

POLICY ISSUE INFORMATION

April 6, 2004

SECY-04-0053

FOR: The Commissioners

FROM: William D. Travers
Executive Director for Operations

SUBJECT: REACTOR OVERSIGHT PROCESS SELF-ASSESSMENT
FOR CALENDAR YEAR 2003

PURPOSE:

To present the results of the staff's annual self-assessment of the Reactor Oversight Process (ROP) for calendar year (CY) 2003.

SUMMARY:

The self-assessment results indicate that the ROP was generally effective in monitoring operating nuclear power plant activities and focusing U.S. Nuclear Regulatory Commission (NRC) resources on significant performance issues in CY 2003. The staff of the NRC maintained its focus on stakeholder involvement and continued to improve various aspects of the ROP as a result of feedback and lessons learned. In particular, the event at Davis-Besse Nuclear Power Station continues to cause a focused look at the NRC's oversight efforts and has resulted in several program improvements. The responses to the NRC's annual survey of external stakeholders, which solicited feedback on the ROP, were generally favorable; however, some stakeholders raised concerns about the complexity and subjectivity of the significance determination process (SDP), the effectiveness of the performance indicator (PI) program, a perceived lack of NRC responsiveness to stakeholder comments, and other areas where improvements have been suggested. All ROP self-assessment metrics were met, with the exception of one PI metric, two SDP metrics, and three overall metrics.

CONTACTS: Ronald K. Frahm, Jr., NRR/DIPM
301-415-2986

Stuart A. Richards, NRR/DIPM
301-415-1257

As part of the self-assessment effort, the staff identified issues and actions in the key ROP program areas of PIs, inspection, SDP, and assessment. As a result of the increased concern from the staff and many stakeholders about the effectiveness of the PI program, the staff has taken measures to improve the frequently asked question (FAQ) process by which PI issues are addressed, and plans to continue its reassessment of the PI program in CY 2004. Although the staff completed the baseline inspection program in CY 2003, resource challenges continued. The staff believes that the revised resident inspector staffing policy and additional regional resources allocated in fiscal year (FY) 2004 and beyond will address the site staffing and resource concerns associated with the ROP. The staff continues to focus on improving SDP timeliness and has made significant progress in implementing the SDP Improvement Plan. The staff also made several improvements in the assessment program during CY 2003, while other suggested adjustments were evaluated but not incorporated.

Although significant progress has been made in CY 2003, the staff expects to make continued improvements to the ROP based on lessons learned and stakeholder feedback. The staff plans to continue to actively solicit input from the NRC's internal and external stakeholders, and will evaluate potential program improvements via the ongoing self-assessment process. The staff will also continue to report the results of its annual self-assessment as part of the Commission briefing following the Agency Action Review Meeting (AARM).

BACKGROUND:

On February 24, 2000, the staff issued SECY-00-0049, "Results of the Revised Reactor Oversight Process Pilot Program." The resultant Staff Requirements Memorandum (SRM), issued on March 28, 2000, approved initial implementation of the ROP as recommended by the staff. The initial implementation of the ROP began on April 2, 2000. In a followup SRM issued on May 17, 2000, the Commission directed the staff to report on the implementation of the ROP results after the first year of implementation. Following completion of the first year of implementation, the staff assessed the efficacy of the process and documented the results in SECY-01-0114, "Results of the Initial Implementation of the New Reactor Oversight Process," issued on June 25, 2001. SECY-01-0114 also noted the staff's intention to continue to perform an annual self-assessment of the ROP. Accordingly, on April 3, 2002, the staff issued SECY-02-0062, "Calendar Year 2001 Reactor Oversight Process Self-Assessment," to present the results of the second annual ROP self-assessment. The third annual self-assessment of the ROP was documented in SECY-03-0062, "Reactor Oversight Process Self-Assessment for Calendar Year 2002," dated April 21, 2003. This paper provides the results of the fourth annual self-assessment of the ROP.

This self-assessment was performed in accordance with Inspection Manual Chapter (IMC) 0307, "Reactor Oversight Process Self-Assessment Program." The data for this self-assessment were obtained from many diverse sources to ensure that a comprehensive and robust assessment was performed. Specifically, the data sources included the ROP self-assessment metrics described in IMC 0307; the ROP internal feedback process; recommendations from independent evaluations; comments from external stakeholders in response to a *Federal Register* notice (FRN); and feedback received from stakeholders at various meetings, workshops, and conferences. The staff also considered the direction and insight provided by the Commission through several SRMs.

DISCUSSION:

During the fourth year of ROP implementation (CY 2003), the staff conducted numerous activities to assess the effectiveness and efficiency of the ROP. The staff actively solicited input from our internal and external stakeholders and assessed aspects of the ROP's effectiveness using the self-assessment metrics described in IMC 0307. The staff analyzed the input to gain insights regarding the effectiveness of the ROP in supporting the NRC's performance goals of maintaining safety; enhancing public confidence; making regulatory activities more effective, efficient, and realistic; and reducing unnecessary regulatory burden. The self-assessment metrics also provide insights regarding the success of the ROP in fulfilling the regulatory principles of being predictable, understandable, objective, and risk-informed.

The staff continued to improve various aspects of the ROP in CY 2003 as a result of feedback from internal and external stakeholders and lessons learned. Based on the self-assessment metrics, stakeholder feedback, and other pertinent information, the ROP was generally effective in monitoring operating nuclear power plant activities and focusing the NRC's resources on significant performance issues in CY 2003. Accordingly, the staff believes that plants continue to receive the appropriate level of oversight commensurate with their performance. The staff will endeavor to make further improvements to the ROP in CY 2004.

The staff identified issues and needed actions in the key program areas of PIs, inspection, SDP, and assessment, as discussed in the following paragraphs. In addition, the staff has included discussions and assessments of ROP communication and training activities, ROP self-assessment and independent evaluations, industry performance trends, security and safeguards activities, ROP resources, and resident inspector demographics. The final section of this discussion contains the staff's overall conclusions concerning the ROP self-assessment. As noted in the pertinent sections of this paper, the staff has also included several attachments to provide additional detail to support the staff's assessment and conclusions.

ROP Program Area Self-Assessments

The staff performed assessments in each of the four key program areas of the ROP, including PIs, inspection, SDP, and assessment, as summarized below. Attachment 1 to this paper includes a more detailed discussion of each ROP program area, with regard to the actions taken in response to previous commitments, the results of the self-assessment, and actions planned to address the identified issues. In addition, Attachment 2 provides a consolidated listing and status of previous issues, and Attachment 3 presents the annual self-assessment of ROP performance metrics and analyses.

