of discrimination allegations as some staff claim that they were laid-off or moved to another organization due to raising a "safety concern." Many times, the "safety concern" is associated with some technical issue. Consequently, in addition to investigating the discrimination complaint, assuming there is a prima facie case, the NRC staff often evaluates whether the technical issue is valid and has been appropriately resolved.

Similarly, corporate cultural initiatives, such as efforts to maintain a safety conscious work environment (SCWE), could be impacted by non-conservative changes in corporate policies, programs, or procedures. With more staff affected by these changes due to an increased number of reactor sites within a corporation, the greater the impact of a given change. Additional NRC inspection and/or licensee contracting for an independent assessment may be necessary to evaluate whether the SCWE was adversely impacted by changes in corporate policies, programs, or procedures.

As noted in the case of enforcement actions (refer to Issue 3.c), it is equally likely that consolidation may result in a reduced number of allegations because of stronger licensee management and more effective regulatory programs. However, staff experience to date with consolidated licensees has not shown any noticeable increase or decrease in allegations.

Under the current allegation program, the NRC may elect to refer a particular allegation to the licensee for evaluation with the licensee reporting back to the NRC on the results of its review,

or decide to conduct an independent inspection to determine the validity of the allegation. If a consolidated licensee crosses regional boundaries, absent some coordinating efforts on the part of the NRC, one regional office could decide to follow up an allegation with inspection to protect the alleged's identity, while another regional office could decide to refer a similar allegation from another employee to the licensee for follow up. With different approaches to following up on similar allegations, NRC staff in the respective regions may reach different conclusions on the validity and disposition of the allegation issues. These and other potential inconsistencies in implementing the allegation program would be more apparent to cross-regional licensees.

Impact Assessment:

While industry consolidation may impact some aspects of the NRC's allegation program, as described above, the impact relates to implementation issues vice policy issues. It appears that the NRC can address these implementation issues within the context of the existing NRC allegation program framework/infrastructure. For example, NRC follow-up action to address similar allegations received in different regions, stemming from corporate-wide changes to policies, programs, and procedures, may require coordination of efforts among regional offices to ensure consistency and alleged identity protection. Allegations involving programmatic issues which cross-cut regional boundaries, i.e., pertain to activities at multiple sites in different regions, can be effectively addressed by defining which internal NRC organization has the lead responsibility for follow up. If the potential for an increased number of allegations is realized, including those involving discrimination complaints, then additional resources dedicated to the allegation program may be required.

One potential outcome from industry consolidation could be non-conservative and/or poorly managed changes to corporate policies, programs, or procedures which have a detrimental effect on the existing SCWE. In the NRC staff's view, it will remain important to follow the current process, understanding that the performance of the individual sites could result in additional inspection activities within the context of the ROP and/or licensee contracted independent assessments.

Conclusion:

While experience to date with the effects of industry consolidation on effective implementation of the allegation program is limited, there appears to be an opportunity to enhance existing guidance for consistent treatment of allegations arising from implementation of corporate policies, programs, or procedures that affect facilities in two or more regions.

In addition, the staff should continue to monitor the number, scope, and nature of allegations received to determine if industry consolidation activities are resulting in an increased allegation workload, and consider making resource decisions based on the results of this monitoring.

CATEGORY 4 - DECOMMISSIONING

Background:

Four comments were received from NEI, NRSB, and two individuals. NEI agreed with the staff's preliminary assessment. NRSB encouraged the NRC to take a position that avoids prejudicing State commission decisions regarding the future approaches to decommissioning cost recovery by recognizing that license renewal for nuclear units is not assured until approved by the NRC, and that individual licensee and plant circumstances may result in the need to collect decommissioning funds over the facility's current license life. One individual commented that all inactive sites owned by a bankruptcy-filing operator should be immediately fully decommissioned. Another individual asked the staff to explain how the ratepayer contributions that have accumulated for decommissioning costs will be protected.

Staff response:

In response to the NRSB comment, NRC's policy is not to allow credit for decommissioning fund collections into a license renewal period until the NRC approves the license renewal application. The commenter cited recent action by the Arkansas Public Service Commission (APSC) with respect to APSC's disallowance of decommissioning funds collection because of its assumption of additional collection time during a license renewal period in advance of NRC approval of that license extension. The NRC outlined its policy with respect to this issue in letters dated May 11, 2001, from Chairman Meserve to John McGaha, President, Entergy Operations, Inc., and to Sandra L. Hochstetter, Chairman of the APSC. Notwithstanding increased licensee interest, license renewal is not effected until approved by the NRC, so that individual circumstances may require decommissioning funds to be collected over a facility's current license life. The assessment has been modified to clarify this point.

In response to the first individual's comment, under 10 CFR 50.82, power reactors must be decommissioned within 60 years. In the 1988 rulemaking that established this requirement, both immediate and delayed decommissioning options were evaluated (53 FR 24018, June 27, 1988). For some power reactors, there may be advantages in reduced occupational exposures and decommissioning costs if decommissioning is delayed for up to 60 years. The Commission, therefore, decided that either immediate dismantlement or delayed dismantlement up to 60 years would be acceptable. Because decommissioning trust funds are held outside the administrative control of the licensee, licensees do not have access to these trust funds to pay for non-decommissioning expenses. The NRC believes that decommissioning funds would be protected even in those cases where a licensee files for bankruptcy protection. No change to the assessment was needed as a result of this comment.

In response to the second individual's comment, NRC requires its power reactor licensees to provide assurance that decommissioning funding will be available when and in the amount needed. However, for rate regulated licensees, the NRC does not specify whether the source of these funds should be from ratepayers or stockholders. The choice of source is determined by the licensee's rate regulator as part of its normal rate making decision-making. Virtually all licensees have chosen to provide such assurance through deposits made into external trust accounts that are either prepaid (generally, for unregulated licensees) or collected over the estimated reactor life (for rate-regulated licensees). With either approach, the NRC believes

that external trust accounts are sufficiently rigorous to prevent use for non-decommissioning purposes, unless specifically authorized by the NRC, which can occur, for example, when trustees have to pay ordinary administrative expenses associated with the trusts' operations. Once decommissioning is completed and the NRC license is terminated, if there are excess funds, it would be the decision of the rate regulator to decide whether and to what extent ratepayer-contributed decommissioning funds would be returned to ratepayers. No change to the assessment was needed as a result of this comment.

Discussion:

Nuclear industry consolidation can affect individual licensee decommissioning planning, financial assurance, and schedules for dismantling power reactor and fuel cycle facilities. Regulations applicable to decommissioning include radioactivity cleanup criteria for unrestricted and restricted release, financial assurance that funds will be available to decommission the site, decommissioning planning, and procedures for submitting applications requesting license termination. Decommissioning policy guidance for implementing the above regulations has been prepared and issued as standard format and content guides and standard review plans.

The potential impacts from nuclear industry consolidation on decommissioning planning, scheduling, and funding can vary. The most likely outcome is that industry consolidation will strengthen licensee business conditions to encourage license renewal or avoid early license termination. For example, strengthened business conditions from consolidation have allowed power reactor licensees to continue operations at some plants (e.g., Oyster Creek) that were previously being considered for decommissioning. Consolidation has and will likely continue to result in an increased interest in license renewal. Actions that extend the operation of nuclear power plants will, in general, increase the available time to fund decommissioning if sinking funds are used. Notwithstanding increased licensee interest, license renewal is not effected until approved by the NRC, so that individual circumstances may require decommissioning funds to be collected over a facility's current license life.

Consolidation may also result in decommissioning schedule stretch-outs to accommodate consolidated company-wide decommissioning programs. Licensees may seek process and funding alternatives not specifically addressed or allowed in current regulations, and possibly request an increased number of exemptions. Licensees may also seek financial assurance rule changes to allow stretch-outs in the time required to fully fund decommissioning trusts, on the basis that consolidated decommissioning schedules can reduce the need for full funding if plant dismantlement will take place further in the future.