PI Program - During CY 2003, the staff continued to work closely with stakeholders to improve the voluntary PI program, most notably with the ongoing development and pilot testing of the Mitigating Systems Performance Index (MSPI) as a potential replacement for the safety system unavailability (SSU) PI. The staff completed the pilot test of the MSPI and addressed a number of technical issues that were identified. Although the pilot and evaluation efforts resulted in an MSPI that had certain advantages over the SSU PI, the disadvantages and unintended consequences were deemed significant and outweighed the potential improvements. Based on these disadvantages and unintended consequences, which included policy, technical, and

implementation issues, the staff recently announced that use of the MSPI in the ROP, as piloted, would not be pursued further. However, the staff plans to document the detailed concerns with the piloted MSPI and share them with all interested stakeholders. The staff will then conduct a public meeting on MSPI and request that interested stakeholders provide formal written comments and potential changes regarding MSPI. After further discussion on these issues, the staff will document the results of this effort and will make appropriate recommendations going forward.

Since the middle of CY 2002, the NRC/industry working group has been unable to resolve differences in interpretation of the Scrams with Loss of Normal Heat Removal PI, and the dilemma has resulted in a backlog of nine frequently asked questions (FAQs). This PI demonstrates the inability to resolve some PI questions in a timely manner, which has demonstrated that the FAQ process can be inefficient, ineffective, and overly burdensome. As a result, the staff adopted a policy that whenever the NRC and industry are unable to reach agreement on a particular issue after two meetings, the NRC will make the final determination. The staff expects to address several other indicators in CY 2004 in the reactor safety arena, including an improved reactor coolant system leakage PI to address (in part) the lessons learned from the Davis-Besse event.

All PI metrics were met in CY 2003, with the exception that the responders to the NRC's survey of external stakeholders believe that the current set of PIs does not minimize the potential for licensee actions that could adversely impact plant safety. Survey results indicated that many stakeholders continue to believe that the PIs are ineffective at identifying significant performance problems. In addition, the number of "non-green" PIs has declined significantly over the past several years, resulting in less information on plant performance outliers from the PI program. As a result, the staff plans to continue its reassessment of the PI program during CY 2004.

Inspection Program - The inspection program continued to improve during the fourth year of ROP implementation based on feedback and lessons learned. The staff implemented several changes to the inspection program to address recommendations from the Davis-Besse Lessons Learned Task Force (DBLLTF) and other stakeholders. In particular, these changes included significant revisions to inspection procedure (IP) 71152, "Problem Identification and Resolution (PI&R)," and IP 71111.05, "Fire Protection." In addition, the staff made minor adjustments to several other IPs regarding procedure scope, frequency, and level of effort as a result of the annual review of the inspection procedures, the survey results, and the feedback process. In addition, the staff has recently reviewed the effectiveness of its inspections in the engineering design area and has developed a proposed pilot inspection program to test the effectiveness of a newly developed inspection procedure. The details regarding the proposed revisions will be communicated to the Commission in a separate Commission paper that is currently under development. All inspection program self-assessment metrics met their criteria for CY 2003, including the inspection report audits, which were reinstated during this assessment period after being suspended in CY 2002 as a result of significant changes to IMC 0612, "Power Reactor Inspection Reports."

The regions completed the required baseline inspection program for CY 2003, although resource challenges continued and some regional offices needed assistance from inspectors

outside the regions. However, the staff anticipates that the revised resident inspector staffing policy and additional budgeted regional resources will address the resource challenges and improve site coverage during CYs 2004 and 2005. The staff also plans additional improvements for the inspection program to reflect lessons learned from the Davis-Besse event, as well as continuing feedback from the regions through their implementation of the ROP.

Significance Determination Process - The ongoing initiatives to improve SDP efficiency and effectiveness continued during this period. The staff maintained the SDP Improvement Plan to address key stakeholder recommendations, including those from the SDP Task Group, an audit by the Office of the Inspector General (OIG), and input from the internal and external feedback processes. The most significant of the Plan's objectives completed in CY 2003 was the benchmarking of all site-specific risk-informed inspection notebooks. Additional notebook enhancements are planned for CY 2004. The next significant step in the enhancement of the phase 2 process for reactor safety findings will be the development of the pre-solved Phase 2 tables, which is currently scheduled to be completed by the end of CY 2005.

The timeliness of final significance determinations improved in CY 2003, but again fell short of the established goal. The staff anticipates continued challenges in CY 2004 with SDP timeliness in certain areas, particularly for fire protection issues and for SDPs that involve complex engineering analyses. The second unsuccessful metric in this area resulted from the continued negative perception from numerous stakeholders that the SDP results do not translate to the same level of significance across all cornerstones. However, the metric measuring the accuracy of SDP results communicated to the public, which failed to meet its criteria for CY 2002, improved significantly in CY 2003 (zero inaccuracies) based on the staff's implementation of new procedures requiring multiple checks prior to posting findings to the NRC's external Web site. In addition, the concerns expressed by external and internal stakeholders regarding the fire protection and shutdown SDPs are resulting in significant changes to those processes. When issued, the two SDPs will incorporate major revisions and will require training of inspectors and senior reactor analysts.

Assessment Program - During CY 2003, the staff made several improvements in the assessment program, as reflected in revisions to IMC 0305, "Operating Reactor Assessment Program," and IMC 0350, "Oversight of Operating Reactor Facilities in a Shutdown Condition with Performance Problems." In particular, the staff revised the guidance in IMC 0305 to clarify what constitutes a substantive cross-cutting issue, to include the option to request that a licensee respond to substantive cross-cutting issues, to provide increased flexibility in the scheduling of annual public meetings, and to incorporate lessons learned from the previous mid-cycle and end-of-cycle review meetings. As a result of DBLLTF recommendations, the staff also revised IMC 0350 to include a comprehensive correlation between aspects of the ROP and the IMC 0350 process, to provide enhanced structure in the inspection approach for IMC 0350 plants, and to add an entry condition based on a significant operational event without first having established that a significant performance problem exists.

All of the performance metrics in the assessment area met their established criteria or goals in CY 2003. The staff performed a detailed analysis of the industry's recommendation to increase the threshold for a degraded cornerstone from two to three "white" inputs, and concluded that

the existing threshold of two white inputs was appropriate and no changes to the thresholds were planned. The staff also determined that the industry's recommendation to apply a graded approach for removing inspection findings from consideration in the assessment program (wherein white and yellow findings would be considered for 6 and 9 months, respectively, as opposed to a full year) was not warranted. In addition, as requested by the Commission in an SRM dated June 10, 2003, the staff performed a review of the appropriateness of the Action Matrix thresholds and recommends that no changes are necessary to the Action Matrix at this time. However, the staff will continue to assess the combination of inputs and length of time for consideration in the Action Matrix as part of its annual self-assessment, to ensure that the NRC's response to licensee performance remains appropriate.

ROP Communication and Training Activities

The staff effectively implemented the ROP Communication Plan in CY 2003 and continued to focus on stakeholder involvement. In particular, the staff pursued a variety of communication initiatives to ensure that all stakeholders have access to ROP information and results, and have an opportunity to provide feedback. The staff also continued to conduct monthly public meetings and workshops with external stakeholders, as well as biweekly telephone conferences and frequent meetings with internal stakeholders. In addition, the staff conducted a survey of external stakeholders and continued the ongoing internal feedback process to solicit and analyze stakeholder feedback regarding ROP effectiveness.

The responses from the survey of external stakeholders were similar in content to previous years, as were the number and distribution of the responses. Specifically, half of the 18 responses were from utilities, while 3 were from State agencies, 5 were from public interest groups, and 1 was from an anonymous NRC staff member. The staff also evaluated stakeholder comments from the Commission briefing on May 15, 2003, along with the FRN responses. The responses were generally positive, with concerns being raised specifically about SDP complexity and subjectivity, the effectiveness of the PI program, the NRC's responsiveness to stakeholder comments, and other perceived needed improvements to the ROP. The staff was surprised by the perceived unresponsiveness to stakeholder comments concerning ROP implementation, including those noted by the anonymous NRC staff member. The public outreach and stakeholder involvement in the decision making process during development and implementation of the ROP have both been unprecedented, and the staff continues to focus on stakeholder involvement. In addition, the staff implemented several initiatives to improve the effectiveness of the external survey and address the major comments in the annual self-assessment each year.

The staff also performed a detailed analysis in CY 2003 of the survey comments submitted by internal stakeholders during the biennial internal survey conducted in late 2002. Based on a review of the written comments, the staff identified several repetitive themes, resulting in 10 recommendations and the generation of several ROP feedback forms. Several program documents have been revised or are in the process of being revised to address the feedback, and the staff has already closed many of the resultant feedback forms. Staff analysis of the survey responses is included in the applicable portions of the program area discussions in Attachment 1, as well as in the ROP performance metric report in Attachment 3.

The staff also continued its efforts to improve the inspector training programs and techniques in CY 2003. In particular, the staff implemented a policy to provide training to inspectors prior to issuing new or significantly revised guidance, based on feedback from the 2002 internal survey. The staff also established a management steering group to provide a structured means for monitoring and maintaining inspector training and qualifications to ensure that qualified inspectors have the appropriate knowledge and skills. In addition, the staff developed and implemented a Web-based read-and-sign training initiative to provide effective and efficient training to all inspectors. In CY 2003, the staff developed and distributed three read-and-sign training courses to address specific DBLLTF recommendations. Initial feedback on this read-and-sign initiative is very favorable.

The staff continued to make improvements to the ROP Web pages to ensure that they remain useful tools for communicating accurate and timely ROP information to all stakeholders. In an effort to increase inspector efficiency, the staff also continued developing an electronic support system for inspectors, including an online inspector newsletter that has received positive feedback from inspectors. The staff also continued to explore and make available new technologies as useful tools for inspectors. In summary, the staff continues to seek and implement improvements to the ROP based on feedback and insights from all stakeholders. Attachment 4 provides more detailed discussions and analyses of several ROP communication and training activities.

ROP Self-Assessment and Independent Evaluations

The ROP Self-Assessment Program is detailed in IMC 0307, which the staff recently revised to further improve the efficiency and effectiveness of the program. Attachment 3 to this paper presents the annual self-assessment report of performance metrics. The majority of the metrics met their established criteria; however, some metrics in the PI and SDP program areas did not meet their criteria and required further analysis. In addition, the staff determined that three of the overall program metrics failed to meet the established criteria as a result of negative perceptions regarding whether the ROP is appropriately risk-informed, whether the NRC is responsive to stakeholder inputs and comments, and whether the ROP results in unintended consequences.

In addition to the ROP self-assessment program, several independent evaluations have been performed since the inception of the ROP to analyze its effectiveness and recommend improvements. The OIG, the Office of Management and Budget (OMB), the Advisory Committee on Reactor Safeguards (ACRS), the Davis-Besse Lessons Learned Task Force (DBLLTF), and the SDP Task Group have all performed evaluations related to the ROP. These evaluations have generally provided favorable results, but have also suggested potential areas of improvement for the staff to consider. Most recently, the OMB Program Assessment Rating Tool (PART) evaluation of the ROP resulted in a score of 89 percent, corresponding to an "Effective" rating of the management of the program — the highest rating possible under the PART system. Several recommendations by the DBLLTF and others are addressed throughout this paper. Attachment 5 provides more detailed discussion of the ROP self-assessment program and independent evaluations.

Industry Performance Trends

In addition to the PIs used to assess individual plant performance under the ROP, the NRC uses industry-level indicators to identify and evaluate adverse trends, and take appropriate actions. The staff continued to implement and further develop the Industry Trends Program (ITP) in CY 2003 as a means to confirm that the nuclear industry is maintaining the safety of operating power plants and to increase public confidence in the efficacy of the NRC's processes. The ITP continues to monitor the industry-level indicators originally developed by the former Office for Analysis and Evaluation of Operational Data (AEOD) and the Accident Sequence Precursor (ASP) Program implemented by the Office of Nuclear Regulatory Research (RES). One important output of the ITP is to report to Congress each year on the measure of "no statistically significant adverse industry trends in safety performance" as part of the NRC's Performance and Accountability Report. The results of the ITP, along with any actions taken or planned, have been reported to the Commission in an annual paper that complements this paper and will also be reviewed at the AARM.