Nuclear power plant licensees that are no longer rate-regulated are required by the NRC's regulations to provide means of assuring any estimated unfunded decommissioning cost through some surety, insurance, or equivalent method. The staff evaluates such changes either through license transfer applications pursuant to 10 CFR 50.80 or through biennial reports on decommissioning funding status required to be submitted by licensees.

Impact Assessment:

License termination regulations apply to planned and premature decommissioning activities. Because regulations allow nuclear power plant licensees 60 years after permanently ceasing operations to complete decommissioning, there is substantial flexibility already allowed for consolidated utilities to delay decommissioning to take advantage of operational efficiencies. NRC staff has been able to successfully address cases involving immediate dismantlement, partial dismantlement, and delayed decommissioning alternatives.

Fuel cycle facility license termination regulations do not allow delayed decommissioning because studies have shown that delaying decommissioning of these facilities does not have a financial or radiological safety benefit. Thus, fuel cycle facility shutdowns due to industry consolidation efforts do not appear to introduce unique circumstances that require new license termination processes.

Power reactor decommissioning financial assurance regulations allow the use of sinking funds where licensees are either rate-regulated or can recover costs through the rate base (currently all States allow recovery of decommissioning costs through various rate base mechanisms; otherwise, full funding or guarantee of full funding would be required under NRC regulations). In premature decommissioning cases, full funding may not be available at the time of shutdown. However, experience with actual cases has not identified unresolvable funding issues. Reviews of power reactor licensee ownership changes include consideration of decommissioning funding. No decommissioning regulation or policy changes, other than the rulemaking to standardize trust fund provisions currently underway, appear necessary at this time to reflect industry consolidation impacts.

Fuel cycle licensee decommissioning financial assurance regulations should not be affected by industry consolidation because the regulations ensure that full funding would be available if a licensee is unable to complete decommissioning, for example due to bankruptcy or premature shutdown.

Conclusion:

No follow up action is recommended. Currently, it appears that current decommissioning regulations and policies are sufficiently flexible to accommodate situations resulting from industry consolidation. Therefore, industry consolidation appears to have no significant impact in the decommissioning area.

CATEGORY 5 - EXTERNAL REGULATORY INTERFACES

No comments were received on this category.

Discussion:

The Commission issued the “Final Policy Statement on the Restructuring and Economic Deregulation of the Electric Utility Industry,” 62 Fed. Reg. 44071 on August 19, 1997. The policy statement established the NRC’s expectations for, and intended approach to, power reactor licensees as the electric utility industry moved from an environment of rate regulation toward greater competition. In its policy statement, the Commission anticipated changes, including consolidation, in the electric utility industry. The policy statement states:

The electric utility industry is entering a period of economic deregulation and restructuring that is intended to lead to increased competition in the industry. Increasing competition may force integrated power systems to separate (or ‘disaggregate’) their systems into functional areas. Thus, some licensees may divest electrical generation assets from transmission and distribution assets by forming separate subsidiaries or even separate companies for generation. Disaggregation may involve utility restructuring, mergers, and corporate spinoffs that lead to changes in owners or operators of licensed power reactors and may cause some licensees, including owners, to cease being an ‘electric utility’ as defined in 10 CFR 50.2.¹

In its policy statement, the Commission recognized the primary role that State and Federal economic regulators have served, and in many cases will continue to serve, in setting rates that include appropriate levels of funding for safe operation and decommissioning. The NRC took a number of actions to increase cooperation with State and Federal rate and financial regulators to promote dialogue and minimize the possibility of rate deregulation or other actions that would have an adverse effect on safety. The policy further elaborated on NRC’s intent to continue to work and consult with the State public utility commissions, individually or through the National Association of Regulatory Utility Commissioners (NARUC), and with the Federal Energy Regulatory Commission (FERC) and other Federal agencies to coordinate activities and exchange information. This increased level of interaction and consultation has also been beneficial to the NRC in industry consolidation efforts.

Several regulatory agencies at the Federal and State level have jurisdiction over, or interest in, nuclear industry consolidation. Issues concerning nuclear industry consolidation and license transfers (see Issue 2.a) involve a number of entities besides the NRC, including, as appropriate, State public utility commissions, the Department of Justice (DOJ), FERC, the Securities and Exchange Commission (SEC), and the Federal Trade Commission (FTC).

¹ Section 50.2 defines “electric utility” as “any entity that generates or distributes electricity and which recovers the cost of this electricity, either directly or indirectly, through rates established by the entity itself or by a separate regulatory authority. Investor-owned utilities, including generation and distribution subsidiaries, public utility districts, municipalities, rural electric cooperatives, and State and Federal agencies, including associations of any of the foregoing, are included within the meaning of ‘electric utility.’”

Traditionally, State public utility commissions have had jurisdiction over electric utilities with the general responsibility to assure safe, reasonable and adequate service at rates which are just and reasonable to customers and the utilities. DOJ is responsible for maintaining competitive markets by enforcing Federal antitrust laws. Among other things, FERC has responsibility for regulating the transmission and sale of wholesale electricity. SEC administers Federal securities laws that seek to provide protection for investors and to ensure that securities markets are fair and honest. The role of the FTC is to maintain the competitive enterprise and to prevent the free enterprise system from being fettered by monopoly or restraints on trade or corrupted by unfair or deceptive trade practices. The NRC has worked with FERC, SEC and DOJ to develop methods by which the NRC can minimize the duplication of effort on antitrust reviews and still carry out its statutory responsibilities. For example, NRC recently amended its regulations to clarify that it will no longer require owners of operating nuclear power plants to include antitrust information in license transfer applications, eliminating duplication of a review performed by other Federal and State agencies. However, NRC continues to require antitrust information for new license applications (see Issue 8.b). NRC is supporting legislation to eliminate its antitrust review mandate. Other such jurisdictional issues (i.e., antitrust and merger reviews by multiple jurisdictions) between regulatory authorities may emerge as a result of further industry consolidation.

In addition, industry consolidation may affect NRC's interfaces with other Federal or State agencies having collateral jurisdiction, responsibility or interest in nuclear licensees. Potential consolidation issues discussed elsewhere in this document have external regulatory interface elements. These issues include: high-level radioactive waste and low-level radioactive waste management (see Issue 1.d. - Department of Energy (DOE), Environmental Protection Agency (EPA) and State agencies), spent fuel storage and transportation (see Issue 1.c. - DOE, Department of Transportation and State agencies), decommissioning (see Issue 4. - EPA and State agencies) emergency preparedness (see Issue 1.e. - Federal Emergency Management Agency and the associated State agencies) and grid stability and reliability (see Issues 1.f. and 8.a. - DOE and FERC).

Nuclear industry consolidation may also have additional impacts on NRC's interactions with external regulatory agencies. For example, new license applications (see Issue 2.b) and license renewals (see Issue 2.c) require consultation or interaction with a number of Federal, State and local governmental agencies in the preparation of the environmental impact statement. In the event of bankruptcy (see Issue 7.e), to ensure that NRC's interests and responsibilities and a licensee's obligations with respect to public health and safety are properly recognized, NRC would ask DOJ to intervene on behalf of the NRC in any bankruptcy proceeding.

Impact Assessment:

As identified in the Commission's policy statement, the NRC took a number of actions to increase cooperation with State and Federal rate and financial regulators to minimize the possibility that rate deregulation or other actions would have an adverse effect on safety. This open dialogue with these regulators has been helpful in minimizing potential adverse effects on nuclear safety as a result of electric utility industry deregulation and restructuring by assuring appropriate levels of funding for safe nuclear power plant operation and decommissioning.