Security and Safeguards Activities

The staff ensured the security and safeguards of reactor facilities in CY 2003 through implementation of the ROP within the Physical Protection cornerstone. The staff utilized Temporary Instruction 2515/148, "Inspection of Nuclear Reactor Safeguards Interim Compensatory Measures," along with portions of the ROP baseline inspection procedures to satisfy the baseline inspection program. The staff also issued IMC 2201, "Security and Safeguards Inspection Program for Commercial Reactors," to establish interim policy and guidance for the security and safeguards inspection of commercial power reactors. In addition, the staff revised and issued IP 71130 and its attachments for verification and assessment of licensee action with respect to (1) safeguard events, (2) recurring, non-routine safeguards activities, and (3) Commission initiatives deemed necessary to address the adequacy of the protection of public health and safety from the design-basis threat or changes thereto.

The staff is in the process of revising the Physical Protection SDP in light of the current threat environment, potential changes in the design-basis threat, and other considerations. A draft revision has been developed and is currently under review by internal stakeholders. The staff and industry also recognize the need to improve the physical protection PIs, but these efforts were put on hold and will be evaluated as part of the staff's ongoing security review.

The staff is currently evaluating various options for the treatment of physical protection issues under the ROP for CY 2004 and beyond. In making its determination and recommendation, the staff will need to carefully balance the goals of the ROP with the perception that plant-specific security information may reveal vulnerabilities to potential adversaries and terrorist attacks.

ROP Resources

In last year's self-assessment, the staff reported that it had experienced resource challenges in completing the inspection program during the CY 2002 inspection cycle and described the staff's responses to meet those challenges. Those challenges continued in CY 2003. In anticipation of the potential impacts, the staff took preemptive action in order to avoid any

adverse consequences. In CY 2003, the Office of Nuclear Reactor Regulation (NRR) and other staff contributed significant resources to assist two regions in successfully completing the baseline inspection program. This assistance impacted the staff's ability to complete some project work as scheduled, with delays in some personnel transfers and formal qualifications; however, it ensured completion of required baseline inspection procedures.

In order to address potential budget shortfalls and avoid inspection resource challenges in future years, the staff reevaluated the inspection resource needs in each of the four regions. As a result, the annual regional budget for operating reactor inspection activities for fiscal years (FYs) 2004–2006 was increased by approximately 15 full-time equivalent (FTE) positions over the FY 2003 budget, in part to provide additional resources for oversight of an IMC 0350 plant and to assist in post-supplemental inspection activities to verify licensees' improvement plans. The additional regional FTEs should alleviate resource challenges as these positions are staffed with fully qualified inspectors. The staff also revised the resident inspector policy to allow early assignment of new resident and senior resident inspectors to a site to minimize the frequency and length of site coverage gaps caused by resident inspector transfers. The new policy allows the regional administrator to assign a permanent resident inspector up to 12 months before the planned departure of the incumbent resident, and to assign senior residents up to 6 months before the planned departure of the incumbent senior resident. Attachment 6 provides a detailed discussion concerning ROP resource issues.

Resident Inspector Demographics

As the Commission requested in its SRM dated April 8, 1998, the staff developed metrics to monitor and trend resident inspector (RI) demographics and continues to report the data and analyses to the Commission on an annual basis. The 2003 RI demographics for "NRC time," "total resident time," "qualified total resident time," and "current site time" are below their 1999 values, reflecting a resident inspector population with reduced NRC experience. This decline is due principally to promotions and transfers within NRC of experienced resident inspectors and an influx of new hires. Importantly, many of the newly assigned resident inspectors had garnered substantial, relevant nuclear experience before joining the NRC. The 2003 demographics for senior resident inspectors (SRIs) have remained relatively stable in all areas since 1999, with the exception of relevant non-NRC experience, which has increased by 48 percent since 1999.

A comparison of this year's data with last year's data indicates a substantive increase in the hiring of new RIs. This is the largest increase since the staff first collected the data in 1994. This increase is a result of the turnover rate in SRIs during this period, which led to a number of new RIs entering the program as existing RIs moved up to fill the SRI positions. This indicates that SRIs are well-qualified for various jobs throughout the agency. Also, as indicated by the departure of only one RI and one SRI during this period, both as a result of retirement, inspectors are not leaving the program; rather they are being promoted or reassigned to positions within the agency and its regions. The staff believes that (1) the advancement within the agency of field-experienced inspectors is a healthy phenomenon, and (2) each of the demographic data sets will improve in 2004 and beyond as the influx of new RIs gain additional NRC experience.

In conclusion, the staff believes that the RI program continues to attract and retain quality staff, and the staff has no further recommendations for changing the RI program at this time. The staff will continue to monitor the RI demographics and report the data and recommendations to the Commission as part of this annual self-assessment. Attachment 7 presents a more detailed analysis of the 2003 RI demographics.

CONCLUSIONS:

The ROP was generally effective in monitoring operating nuclear power plant activities and focusing NRC resources on significant performance issues in CY 2003. The ROP continued to support the NRC's performance goals of maintaining safety; enhancing public confidence; making activities more effective, efficient, and realistic; and reducing unnecessary regulatory burden. The ROP also remained effective in meeting its program goals of being objective, risk-informed, understandable, and predictable. In addition, there were no statistically significant adverse trends identified in any industry-level performance indicators. However, the Davis-Besse event continues to cause a focused look at the NRC's oversight efforts and has resulted in several program improvements.

The staff maintained its focus on stakeholder involvement and continued to improve various aspects of the ROP as a result of feedback and lessons learned. Although the responses to the survey of external stakeholders were generally favorable, some stakeholders raised concerns about SDP complexity and subjectivity, the effectiveness of the PI program, the perceived lack of NRC responsiveness to stakeholder comments, and other perceived needed improvements to the ROP. In addition, most of the self-assessment metrics were met, with the exception of one PI metric, two SDP metrics, and three overall metrics. The staff continues to pursue improvements to address concerns in each of these areas.

Although significant progress has been made in CY 2003, the staff expects to make continued improvements to the ROP based on recommendations of the DBLLTF and other stakeholders. The staff also plans to continue to actively solicit input from the NRC's internal and external stakeholders in the interest of further improving the ROP, and will continue to evaluate program improvements via the ongoing self-assessment process. The staff will also continue to report the results of its annual self-assessment as part of the Commission briefing following the AARM.

RESOURCES:

This paper describes a number of program improvement activities. The resource requirements to develop and implement these improvements are a part of the overall ROP development and management effort and have been included in the budget requests through FY 2006. The current estimates are approximately 55 FTE and \$1.0 million for FY 2005 and approximately 55 FTE and \$1.1 million for FY 2006. These numbers include all NRR, RES, and regional efforts for ROP development, management, and performance assessment activities within the scope of the current budget requests.

COORDINATION:

The Office of the General Counsel has reviewed this Commission paper and has no legal objections to its content.

The Office of the Chief Financial Officer has reviewed this Commission paper for resource implications and has no objections.

/RA William F. Kane Acting for/

William D. Travers
Executive Director
for Operations

Attachments:

1. ROP Program Area Assessments
2. Status of Previous Issues
3. ROP Performance Metrics
4. ROP Communication Activities
5. ROP Self-Assessment and Independent Evaluations
6. ROP Resource Analysis
7. Resident Inspector Demographics

ROP Program Area Assessments

The staff of the U.S. Nuclear Regulatory Commission (NRC) performed an assessment in each of the four key program areas of the Reactor Oversight Process (ROP), including performance indicators (PIs), the inspection program, the significance determination process (SDP), and the assessment program. Each of these assessments was performed in accordance with Inspection Manual Chapter (IMC) 0307, "Reactor Oversight Process Self-Assessment Program." In each of the four program areas, the staff used self-assessment metrics and other pertinent information to provide insights regarding the effectiveness of the ROP in fulfilling the regulatory principles of being predictable, understandable, objective, and risk-informed, and in supporting the NRC's strategic goals of maintaining safety; enhancing public confidence; making regulatory activities more effective, efficient, and realistic; and reducing unnecessary regulatory burden. The staff also obtained input from internal stakeholders through counterpart meetings, focus groups, and the internal feedback process. In addition, the staff obtained external feedback through a *Federal Register* notice (FRN) solicitation for comments and through periodic meetings with the industry and other stakeholders.

Based on the metric results, stakeholder feedback, and other lessons learned through ongoing program monitoring, the staff identified certain issues and actions in each of the four key program areas, as discussed in the remaining sections of this attachment. In addition, Attachments 2 and 3 provide a comprehensive status of previous issues and an analysis of the self-assessment metrics, respectively.

Performance Indicator Program

In SECY-03-0062, "Calendar Year 2002 Reactor Oversight Process Self-Assessment," the staff described its assessment of the PI program during the third full year of ROP implementation. The staff discussed the Mitigating Systems Performance Index (MSPI), which was under development as a possible replacement for the Safety System Unavailability indicators, as well as a program to develop proposed changes to simplify and clarify a number of other indicators that have generated many questions from stakeholders. In addition, the staff noted that the Institute of Nuclear Power Operations (INPO) and the World Association of Nuclear Operators (WANO) have been represented at the MSPI public meetings, and the NRC staff has worked closely with INPO on the Consolidated Data Entry (CDE) program. Based on the responses to the external survey, members of the public and the nuclear industry appear to have varying views concerning the efficiency and effectiveness of the ROP performance indicators. In addition, one of the PI self-assessment metrics (i.e., to minimize the potential for PIs to influence licensees to take actions that could adversely impact plant safety) was not met. Accordingly, the staff plans to continue its reassessment of the PI program during CY 2004 as discussed below.

During the fourth year of ROP implementation, the staff continued its effort with the industry to develop the MSPI as a potential replacement for the safety system unavailability (SSU) PI. The staff completed the data collection phase of the pilot test of the MSPI on schedule in March 2003 and recently completed its evaluation of the results of the pilot. The staff determined that the piloted MSPI had certain advantages (e.g., more risk-informed and plant-specific) over the SSU PI for monitoring equipment performance and reliability.

However, the disadvantages and unintended consequences identified with the piloted MSPI were deemed significant and outweighed the potential improvements. These identified disadvantages and unintended consequences include:

- the inclusion of a risk limiter (i.e., front stop) precludes agency action within the Action Matrix for single failures attributable to performance deficiencies that would likely have resulted in agency action had the performance deficiency been evaluated using the existing SDP
- although MSPI uses plant-specific probabilistic risk assessments (PRAs) to calculate the unreliability portion of the MSPI equation, the component failure rates are calculated using generic industry failure data that is Bayesian updated with plant-specific data to establish component failure probability distributions for the calculation of component unreliability performance; this statistical approach requires a significant trend in adverse performance to overcome the heavy influence of the generic data before a risk significant single failure will trip a performance threshold
- after a green/white threshold is crossed, there is one input into the Action Matrix; additional MSPI risk-significant failures and performance deficiencies do not result in additional inputs into the Action Matrix until the white/yellow threshold is crossed (because a SDP will not be performed)
- the MSPI does not include the risk contribution due to external events, internal flooding, shutdown, and large early release frequency
- the MSPI is nearly a risk-based indicator and would drive NRC action, through the Action Matrix, based on accumulated risk which is integrated over a 12 quarter period, whereas SDP drives NRC action through individual events that have associated performance deficiencies
- the resources associated with MSPI implementation, including long-term inspection of the MSPI and implementation of the frequently asked questions (FAQ) process due to interpretation issues associated with MSPI input values and variables from plant-specific PRAs, will be significant
- elimination of SDP for areas covered by MSPI will result in enforcement inconsistencies and enforcement will not be based on the significance of specific issues
- the MSPI does not include fault exposure unavailability; consequently, a potentially significant portion of the risk contribution due to a performance deficiency is unaccounted for in the indicator
- the MSPI assesses risk differently than does the SDP; failures covered by MSPI would be evaluated in context of a change in core damage frequency for accrued trends in risk, as opposed to the SDP's evaluation of conditional core damage probability for individual component failures. As a result, when both are evaluated using the ROP's Action Matrix, a different response for a given plant risk could result.

- the MSPI concept will be difficult for the public to understand; the data and PRAs will not be available for public review

Based on these disadvantages and unintended consequences, the staff recently announced that use of the MSPI in the ROP, as piloted, would not be pursued further. However, the staff plans to document the detailed concerns with the piloted MSPI and share them with all interested stakeholders. The staff will then conduct a public meeting on MSPI and request that interested stakeholders provide formal written comments and potential changes regarding MSPI. After further discussion on these issues, the staff will document the results of this effort and will make appropriate recommendations going forward.

Beginning in 2002 and continuing throughout 2003 and into early 2004, the NRC/industry working group has been unable to resolve differences in interpretation of the "Scrams with Loss of Normal Heat Removal" (Sw/LONHR) PI. As a result, a backlog of nine frequently asked questions (FAQs) concerning that PI has developed, and some of those FAQs concern events that occurred as long ago as 2001. This PI demonstrates the inability to resolve some PI questions in a timely manner, which has in turn rendered the FAQ process inefficient, ineffective, and overly burdensome. Even if agreement is achieved after months of discussion, the NRC will not have taken timely action. By letter dated October 31, 2003, the Nuclear Energy Institute (NEI) wrote to the NRC's Executive Director for Operations to recommend that the NRC should eliminate the Sw/LONHR PI from the ROP. The staff responded by letter dated March 16, 2004, articulating its reasons for maintaining this PI and stating that if, in the future, agreement cannot be reached on a particular question in two meetings, the NRC will make the final determination.