Conclusion:

No follow up action is recommended. However, NRC's routine interaction and dialogue with other Federal and State regulatory authorities, including national associations representing these authorities, as well as foreign regulatory authorities, should continue in order to identify emerging policy issues related to new trends in industry consolidation. In addition, NRC should continue to interact with cognizant stakeholders to identify emerging policy issues that could affect NRC's interfaces with other State and Federal regulatory bodies in approving license transfers.

CATEGORY 6 - FUEL CYCLE FACILITIES

Background:

Several comments were received from NEI, USEC, and IDNS, as follows:

1. NEI expressed concern that foreign sources of nuclear fuel are outside the NRC's mandate, while USEC stated that common defense and security implications also need to be considered in addressing issues related to foreign sources of enriched uranium.

Staff response:

Although both NEI and USEC make valid points concerning foreign sources of nuclear fuel, ultimately it is Congress and other Federal agencies that have the authority to define national security needs applicable to the fuel cycle facilities. The NRC will continue to implement its requirements related to foreign ownership under 10 CFR Parts 70 and 76. No change to the assessment is required as a result of these comments.

2. NEI and USEC both commented that NRC staff appears to be seeking to further limit licenses and certificates to activities specifically described or contemplated at the time of the issuance of the certificate or license, and believe that this represents an undue burden on material licensees and certificate holders without a commensurate safety benefit.

Staff response:

These comments do not pertain directly to industry consolidation. However, permissible activities under a license or certificate are those specifically authorized by the NRC based on the license or certificate application and the staff's safety evaluation. If a licensee or certificate holder wants to conduct activities beyond the authorized scope, it must seek an amendment. No change to the assessment is required as a result of these comments.

3. NEI and USEC both commented that since fuel cycle facilities compete in international markets, and that foreign facilities are regulated to different sets of regulatory standards, the domestic standards they are held to may impact their ability to compete.

Staff response:

Although these comments do not pertain directly to the impacts of industry consolidation, but rather to current fuel cycle licensees' ability to compete internationally, the staff agrees that there may be differences between the regulatory approaches in the United States and foreign countries. Any licensee or certificate holder who believes that the existing regulatory requirements present unnecessary regulatory burdens is encouraged to seek changes through rulemaking. No change to the assessment is required as a result of these comments.

4. USEC commented that they would like to see a higher priority assigned to licensing activities involving modernization and/or expansion of domestic fuel cycle facilities.

Staff response:

Staff believes that the appropriate priority is assigned to major licensing actions, including those activities involving modernization and/or expansion of domestic fuel cycle facilities on the basis of the licensee's or certificate holder's needs, competing activities, and staff judgment. This was recently evidenced by the staff's support of the tight schedule and high priority requested by USEC for the High Assay Upgrade Program. All future requests will be assigned the appropriate priority in accordance with staff resources and licensee needs. No change to the assessment is required as a result of this comment.

5. NEI and USEC both commented that consolidation should bring about savings due to the decreased burden on the NRC, and both cite the recent placement of the Portsmouth gaseous diffusion facility in cold standby and reduction in staffing should lead to a reduction in fees, rather than the increase from \$1.12 to \$1.15 million USEC experienced.

Staff response:

The NRC assesses two types of fees to meet the requirement of the Omnibus Budget Reconciliation Act of 1990, as amended, that almost all of the NRC's budget authority be recovered through fees. Fees are assessed under 10 CFR Part 170 to recover the NRC's costs of providing specific licensing and inspection services to applicants and licensees. The remaining budgeted costs are recovered through annual fees assessed under Part 171. Industry consolidation does not necessarily result in decreased NRC costs and therefore does not necessarily result in reduced fees. For example, certificate amendments continue to be submitted to the NRC from USEC for the Portsmouth facility. The NRC's costs for processing these amendment requests are recovered under Part 170. In addition, there is not always a direct correlation between the number of licensees and the need for generic activities, such as rulemaking. Costs for generic activities are recovered under Part 171.

The NRC revises its fee schedules each year to recover the required amount of the Congressionally-approved NRC budget. The fees that are assessed to each class of licensees are established to reflect a reasonable relationship to the costs of providing specific (licensing and inspection) and generic (i.e., rulemaking) services to that class. The annual fees for each fiscal year reflect changes in licensed activities that occurred prior to the beginning of that fiscal year. For example, annual fees would be waived for a fuel cycle licensee who requests, prior to the beginning of the fiscal year, that its license authorizations be limited to decommissioning activities and who permanently ceases all licensed operations prior to the beginning of the fiscal year. However, annual fees are not waived for licensees who place their license in a standby status. No change to the assessment is required as a result of these comments.

6. NEI noted in its comment that the preliminary impact assessments did not address materials licensees, even though they constitute the largest number of NRC licensees. They have also been experiencing a great deal of consolidation and should be

addressed. Some licensees may consolidate in one or more Agreement States, which has the same impact.

Staff response:

The focus of this staff effort is on nuclear power reactor and fuel cycle licensees and certificate holders. Although the potential for materials licensees currently regulated by the NRC to be regulated under existing or potential new Agreement States does exist, it is a separate issue from industry consolidation and is being handled in a different forum. No change to the assessment is required as a result of this comment.

7. IDNS expressed concern over the potential negative impact on the economic viability of the UF₆ production and enrichment facilities due to the down-blending of highly enriched uranium (HEU) from foreign sources.

Staff response:

Staff believes that the down-blending of HEU from foreign sources has already been successfully integrated into the material processed at the enrichment facilities in the United States. Foreign HEU material is utilized in domestic fuel cycle facilities because it is economically favorable to those facilities. Staff suspects that in the event this foreign HEU becomes unfavorable to the bottom line, the overriding national security concern over arms control treaties alluded to in the comment would allow the government to step in to take over possession of the HEU material and/or to provide incentives to private companies to allow them to continue this vital function. Since arms control treaties are an issue separate from the consolidation impacts of the nuclear industry, no change to the assessment is required to resolve this comment.

Discussion:

Industry consolidation activities are occurring throughout the entire fuel cycle as global market conditions become more competitive and force companies to eliminate excess capacity and less economically beneficial operations. Consolidation of fuel cycle facilities has occurred in the past, as most recently experienced in the Westinghouse and ABB merger, which is resulting in the closure of the former ABB fuel fabrication operation (CE Nuclear Power) in Hematite, MO. Other significant past consolidations include Westinghouse and BNFL, Framatome's purchase of the B&W fuel operation, and the reorganization of GE with its Japanese shareholders to create Global Nuclear Fuels (GNF).

Even in light of this recent flurry of consolidations within the nuclear fuel cycle, this consolidation trend appears to be continuing. The staff recently approved an application for the transfer of ownership and control of a materials license as a result of the merger of the world-wide nuclear businesses of Siemens AG (Siemens) and Framatome S.A. (Framatome). In addition, due to low uranium market prices, uranium mining and milling companies throughout the world are discussing consolidation, which may lead to further consolidation or possible closure of U.S. fuel cycle facilities that are not fiscally viable under increased global competition. New construction may also involve multiple corporations pooling their resources to build new fuel facilities, as evidenced by Duke Cogema Stone & Webster's plan to build a

mixed oxide (MOX) fuel fabrication facility at the Savannah River site. There has also been a demonstrated interest from two separate corporations regarding submitting applications for advanced gas centrifuge enrichment plants in 2002.

All commercial nuclear fuel facilities in the United States are required to be licensed or certified by the NRC. Existing domestic fuel facilities are divided into three groups: those that involve the processing of uranium ore into uranium hexafluoride (UF₆); those that enrich the UF₆ in the ²³⁵U isotope; and those that fabricate enriched uranium into nuclear reactor fuel. The NRC issues and maintains licenses or certificates for fuel facility operators to authorize their possession and use of source, special nuclear, and byproduct material in accordance with the requirements promulgated in 10 CFR Parts 40, 70, 73, 74, and 76 upon NRC approval of the license or certificate applications. Certain facilities are also subject to Agreement State regulation for source and byproduct materials.