Other PIs which the staff believes should be simplified and/or clarified include the following:

- **Unplanned Power Changes:** whether the indicator should include notices of enforcement discretion (NOEDs)
- **Safety System Functional Failures:** evaluate the 20-percent discrepancy in reporting, compared to the NRC database (much of the discrepancy may lie in the definitions used in each case); the staff is currently working with industry on this issue
- **Reactor Coolant System (RCS) Activity:** whether the WANO fuel reliability PI is a better measure
- **RCS Leakage:** incorporate lessons learned from the event at the Davis-Besse Nuclear Power Station to better trend unidentified leakage

In addition, the Advisory Committee on Reactor Safeguards (ACRS) and other stakeholders have expressed the need for PIs for the cross-cutting areas of problem identification and resolution, human performance, and safety-conscious work environment. The ACRS has also expressed concerns regarding the feasibility and usefulness of risk-based PI thresholds, particularly the "white/yellow" and "yellow/red" thresholds for the initiating events PIs.

Although some aspects of plant performance have improved based on licensees addressing certain PIs, the declining trend in non-green PIs has resulted in the PIs providing less information on plant performance outliers. Several internal and external stakeholders have also indicated that the current set of PIs and their respective definitions should be reevaluated to ensure that the PIs are measuring the appropriate parameters necessary to assess plant

performance. The staff's experience with performance indicators confirms that most PIs have a limited lifetime because it is expected that a licensee will react to any metric against which it is being measured. Accordingly, the staff plans to continue its reassessment of the PI program during CY 2004 to address outstanding concerns related to PIs identified through staff, ACRS, industry, and stakeholder feedback. This effort will address PI programmatic issues, definitions, thresholds, reporting accuracy, the number of FAQs, and the timeliness and inefficiency of the FAQ process. Specifically, the programmatic issues to be considered include the following:

- the need to develop new indicators to supplement or replace the existing indicators (including PIs for the cross-cutting areas)
- enhancements to the FAQ process
- whether some PI thresholds should be performance-based rather than risk-informed

The staff has followed INPO's development of its CDE database for the reporting of all data required by the NRC, INPO, and WANO. As part of the CDE, INPO recently took over the ROP PI data collection and reporting process from NEI, and successfully completed the first quarterly PI submittal for all plants in January 2004. The staff believes that the CDE may ease the burden on licensees for meeting their data reporting requirements. The staff intends to review INPO's final product in CY 2004 to ensure that it satisfies the NRC's needs and to verify that the CDE accurately captures the data that the staff needs to assess licensee performance.

The responses to the external survey indicated that the public and the nuclear industry have varying views on the efficiency and effectiveness of the PI program. The industry generally believed that the PI program was working well and supported the MSPI as an important initiative to improve the program. By contrast, the public has become increasingly concerned that the PIs are being managed by the licensees and have become ineffective as indicators of plant performance. Many internal and external stakeholders also indicated that the FAQ process had become overly burdensome and ineffective, particularly for issues involving the Sw/LONHR PI. As a result of the survey responses, one of the PI self-assessment metrics (i.e., to minimize the potential for PIs to influence licensees to take actions that could adversely impact plant safety) was not met. The Sw/LONHR PI, the SSU PI, and the Unplanned Power Changes PI were specifically identified as indicators that had the potential to influence licensee actions. Efforts are underway to evaluate these PIs to improve their effectiveness and minimize potential actions that may adversely impact plant safety. All other PI self-assessment metrics met their criteria and staff expectations for CY 2003.

In conclusion, although the PI program continues to provide the NRC with objective indicators regarding plant performance, the staff and many stakeholders have become concerned with the current set of PIs and their ability to provide adequate indications of declining performance in a timely manner. Accordingly, the staff plans to continue its reassessment of the PI program during CY 2004 to address outstanding concerns related to PIs identified through staff, ACRS, industry, and stakeholder feedback.

Inspection Program

At the end of the fourth year of ROP implementation, the staff's self-assessment and feedback activities indicated that, in general, the inspection program was meeting its predetermined goals and objectives. The staff addressed many previous issues by revising IMC 0612, "Power Reactor Inspection Reports," and made certain adjustments to the resource estimates and level of effort in individual inspection procedures to provide increased inspection flexibility. The baseline inspection program was completed at all plants, although resource challenges continued and additional assistance from inspectors outside the regions was necessary in some cases. Attachment 2 provides more complete discussion concerning the status of previous issues and details concerning the staff's related actions.

During this assessment period, the staff also revised two baseline inspection procedures to change the respective scope and/or level of effort. Specifically, the staff revised Inspection Procedure (IP) 71152, "Problem Identification and Resolution (PI&R)," in response to recommendations and feedback from the Davis-Besse Lessons Learned Task Force (DBLLTF), the PI&R focus group, and inspectors. The changes include enhanced requirements regarding the routine PI&R reviews conducted by resident inspectors, biennial reviews of longstanding issues, and biennial reviews of operating experience issues.

In addition, the staff revised IP 71111.05, "Fire Protection," to provide additional inspection requirements and guidance for evaluating licensees' manual actions in lieu of full implementation of Section II.G.2, "Associated Circuits," of Appendix R to Title 10, Part 50, of the *Code of Federal Regulations* (10 CFR Part 50). The suspension of associated circuits inspections continued throughout this period. In support of the fire protection improvement plan initiated by the NRC's Office of Nuclear Reactor Regulation (NRR), the staff expects to revise the inspection guidance in 2004 and lift the inspection moratorium on associated circuits. The staff will monitor the effectiveness of program implementation and make revisions based on feedback from the regions and other stakeholders.