The potential impacts from further fuel cycle industry consolidation will depend on the licensee and the objectives of the consolidation. In some cases, license renewal applications may be submitted to the NRC. Inquiries during the Siemens/Framatome merger indicate that consolidated companies may want to license multiple facilities under one license, which could potentially reduce their annual fees. In other cases, the economics of a newly formed conglomerate may lead to facilities closing down, as in the case of the Westinghouse/CE Hematite merger, which would require decommissioning on an earlier schedule than previously forecasted.

In addition, the staff is currently considering whether to realign the fuel cycle inspection program partly because of the trend in industry consolidation, but also to attain improved efficiency and effectiveness. This may involve a range of options, including consolidation of the program in a region, consolidation within NMSS, or maintenance of the status quo.

Impact Assessment:

The NRC has addressed fuel cycle consolidations in the past, and in all cases the existing regulations and NRC staff resources have been sufficient to ensure the safety of the facilities involved in the mergers. However, due to the consolidation and decommissioning of fuel cycle facilities, there is now only one domestic source of uranium ore conversion to UF₆ (Honeywell) and only one domestic source of UF₆ enrichment (Paducah Gaseous Diffusion Plant). If either of these plants were to close, there could be significant impact on the three remaining civilian nuclear fuel fabricators, and likewise on the entire nuclear industry due to domestic fuel unavailability.

Although the fuel fabrication field has become fairly narrow, with only a handful of fuel cycle facilities now in operation, further consolidation of companies is not out of the question. The international conglomerates BNFL and Cogema have been aggressively acquiring a wide range of fuel cycle operations around the world, which would seem to indicate that they intend to become the predominant companies in the marketplace. Although foreign ownership and transfer of companies is not uncommon in the fuel cycle, complete reliance on foreign sources for nuclear fuel may need to be addressed. This may have national security implications, as noted by Congress and by the FY2001 Energy and Water Appropriations Act, which required DOE to assess the implications for uranium conversion and enrichment.

There are other impacts of fuel cycle facility industry consolidation on NRC oversight and regulation of the industry. For example, although the Commission approved staff plans to proceed with a rulemaking to establish a stand-alone, risk-informed, and performance-based rule for uranium recovery in August 2000, because the number of facilities to which the rule would apply has reduced significantly since the staff originally made the recommendation, and the potential future for uranium recovery is bleak over the next several years, the Commission has directed the staff to develop guidance rather than rulemaking.

Conclusion:

No follow up action is recommended. Many of the impact assessments discussed in other areas are applicable to licensed fuel cycle facilities as well as licensed reactor sites. Staff is currently considering options to consolidate the fuel cycle inspection program, in parallel with efforts to revise the oversight process and to evaluate the results of the recently-completed Phase II Byproduct Materials Review. NRC experience in handling past and pending consolidations within the fuel cycle industry has demonstrated that the existing regulations, guidance, and processes have been able to handle the various consolidation efforts.

CATEGORY 7 - FINANCIAL

Issue 7.a - Foreign Ownership

Background:

Two comments were received, one from an individual and one from National Grid USA/New England Power (National Grid), that differed from the staff position. Two comments were received from NEI and NMC that agreed with the staff's assessment.

The individual was concerned with adequacy of NRC oversight of foreign owners as well as the adequacy of foreign owner safety performance. National Grid believed that the NRC should develop guidance that would allow more flexible ownership structures and provide greater certainty for proposed foreign investment. National Grid also proposed several structural examples that it believed would allow additional flexibility for foreign ownership.

Staff response:

Currently, the Atomic Energy Act of 1954, as amended (AEA), and the NRC's implementing regulations, do not permit the NRC to issue a facility license under sections 103 or 104 of the AEA to an applicant that is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government. With the recent sales of some nuclear power plants to applicants that are partially owned by foreign corporations, or sales of minority interests in nuclear plants to foreign corporations, the NRC has required, in essence, that all safety-related decision-making at the plant be retained by U.S. corporations under the control of U.S. citizens. Legislation has been introduced in Congress, which the NRC supports, to eliminate the foreign ownership prohibition. The NRC is required to enforce the law, no matter whether the foreign prohibition is retained or eliminated.

The NRC believes that its financial qualifications and decommissioning funding assurance requirements are sufficiently robust to ensure that licensees, domestic or foreign, are financially qualified to operate and decommission their facilities safely. In addition, the NRC's reactor and other facility oversight programs are designed to ensure that, notwithstanding any financial distress that a domestic or foreign licensee may suffer, the facilities will either continue to operate with an adequate margin of safety or be shut down.

Although sympathetic to the National Grid's concerns, the staff notes that the Commission is constrained by the explicit nature of the prohibition against foreign ownership, control, or domination contained in the Atomic Energy Act of 1954, as amended. When the staff developed its "Final Standard Review Plan on Foreign Ownership, Control, or Domination" (SRP), it reviewed the limited previous decisions made by the Commission in this area and the Commission's interpretation of the degree of latitude that the NRC had with respect to the foreign prohibitions. The staff concluded that, based on the Commission's interpretations, a 100-percent ownership situation is prohibited except in situations where the Commission knows that the foreign parent's stock is "largely" owned by U.S. citizens. When the Commission reviewed the standard review plan (SRP), it did not direct the staff to revise this interpretation. Thus, the staff cannot implement the National Grid proposals as long as the foreign prohibitions remain in their current form.

No change to the assessment was needed as a result of these comments.

Discussion:

The Atomic Energy Act of 1954, as amended, and the NRC's regulations in 10 CFR 50.38 provide that any person who is a citizen, national, or an agent of a foreign country, or any corporation, or other entity which the Commission knows or has reason to believe is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government, shall be ineligible to apply for and obtain a license. The NRC staff evaluates license transfer applications that involve foreign ownership considerations by using the Final Standard Review Plan (SRP) on Foreign Ownership, Control, or Domination, which was issued on September 28, 1999. In addition, the NRC is required to make a finding that the approval and issuance of a licensing action, including license transfers, would not be inimical to the common defense and security of the United States.

Ownership of domestic operating nuclear power plants has been explored by several foreign utilities. One joint venture, AmerGen, was formed to buy domestic nuclear power plants. This venture was structured as a joint partnership with a U.S. utility owning 50% and a foreign entity owning 50%.¹ Based on a "negation action plan" developed pursuant to the SRP to mitigate foreign ownership, control, or domination, the NRC found that the foreign partner did not control or dominate the safety-related decision-making related to the plant. Based on this assessment, the NRC was able to approve AmerGen's purchase of Three Mile Island, Unit 1, as well as subsequent license transfers involving AmerGen. The NRC has similarly analyzed proposals by other entities with some degree of foreign involvement. As industry consolidation progresses, it is anticipated that there will be additional situations in which foreign organizations seek to acquire domestic nuclear power plants and domestic utility organizations. However, the Atomic Energy Act significantly inhibits any foreign acquisitions and the NRC's reviews will be performed within these constraints, as reflected in the Commission's regulations and the SRP. The Commission has developed and submitted proposed legislation several times that would remove restrictions on foreign ownership. There has been no action on this proposal.

Impact Assessment:

Industry consolidation might affect the number of requests, but not the complexity of the NRC's process for evaluating foreign ownership, control, or domination. An applicant for several plant licenses would be required to meet the same standards as a single-plant applicant to address any foreign ownership, control, or domination issues in a negation action plan pursuant to the SRP. For example, AmerGen has bought three U.S. nuclear plants so far and has bid on several others. The NRC's review of AmerGen's additional acquisitions essentially followed the same template laid out in AmerGen's initial acquisition. A suitable negation action plan would also likely allow the NRC to make its required findings.

¹ Other than 100 percent ownership, either direct or indirect, by a foreign entity of a U.S. nuclear reactor, there is no pre-established limit above which foreign ownership would be absolutely prohibited.

At this time, it appears that current financial regulations and policies are sufficiently flexible to accommodate situations associated with foreign ownership resulting from industry consolidation, within the provisions of current law.

Conclusion:

Since there is no significant impact, no follow up action is recommended.

CATEGORY 7 - FINANCIAL

Issue 7.b - License Fee Structure

Background:

The NRC received one comment on this issue from NEI. While NEI agreed with the NRC staff's finding that there does not appear to be a need to change NRC's fee structure at this time due to industry consolidation, NEI's position is that fees charged to licensees should not include the cost of activities that do not directly benefit power reactor licensees.

Staff response:

For fiscal years 1991 through 2000, the Omnibus Budget Reconciliation Act of 1990 (OBRA-90), as amended, required that the NRC recover approximately 100 percent of its budget authority, less the amount appropriated from the U.S. Department of Energy (DOE), administered Nuclear Waste Fund, by assessing fees. To address fairness and equity concerns raised by the NRC related to charging NRC license holders for agency expenses that do not provide a direct benefit to the licensee, the FY 2001 Energy and Water Development Appropriations Act amended OBRA-90 to decrease the NRC's fee recovery amount from 100 percent to 98 percent of the NRC's budget authority in FY 2001. The OBRA-90 amendment further decreases the fee recovery amount by an additional two percent per year beginning in FY 2002 until the fee recovery amount is 90 percent by FY 2005. This comment is not directly related to industry consolidation and no change to the assessment was needed.

Discussion:

Since fiscal year (FY) 1991, the NRC has been required by the Omnibus Budget Reconciliation Act of 1990 to recover approximately 100 percent¹ of its budget, less any amount appropriated to the Commission from the Nuclear Waste Fund and the General Fund, by assessing fees. Additionally, in recent Appropriations Acts, Congress has permitted NRC to perform certain limited activities that are not subject to fee recovery.

The NRC assesses two types of fees to recover its budget authority. First, license and inspection fees, established in 10 CFR Part 170 under Title V of the Independent Offices Appropriation Act of 1952, recover NRC's costs for special services rendered to an individual licensee or applicant. These services include things like inspections and review of applications for the issuance of licenses (new, amended, or renewal). Second, annual fees, established in 10 CFR Part 171 under the authority of the Omnibus Budget Reconciliation Act of 1990, recover generic and other regulatory costs not recovered through 10 CFR Part 170 fees. The generic and other regulatory costs are allocated to classes of licensees on an annual basis.

¹ In order to address fairness and equity concerns related to charging NRC licensees for agency expenses that do not provide a benefit to the licensee, the FY 2001 Energy and Water Development Appropriations Act reduces the fee recovery amount by 2 percent per year, beginning in FY 2001, until the fee recovery requirement is 90 percent by 2005.

Continued consolidation is expected to result in fewer owners having more licenses under their domain. It does not appear that industry consolidation will have an effect on the total number of licenses held by the industry.

Impact Assessment:

NRC's assessment of fees is based on the filing of a request for NRC review and approval, or the existence of an NRC license or approval for individual facilities or licenses. There does not appear to be a need to change NRC's fee structure at this time due to industry consolidation.

Conclusion:

Since there is no significant impact, no follow up action is recommended.

CATEGORY 7 - FINANCIAL

Issue 7.c - Insurance

Background:

Three comments were received on this issue. One individual indicated a concern for restructuring of corporations that potentially could shield a parent company from liability. NEI disagreed with the staff position. UCS stated that it believed that the present liability coverage program and its foundation were no longer adequate in the deregulated environment given the potential lack of rate recovery of funds.

Staff response:

Under the Price-Anderson system's omnibus coverage provisions, any party found to be liable for an accident at a covered facility is indemnified. The licensee(s) of the facility is responsible for both obtaining and paying for primary insurance coverage of \$200 million obtained from American Nuclear Insurers (ANI). In addition, the licensee is also required to participate in the Price-Anderson system's retrospective premium system, as described in the discussion of this issue. Each year, the NRC requires licensees for each nuclear plant to submit evidence in the form of cash flow projections that they will be able to pay retrospective premium assessments. These requirements apply to foreign as well as domestic licensees. Also, ANI provides a guarantee of up to \$30 million to cover retrospective premium payments of those licensees that default on their payments. In recent nuclear plant sales, ANI has required the parent companies of licensee subsidiaries to provide guarantees that the subsidiaries will pay retrospective premium assessments, if necessary. Although the NRC cannot speculate on the actions it might take against the parent company of a licensee that defaulted on its retrospective premium payments, the NRC would almost certainly evaluate the feasibility of pursuing alternative actions, if required to preserve the integrity of the Price-Anderson system.

The staff disagrees with the NEI comment. First, the assessment of this issue did not conclude that "rulemaking is necessary." Rather, the recommended follow up indicated that consideration should be given to developing such a rulemaking. Second, if rulemaking did follow from further consideration of this issue, the nuclear industry and individual licensees, as well as other stakeholders, would have full opportunity to help develop a complete record. It may very well be that potential burdens on licensees of paying retrospective premiums for on-site property damage insurance would be minimal and very unlikely. However, there is insufficient information at this time to dismiss this issue out of hand.

The staff disagrees with the UCS comment. The Price-Anderson system was enacted by Congress in 1957 and subsequently modified and renewed several times. The NRC administers the Price-Anderson Act as it applies to reactor and certain other commercial facility licensees, but has limited discretion in how Price-Anderson coverage is structured. First, licensees are required to demonstrate under 10 CFR 140.21 that they can guarantee payment of retrospective premiums that may be levied under the Price-Anderson System in the case of an accident with liability claims exceeding the primary layer of insurance coverage of \$200 million. The NRC evaluates these guarantees annually and, to date, has not found any licensee that has not complied with this section of the NRC's regulations. Second, if a licensee

were to default on its payment of a retrospective premium, the nuclear insurance pools guarantee such payments up to \$30 million per incident. Third, in the case of an accident requiring payment of all or some portion of retrospective premiums, it is likely that premium assessments would be levied over a long period of time.

The bulk of claims is likely to arise as a result of latent cancers and other health problems that might take years to develop. Thus, licensees would likely have many years to fulfill their obligation to pay retrospective premiums. Although the licensee at whose facility the accident occurred would likely suffer severe financial distress and might be forced to default on its retrospective premium payments, as noted above, a significant portion of these payments would be guaranteed by the nuclear insurance pools. Plants of similar design to the plant where the accident occurred might be shut down for a period of time after the accident. However, it does not follow that these plants would never be allowed to operate again or that their owners could not pay retrospective premiums even if they were shut down. Once operating, the plants should be able to generate sufficient revenue to pay retrospective premiums, especially given the likelihood that many claims will not be made until several years after an accident. Fourth, even if there is substantial default on payment of retrospective premiums, as part of the 1975 amendments to and renewal of the Price-Anderson Act, Congress explicitly provided that, "in the event of a nuclear incident involving damages in excess of [the] amount of aggregate liability, the Congress will thoroughly review the particular incident and will take whatever action is deemed necessary and appropriate to protect the public from the consequences of a disaster of such magnitude."

Thus, no change to the staff's assessment is necessary as a result of these comments.

Discussion:

The Atomic Energy Act of 1954, as amended, and the NRC's regulations at 10 CFR Part 140 require licensees to provide financial protection for the off-site consequences of accidents at nuclear power plants. Insurance and indemnity programs have been developed to provide coverage for third-party liability claims that may arise from any accidents that may occur. Coverage includes \$200 million of primary insurance from commercial insurers. In addition, each power reactor licensee is required to provide secondary financial protection through an agreement to pay a retrospective premium that would, if necessary, be assessed against each power reactor licensee up to a maximum of \$83.9 million per reactor per accident, with an annual cap of \$10 million per reactor. The total available financial protection currently available is about \$9 billion per accident.