The staff also recently performed the annual in-depth review of each baseline inspection procedure and its attachments. The objectives of the review were to (1) determine whether changes in scope, frequency, or level of effort are needed based on recent experience and inspector feedback; (2) determine whether a change in the estimated hours for completion is needed; (3) define or change what constitutes minimum completion of each inspectable area, if needed; and (4) critically evaluate all of the inspectable areas together to justify retaining them in the baseline inspection program, or determine whether the addition of a new inspectable area is warranted. The staff did not perform this review for the physical protection portion of the ROP because a temporary instruction (TI) to inspect the Safeguards Interim Compensatory Measures replaced the baseline program beginning in CY 2002, as described below. Based on this review, the staff did not identify any significant changes to the inspection program, although the staff is making minor adjustments to some inspection procedures. For example, the staff determined the need to enhance several baseline inspection procedures to provide a clearer definition of what constitutes a sample and more definitive guidance regarding the number of samples required for completion of the inspection. The change will improve the staff's consistency in documenting sample size in inspection reports and the reactor program system.

In addition, per the Commission's request, the staff has recently reviewed the effectiveness of its inspections in the engineering design area and has developed a proposed pilot inspection program to test the effectiveness of a newly developed inspection procedure. The details regarding the proposed revisions will be communicated to the Commission in a separate Commission paper that is currently under development.

All inspection program metrics met their established criteria in 2003. The staff suspended the metric for auditing of inspection reports (IP-1) during the last assessment period (CY 2002) to allow inspectors and regional management to become familiar with the new requirements of IMC 0612. To obtain the metric data, the staff recommenced the auditing of inspection reports during the first quarter of CY 2003, and reviewed 99 inspection reports from all four regions, which included a total of 254 findings. The percentage of findings documented in accordance with IMC 0612 requirements increased from 67.7 percent in the first quarter of CY 2003 to 88.9 percent in the fourth quarter, indicating an improving trend. In addition, a survey of external stakeholders asking about the usefulness of inspection reports indicated that the information contained in those reports was useful and timely and that the quality of the reports has improved.

All four regions reported that they completed their baseline inspections in accordance with IMC 2515, "Light-Water Reactor Inspection Program — Operations Phase." In SECY-03-0062, the staff reported that the regions experienced resource challenges in completing the inspection program in the 2002 inspection cycle and described the staff's responses to meet those challenges. Those challenges continued in 2003. In anticipation of the potential impacts, however, the staff took preemptive action in order to avoid any adverse consequences. Specifically, in 2003, NRR and regional staff contributed significant resources to assist two regions in successfully completing the baseline inspection program. That assistance impacted the staff's ability to complete some project work as scheduled, and caused delays in some personnel transfers and inspector qualifications, as discussed in Attachment 7. These coping strategies did, however, ensure completion of the required baseline inspection procedures.

In order to address potential budget shortfalls and avoid inspection resource challenges in future years, the staff evaluated the inspection resource needs in each of the four regions. As a result, the regional budget for operating reactor inspection activities for fiscal years (FYs) 2004 through 2006 was increased by approximately 15 full time equivalent (FTE) positions (compared to the FY 2003 budget), in part to provide additional inspection resources for oversight of a plant in accordance with IMC 0350 "Oversight of Operating Reactor Facilities in a Shutdown Condition with Performance Problems," and to assist in post-supplemental inspection activities to verify licensees' improvement plans. The additional regional FTEs should alleviate resource challenges as these positions become staffed with fully qualified inspectors.

In addition, the staff revised the resident inspector policy to allow early assignment of new resident and senior resident inspectors to a site. The new policy allows the regional administrator to assign a permanent resident inspector up to 12 months before the planned departure of the incumbent resident inspector, and to assign senior resident inspectors up to 6 months before the planned departure of the incumbent. The staff believes that this revised resident inspector staffing policy and additional regional FTEs will improve the site staffing levels with experienced and qualified resident inspectors in CY 2004. Attachment 6 provides further discussion and analyses of ROP resources.

As a result of the terrorist attacks on September 11, 2001, the staff issued Temporary Instruction (TI) 2515/148, "Inspection of Nuclear Reactor Safeguards Interim Compensatory Measures." The staff informed the Commission in SECY-02-0195, "Staff Plans to Use Temporary Instruction for Verification of Licensee Implementation of Power Reactor Security Interim Compensatory Measures and as Temporary Replacement of the Physical Protection Baseline Inspection Program," dated November 1, 2002, that the inspections conducted pursuant to TI 2515/148 were sufficiently scoped to satisfy portions of the baseline inspection program for the physical protection cornerstone in CYs 2002 and 2003. This was in conjunction with completion of portions of the ROP baseline inspection procedures and conduct of the physical protection cornerstone portion of the Performance Indicator Verification procedure. The staff issued IMC 2201, "Security and Safeguards Inspection Program for Commercial Reactors," which establishes interim policy and guidance for the security and safeguards inspection of commercial power reactors. The staff also revised baseline inspection procedure 71130 and its attachments for verification and assessment of licensee action with respect to (1) safeguards events; (2) recurring, non-routine safeguards activities; and (3) Commission initiatives deemed necessary to address adequacy in the protection of public health and safety from the design-basis threat or changes thereto.

As part of its ongoing efforts to improve the effectiveness and efficiency of the ROP, the NRC is currently evaluating a process that would allow licensees to receive credit for certain self-assessments. The NRC is considering allowing licensees to substitute a self-assessment for specific, predetermined NRC baseline inspections, as long as the self-assessment is conducted in accordance with an NRC-approved industry self-assessment process. The NRC would still monitor these self-assessments, but the staff anticipates that resource savings to the NRC and its licensees could be significant for these inspectable areas. The NRC plans to conduct a pilot program, which is likely to begin in 2004, to ascertain the feasibility of the licensee self-assessment process. The staff will report the status of the pilot program in the next annual ROP self-assessment.

In conclusion, the inspection program continues to meet the established goals. The regions completed the required baseline inspection program for CY 2003. Although resource challenges continued in CY 2003, the staff expects that the revised resident inspector policy and additional regional FTEs will improve the site staffing levels with experienced and qualified resident inspectors in CY 2004. The staff has also implemented several changes to the inspection program to address recommendations from the DBLLTF, and additional improvements are planned to reflect lessons learned as a result of the Davis-Besse event, as well as continuing feedback from the regions through their implementation of the ROP.

Significance Determination Process

During this period, the staff continued to implement the initiatives that were originally identified in SECY-02-0062 to improve the SDP process and thereby improve the timeliness in issuing final SDP results. In particular, the staff issued its updated SDP Improvement Plan in March 2001, and continues to maintain that plan to incorporate all stakeholder recommendations related to the enhancement of the SDP process. In November 2003, the staff included the SDP Improvement Plan in the Director's Quarterly Status Report to ensure continued management attention (reference Accession No. ML040140030 in the NRC's Agencywide Documents Access and Management System (ADAMS)).