Additionally, 10 CFR 50.54(w) requires power reactor licensees to provide on-site property damage insurance of \$1.06 billion per unit. The NRC imposed this requirement after the Three Mile Island, Unit 2, accident in order to ensure that licensees had sufficient funds to stabilize and clean up a reactor site after an accident. The insurers and insured in the industry adopted a retrospective premium methodology (similar to Price-Anderson) to reduce the up-front premiums associated with on-site insurance. The insurers have performed their own assessments of license transfer applicants' ability to pay retrospective premium assessments. The NRC's policy has been to accept, although not necessarily endorse, the use of retrospective premiums for on-site insurance since it was developed in the early 1980s.

Impact Assessment:

With respect to Price-Anderson liability coverage, each reactor that a licensee owns will expose it to a potential retrospective premium assessment of \$10 million per year. For example, in the event of a major accident, a licensee with 20 reactors could be required to pay retrospective premiums of \$200 million annually for about 9 years. If a major accident forced the shutdown of a class of reactors for safety reasons, a consolidated licensee could lose a portion of its primary source of revenue for paying its retrospective premiums.

With respect to on-site insurance, licensees are also exposed to potential retrospective premium payments. These payments would be in addition to the retrospective premium payments required to be made under the Price-Anderson system and could impose additional financial stress on some licensees. Licensees with several plants will likely have access to a greater revenue stream than licensees with fewer plants. Nevertheless, the impact of being required to pay retrospective premiums for many units could be significant if a licensee were otherwise financially stressed.

The NRC has programs in place to evaluate a licensee's or license applicant's ability to pay retrospective premiums for both liability and on-site insurance. With respect to license transfers, this evaluation is part of the safety evaluation that the staff prepares to support approval (or denial) of license transfer applications. In addition, licensees are required pursuant to 10 CFR 140.21 to demonstrate annually that they are able to pay retrospective premiums for their reactors that may be assessed under the Price-Anderson system.

However, for those licensees not involved in license transfers, there is no requirement similar to that under 10 CFR 140.21 for licensees to demonstrate annually their ability to pay on-site insurance premiums. With industry consolidation, the potential burden of such retrospective payments on licensees, especially when coupled with Price-Anderson retrospective payments, could be significant. And it may become necessary at some time in the future to consider an annual requirement to demonstrate the licensee's ability to pay the net respective insurance premiums specified in 10 CFR 50.54(w) in parallel with those in 10 CFR 140.21.

Conclusion:

Should significant change occur in the industry, the issues considered above will be forwarded to NRR's Policy and Rulemaking Branch (Financial Regulatory Analysis Section) to be considered in the context of other financial initiatives and rulemakings using the NRC's Planning, Budgeting, and Performance Management (PBPM) process.

CATEGORY 7 - FINANCIAL

Issue 7.d - Joint and Several Regulatory Responsibility

Background:

Two comments were received from NEI and NMC. NEI accepted the Commission's position on joint and several regulatory responsibility and stated that the issue requires no further action as a result of industry consolidation. NMC, however, believes that the phrase "joint and several regulatory responsibility" is ambiguous and subject to uncertainty. NMC believes the Commission should make clear the exact intent of the language.

Staff response:

The Commission has explained the concept of the joint and several responsibility of its licensees on several occasions. Stated simply, it means that all co-owners and co-licensees are individually and jointly responsible for complying with the terms of their licenses. In its "Final Policy Statement on the Restructuring and Economic Deregulation of the Electric Utility Industry" 62 Fed. Reg. 44071 (August 19, 1997), the Commission stated that it

"reserves the right, in highly unusual situations where adequate protection of public health and safety would be compromised if such action were not taken, to consider imposing joint and several liability on co-owners of more than *de minimis* shares when one or more co-owners have defaulted."

On July 25, 2000, the Commission denied a petition for rulemaking to amend the regulations to preclude the imposition of joint and several liability. 65 Fed. Reg. 46661 (July 31, 2000). The Commission also emphasized, however, its already articulated policy not to impose operating and decommissioning costs on co-owners in a manner inconsistent with their agreed-upon shares, except in highly unusual circumstances when required by public health and safety considerations, and that it would not seek more than pro rata shares from co-owners with *de minimis* ownership. The Commission also noted that the term "joint and several liability" may have connotations for contract law that it did not intend to convey and that the term "joint and several regulatory responsibility" more accurately reflects the Commission's intent regarding the responsibility of co-owners and co-licensees. Thus, the Commission stated that it will use the term "joint and several regulatory responsibility" in lieu of "joint and several liability." Id. at 46663.

The staff believes that this issue requires no further clarification. Thus, no change to the assessment was needed as a result of these comments.

Discussion:

The NRC views all co-owners as co-licensees who are responsible for complying with the terms of their licenses. Co-owners and co-licensees generally divide costs and output from their facilities by using a contractually-defined, pro rata share standard. The NRC has implicitly accepted this practice in the past and believes it should continue to be the operative practice. Most power reactor owners and operators believe that each co-owner should be limited to its

pro rata share of operating costs and decommissioning expenses and that the NRC should not look to one owner to "bail out" another owner by imposing joint and several liability on the co-owners. Joint and several liability refers to the legal doctrine of holding all or any one of the co-owners financially responsible for the default of any co-owner.

The Commission addressed the issue of joint and several liability by nuclear power reactor licensees in its "Final Policy Statement on the Restructuring and Economic Deregulation of the Electric Utility Industry" 62 Fed. Reg. 44071 (August 19, 1997). The Commission stated that it

reserves the right, in highly unusual situations where adequate protection of public health and safety would be compromised if such action were not taken, to consider imposing joint and several liability on co-owners of more than *de minimis* shares when one or more co-owners have defaulted.

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Impact Assessment:

In its recent denial of the petition for rulemaking, the Commission addressed this issue in the midst of the trend toward industry consolidation. It, therefore, is unlikely that the issue warrants reconsideration in the near future. Indeed, the trend toward consolidation arguably makes it even more important to maintain the Commission's position.

Conclusion:

Since there is no significant impact, no follow up action is recommended.

CATEGORY 7 - FINANCIAL

Issue 7.e - Bankruptcy Protection

Background:

The NRC received comments on this issue from NEI that pertained to the reactor oversight program and decommissioning funding.

Staff response:

These comments are addressed under Issues 3.a and 4. The NRC monitors licensees' financial health using the reports filed under 10 CFR 50.71(b) and financial trade press resources to determine whether any bankruptcy filings appear to be imminent. As in the past, if a licensee files for bankruptcy protection, the NRC will work to ensure that health and safety interests are adequately represented in bankruptcy proceedings. No change to the staff's assessment of Issue 7.e is needed as a result of these comments.

Discussion:

The provisions in 10 CFR 50.54(cc) require a licensee to notify the NRC when a voluntary or involuntary petition for bankruptcy is filed under Title 11 of the United States Code against it or its parent or affiliate. Notifications of petitions for bankruptcy are required for fuel cycle facilities under 10 CFR 40.41(f)(1) and 70.32(a)(9)(i) and for spent fuel storage licenses under 10 CFR 72.44(b)(6)(i). The NRC needs information with respect to bankruptcy filings against its licensees in order to determine whether additional action is warranted. Specifically, the NRC must be able to participate in bankruptcy proceedings when necessary to ensure the adequate protection of the public health and safety.

Impact Assessment:

Industry consolidation, in and of itself, is not expected to increase or decrease the frequency of bankruptcy filings by licensees. However, a bankruptcy filing (either under Chapter 7 or Chapter 11 of the U.S. Bankruptcy Code) by a licensee with several plants could have more wide-ranging effects than a licensee with only one or a few plants. It is likely that the NRC's reactor oversight process will detect declining plant performance caused by financial stress, including bankruptcy. However, a bankrupt licensee with several plants, each of which could possibly require increased NRC oversight, could place additional burdens on the NRC oversight process.

Additionally, a bankrupt licensee with few assets other than its nuclear plants might have difficulty in obtaining necessary funds to operate and decommission its nuclear plants even with, as is likely based on previous experience, positive actions by a bankruptcy court. (Presumably, a licensee that only owns nuclear assets would file for bankruptcy protection only because the revenues received from its power sales in an unregulated market were insufficient to cover its overall production costs. In such a situation a bankruptcy court could do little to improve a licensee's cost structure beyond relieving it of some portion of its debt burden.) In a worst case situation, the NRC could be required to shut down the nuclear plants of a bankrupt licensee if sufficient operating funds were unavailable.

Licensees with only nuclear assets would almost certainly not be subject to rate regulation. As such, these licensees are required under NRC regulations to have decommissioning costs prepaid or otherwise guaranteed in an amount either based on NRC-stipulated generic formulas or on site-specific estimates, if greater than the formula amounts. Although unlikely, if the cost estimates did not reflect the full cost to decommission because of unforeseen difficulties in the decommissioning process, the bankruptcy of a licensee could have adverse impacts on the timing and completion of decommissioning. As in the past, if a licensee files for bankruptcy protection, the staff will work to ensure that health and safety interests are adequately represented in bankruptcy proceedings.

Conclusion:

Noting the current state of the industry and the staff's sensitivity in reviewing annual financial reports regarding decommissioning funding, no follow up action is recommended.

CATEGORY 7 - FINANCIAL

Issue 7.f - Financial Qualifications

Background:

The NRC received two comments on this issue from NEI and NMC. NEI stated that no additional initiatives were needed in this area. NMC agreed with the staff position that periodic monitoring would be appropriate.

Staff response:

The staff disagrees with the NEI comment to the extent that NEI argues that no further consideration should be given to financial qualifications during the transition period between permanent plant shutdown and decommissioning. It may well be that licensees with several nuclear and, perhaps, other generation facilities as a result of industry consolidation may generate sufficient cash flow to cover expenses during a transition period. However, as part of its regular oversight function, the staff remains aware of licensees' financial status during this period.

The staff agrees with the NMC comment. In the past, the staff studied the potential need for changes with respect to financial qualifications for the transition period between shutdown and decommissioning and may study this issue again in the future if the need arises. Thus, no change to the staff's assessment of this issue is needed as a result of comments received.

Discussion:

The provisions of 10 CFR 50.33(f) require that power reactor licensees demonstrate that they are financially qualified to construct and operate their nuclear plants safely. Licensees that are "electric utilities" are exempt from demonstrating financial qualifications at the operating license stage pursuant to 50.33(f). Currently, the provisions of § 50.33(f) require licensees or applicants to demonstrate financial qualifications, in essence, by showing that projected revenues exceed expenses over the first five years following the licensing action. Additionally, applicants for the transfer of the Three Mile Island, Unit 1, Pilgrim, Clinton, and other plants recently sold have provided parent company guarantees of additional operating expenses. NUREG-1577, Rev. 1, provides additional information on how licensees and applicants may demonstrate financial qualifications for initial licensing and license transfers. The issue is whether industry consolidation will affect the ability of applicants and licensees to demonstrate financial qualifications.

Impact Assessment:

As industry consolidation proceeds, licensees with a large number of reactor units may be vulnerable to financial stress if a significant number of their units are shut down at one time or are otherwise unable to operate over sustained periods at costs less than revenues received for output from the plants. This situation could be exacerbated for licensees that are no longer diversified companies with substantial non-nuclear assets (e.g., transmission lines, distribution

networks, non-nuclear generating units) to provide offsetting revenues. On the other hand, industry consolidation may actually reduce some financial risk by spreading out risk among several units -- that is, it is unlikely that several nuclear units would be shut down at the same time. The remaining operating units could provide sufficient funds to cover expenses for the shutdown plants. Of course, if a consolidated licensee had reactors predominantly of one design, and that design was found to have sufficient safety concerns to cause an extended shutdown of all the units of that design, the financial stress would likely increase significantly.

Once a plant is permanently shut down and enters decommissioning status, financial qualification for operations is no longer a health and safety issue. Rather, the issue then concerns the adequacy of decommissioning funds. However, the ability to provide safety expenditures during the transition period between a permanent shutdown and decommissioning could be affected if the licensee is financially stressed. It is not clear, at present, whether industry consolidation would positively or negatively affect access to funds during such a transition period. However, this issue has been raised in license transfer cases by petitioners to intervene.

In 1997, in SECY-97-253, the staff proposed to conduct a rulemaking, among other things, to require sufficient financial resources in certain reactor license transfer cases to assure funding for the transition from cessation of operations to the beginning of decommissioning, but the Commission did not approve the proposal. In SECY-98-153, the Commission again considered the issues related to reactor financial qualifications in light of industry restructuring and decided to delay that rulemaking in its SRM dated December 9, 1998. The current standard review plan (SRP), based on the current rules, requires only that the non-utility license transfer applicant comply with the same financial qualifications standards as for a non-utility operating license applicant: it must submit estimates of annual operating costs for each of the first 5 years of operation of the facility and indicate a source of funds to cover the operating costs.

However, the current *de facto* situation is different. One entity, AmerGen, has "voluntarily" set up a \$200 million reserve for the plants it has or is planning to acquire. Within the \$200 million it has apparently established specific funds for specific reactors, and it has pointed to those funds in State Public Utility Commission proceedings as "assurance that at least that amount will be available specifically to assure for the transition from cessation of operation of Vermont Yankee to the beginning of its decommissioning." (*Nucleonics Week*, Volume 41, Number 23, June 8, 2000, at page 5.) The Commission, in its recent license transfer decisions has specifically acknowledged the staff practice of capturing these "voluntary" offers in license conditions.

Conclusion:

Noting the current state of the industry and factors influencing the need for power in the United States, no follow up action is recommended.

CATEGORY 8 - NON-NRC REGULATORY CONSIDERATIONS

Issue 8.a - Grid Stability/Reliability

Background:

One written comment from NRSRG was received on this issue. The nature of the comment was that the staff's focus in the two areas of Reliable Off-site Power and Grid Stability/Reliability has been on monitoring efforts. While NRSRG does not take issue with this, they suggest that licensees also should be included as stakeholders in dealings with non-NRC authorities to protect the off-site power needs and other safety interests of power reactors.

Comments received at the public workshop amplified on the matter of NRC working with entities such as the Federal Energy Regulatory Commission (FERC) and the North American Electric Reliability Council (NERC) on RTOs. Several stakeholders suggested that NRC should increase interaction with the FERC, under whose auspices the RTOs are being developed.

Staff response:

It is part of NRC's normal practice to include licensees as stakeholders in any activity that could affect their facilities. The staff has met with FERC and NERC to gain insights into the formation of RTOs. The results of continued monitoring will dictate any needed modifications to the level of interaction.

The assessment has been modified to address these comments.

Discussion:

As discussed in Issue 1.f, reliability of off-site power and grid stability are safety-significant issues. There is a large and diverse combination of situations possible when the issues of nuclear industry consolidation, economic deregulation, and separation of generation and transmission functions are considered simultaneously. A consolidation of companies may occur with or without economic deregulation. The parties involved in a deregulated electrical industry could include companies generating electricity, regulated entities such as an Independent System Operator in charge of transmission and distribution, and regulatory agencies such as the FERC which may have significant impacts on the market environment in which nuclear power plants operate. Similarly, RTOs are being developed under the auspices of the FERC. Given the complex range of possibilities coming into play in a market environment, the effects on grid stability/reliability cannot be predicted with any confidence. It is prudent to monitor grid stability around nuclear power plants and anticipate scenarios that may require NRC actions.

Deregulation and restructuring of the electric power industry prompted the NRC to conduct studies and initiate interaction with entities such as the National Electricity Reliability Council. A Commission paper was issued on May 11, 1999, on "Effects of Electric Power Industry Deregulation on Electric Grid Reliability and Reactor Safety" (SECY-99-129). A study was commissioned at the University of Wisconsin to examine how deregulation has worked in other industries relative to safety (NUREG/CR-6735). The staff also responded to grid-related events

that have occurred at some plants by getting stakeholders such as the Nuclear Energy Institute and Institute of Nuclear Power Operations involved in discussions regarding industry-sponsored initiatives, and the adequacy of the existing regulatory requirements, such as those in General Design Criterion 17. On the basis of the insights gained so far, it appears that grid reliability issues are primarily a consequence of economic deregulation rather than industry consolidation. This was demonstrated by the California experience of the 2000-2001 time period.

Impact Assessment:

Experience in other industries has shown that the transition phase from a regulated to a deregulated activity is often accompanied by unanticipated difficulties. This may be the case with the impacts of deregulation on electrical grid performance. Prior to consolidation and economic deregulation, licensees of nuclear power plants were “utilities” who controlled both the generating plants and the distribution grid. With consolidation and economic deregulation, these two functions are generally within separate corporate entities. Thus, NRC licensees may no longer have direct control of the grid; and NRC regulations which addressed grid reliability by the licensee would not apply to the grid operator.

At this time, operational experience appears to indicate that grid stability/reliability will be strained without additional capacity in transmission and generation. In a deregulated market, if sufficient economic incentives are not provided for maintaining adequate reserve capacity, cost control will lead to a decrease in reserve capacity with corresponding problems during peak periods, power system disturbances, etc. The heavy cost burden of maintaining sufficient spinning reserve that does not produce revenue may or may not be transferrable to the consumer.

Reductions in system reserve margins and unregulated fluctuations may increase the likelihood of trips that can challenge safety systems in ways not considered in the plant’s probabilistic risk assessment (PRA). Grid stability/reliability responsibility may move from the licensees to independent grid operators. The frequency and voltage level under degraded grid conditions may present safety concerns relative to supporting safety system operations.

Experience has shown that nuclear power plants that perform well tend to be low-cost producers, thus offering strong economic incentives for the licensee to keep operations proceeding smoothly. As a consequence, licensees are likely to pay close attention to conditions outside the immediate confines of the plant. This may increase the likelihood that grid disturbances will be noticed by licensees and that they will anticipate potential problems. Additionally, if a licensee operates plants at multiple sites which feed power into a grid, there would be an incentive to assure grid stability on a company-wide basis. This is likely to lead consolidated licensees to coordinate activities among their sites to improve grid stability. For example, on-line maintenance performed at each of the sites may be coordinated to reduce the probability that more than one plant might trip off-line.

The NRC has sufficient regulatory and inspection mechanisms in place to identify and respond to nuclear safety concerns that may develop as a result of grid-related stability and reliability issues. As experience is gained with the deregulated industry, changes to the regulatory framework may be required. The NRC has informed the industry stakeholders of its concerns

and has observed that organizations such as NEI and INPO are responding with their own initiatives to address the concerns. Any proposals to change the regulatory framework will be based on information from the NRC's monitoring activity as well as assessments of operational experience. The staff monitors the developments unfolding in different parts of the country and there are current efforts to assimilate information, including appropriate interactions with the cognizant external stakeholders with respect to the formation and functioning of RTOs. This ongoing monitoring and interaction will identify any possible need for the NRC to become more proactive with respect to grid reliability issues. The NRC has established communication channels with industry stakeholders and other government and non-governmental entities to obtain accurate and timely information.

Conclusion:

No follow up action is recommended.

CATEGORY 8 - NON-NRC REGULATORY CONSIDERATIONS

Issue 8.b - Antitrust Considerations

Background:

Two comments were received from NEI and NMC. NEI and NMC agreed with the Commission's actions eliminating the antitrust review of license transfer applicants and also agreed that the Commission should continue to seek legislation to eliminate all NRC antitrust reviews. NEI, however, does not accept the NRC's conclusion that absent a statutory change, antitrust reviews for new facilities must continue. NEI points to Section 105c(7) of the Atomic Energy Act for authority, with the approval of the Attorney General, to except certain classes of applicants from preclicensing antitrust review. NEI believes that changes in the electric power market and its regulatory environment, including the expanded authority of the FERC, warrant excepting from preclicensing antitrust review applicants for new nuclear power plants that will be operated as "merchant generators." NEI states that merchant generators produce power for sale in competitive wholesale markets and do not own or control access to transmission assets.

Staff response:

The staff is in general agreement with NEI on a basis to except from preclicensing antitrust review applicants for new nuclear power plants that will be operated as "merchant generators." This issue is being evaluated by the Commission's Office of the General Counsel. The assessment has been modified to reflect this.

Discussion:

On June 18, 1999, the Commission issued a Memorandum and Order in the Wolf Creek license transfer proceeding dismissing a petition to intervene on antitrust grounds. *Kansas Gas and Electric Co.* (Wolf Creek Generating Station, Unit 1), CLI-99-19, 49 NRC 441 (1999) (Wolf Creek). In *Wolf Creek*, the Commission "concluded that the Atomic Energy act does not require or even authorize antitrust reviews of post-operating license transfer applications, and that such reviews are inadvisable from a policy perspective." The Commission directed the staff to initiate a rulemaking to clarify the Commission's regulations to remove any ambiguities and ensure that the rules clearly reflect the views set out in the *Wolf Creek* decision. On August 18, 2000, the final rule became effective. The Commission stated that "because the Commission is not authorized to conduct antitrust reviews of post-operating license transfer applications, or at least is not required to conduct this type of review and has decided that it no longer will conduct them, no antitrust information is required as part of a post-operating license transfer application. Because the previous regulations did not clearly specify which types of applications are not subject to antitrust review, these clarifying amendments bring the regulations into conformance with the Commission's limited statutory authority to conduct antitrust reviews." 65 Fed. Reg. 44649 (July 19, 2000).

The *Wolf Creek* decision and the clarifying rule, which apply only to post-operating license transfers, eliminate antitrust reviews for transfers of facility operating licenses which occur after the issuance of the initial operating license for the facility. They do not affect the Commission's continuing statutory obligation to conduct antitrust reviews of applications for new facility

operating licenses. The Commission has repeatedly sought legislation to eliminate all Commission antitrust reviews, but such legislation has not been enacted. Therefore, antitrust reviews for new facilities must continue to be conducted. However, the staff has under consideration a request to except new nuclear power plants that will be operated as "merchant generators" from preclicensing antitrust reviews.

Impact Assessment:

The Commission's decision in the *Wolf Creek* case, and the final rule affirming that decision, reflect the Commission's conclusion that the trend toward increased consolidation and deregulation in the nuclear power industry warranted a close look at the limited antitrust authority conferred upon the Commission by the Atomic Energy Act. The result was the Commission's conclusion that the Act does not require antitrust reviews for post-operating license transfers and, even if they are authorized, they no longer will be conducted as a matter of sound policy. Although that result applies only to operating license transfers occurring after the initial operating license has been issued, the Commission's policy reasons for eliminating those reviews which it was not required to conduct under the Atomic Energy Act apply equally to antitrust reviews of initial operating license applications for new facilities. It is, therefore, likely that the Commission will continue to seek legislation to eliminate all Commission antitrust reviews because such reviews duplicate responsibilities of other agencies that have more expertise in this area. Until and unless such legislation is enacted, however, antitrust reviews for new facilities must continue to be conducted except perhaps for those to be operated as merchant plants if the Attorney General approves such an exception. In a consolidated and deregulated industry, and where licensees are not electric utilities, those reviews could be more complex for an applicant that already owns a number of nuclear (and other electric generating) facilities. If so, the antitrust reviews conducted by the staff may require more resources than have been used for such reviews in the past.

Conclusion:

No further effort is recommended at this time.