During this period, the following eight SDPs were available to all stakeholders:

- IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations"
- IMC 0609, Appendix B, "Emergency Preparedness Significance Determination Process"
- IMC 0609, Appendix C, "Occupational Radiation Safety Significance Determination Process"
- IMC 0609, Appendix D, "Public Radiation Safety Significance Determination Process"
- IMC 0609, Appendix E, "Interim Physical Protection Significance Determination Process"
- IMC 0609, Appendix F, "Fire Protection Significance Determination Process"
- IMC 0609, Appendix H, "Containment Integrity Significance Determination Process"
- IMC 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process (SDP)"

Three of these eight appendices (A, F, and H) are risk-informed based on changes to core damage frequency. Appendices B, C, and D are more deterministic, assessing requirements designed to reduce the risk of occupational and public overexposure. The staff also made minor revisions to appendices A, B, C, and D, and is currently in the process of making major revisions to Appendices E, F, and H, which will be issued during 2004. In addition, the staff is currently developing four SDPs covering the areas of (1) maintenance, (2) steam generator tube integrity, (3) shutdown risk, and (4) spent fuel. The staff plans to issue those four new SDPs in 2004.

The timeliness of final safety-significance determinations is one of the most critical measures of the ROP self-assessment metrics. This indicator reached 73 percent during CY 2003, meaning that 27 percent of the findings identified as "more than very low significance" were not finalized within 90 days; that figure decreased from 43 percent during the previous period. The staff anticipates continued challenges in CY 2004 with SDP timeliness in certain areas, particularly for fire protection issues requiring Phase III analyses and for SDPs that involve licensees' complex engineering analyses. The objectives outlined in the SDP Improvement Plan are designed to enhance the tools needed for the continued improvement in timely arrival at a final significance determination.

During the current period, the staff has made significant advances to complete several objectives of the SDP Improvement Plan. In particular, the staff incorporated the agency's timeliness goals into the NRR and regional operating plans. The staff also added timeliness goals for licensee communications, such as choice letters and regulatory conferences in IMC 0609.01, "Significance and Enforcement Review Process," to enhance NRC communications with licensees.

The staff also revised the SDP guidance to allow preliminary categorization of potentially significant finding as "potentially greater than green," rather than a specific color. This category allows for a more timely preliminary significance evaluation and review process where the initial decision is based on the best available information at the time, and when the staff is confident that additional information affecting influential assumptions will be forthcoming. The staff is monitoring the effectiveness of this change, and plans to assess its impact in CY 2004.

An important inspection program tool in the area of reactor safety is the plant-specific, risk-informed inspection notebooks. The staff met the commitment to benchmark all notebooks during this period. As a result, all notebooks have been revised and currently reflect the best available licensee PRA information. However, as the project progressed, lessons learned over the 2-year benchmarking period resulted in incremental improvements in notebook quality, which were not captured in the early part of the effort. Recognizing the benefits derived from this process, the staff initiated a standardization effort that will further enhance the quality of about one-third of the notebooks (i.e., those originally benchmarked before process improvements were incorporated) by the end of 2004.

The NRC's Office of the Inspector General (OIG) completed an audit of the SDP, as documented in OIG-02-A-15, "Review of NRC's Significance Determination Process," dated August 21, 2002. The OIG recommended various refinements to help ensure the successful implementation of the SDP. The audit yielded 11 specific recommendations, which the staff incorporated into the SDP Improvement Plan for tracking purposes. The staff has resolved all recommendations as to expectation, tracking, and completion dates, and has fully completed 5 recommendations.

In addition, the agency established the SDP Task Group in late-2002 to complete an independent and objective review of the SDP and to address recommendations from the OIG audit and a differing professional opinion regarding the SDP. The SDP Task Group developed 30 recommendations, which are generally aimed at improving the risk-informed Phase 2 evaluations using the risk-informed inspection notebooks. To date, the staff has revised the SDP guidance or other portions of the ROP to incorporate 21 of the Task Group's recommendations. The staff is tracking the 9 remaining recommendations using the SDP Improvement Plan. A notable recommendation involves the use of pre-solved Phase 2 tables, which would eliminate the routine use of the risk-informed Phase 2 notebooks. The information required for the development of the pre-solved tables has been collected at two plants as part of a pilot program. A guidance document and format recommendations are being developed and should be ready by the end of CY 2004, and the staff plans to have the pre-solved tables available by the end of CY 2005.

In the staff's continuing efforts to improve the process, in addition to the previously discussed improvement plan, self-assessment metrics are in place to track changes in the quality of the program. During this period, program expectations were met in all but two of the nine areas monitored by these metrics. One of the two unsuccessful metrics resulted from the negative perception that the SDP results do not translate to the same level of significance for all cornerstones. In particular, several stakeholders have expressed concern regarding the imbalance between the risk-informed and deterministic cornerstones. In addition, the metric measuring SDP timeliness once again failed to meet staff expectations, although SDP timeliness has improved significantly over the past year. The goal of 75 percent of SDP results to be finalized within 90 days was missed by 2 percentage points (73 percent). Since a relatively small number of SDPs were completed in 2003, the data were influenced by a small number of issues, such as the Davis-Besse vessel head, the Dresden water hammer, and the DC Cook loss of essential service water (ESW) events. The metric measuring the accuracy of results communicated to the public failed to meet its criteria for CY 2002, but improved significantly in CY 2003 (zero inaccuracies) based on the staff's implementation of new procedures requiring multiple checks prior to posting findings to the NRC's external Web site.

In the coming year, the staff will continue to implement the SDP Improvement Plan. In particular, the staff will standardize the risk-informed inspection notebooks and will revise the SDP portion of IMC 0308, the "ROP Basis Document," to incorporate the associated "construction rules," which are used for the development of the notebooks. Considerable activity is also ongoing to improve other SDP tools. For example, the added risk contribution from external events (particularly fire) has occasionally resulted in the final significance determination to be more significant than the preliminary determination that only considered internal events. Therefore, the staff plans to develop a simple methodology that would help inspectors to evaluate the risk contribution from external initiators as part of the reactor safety Phase 2 process. The staff will also issue revised SDPs for assessing findings in fire protection, plant physical protection, and containment integrity. In addition, the staff will issue new SDPs to address findings in the areas of steam generator tube integrity, shutdown risk, maintenance, and spent fuel.

In conclusion, the SDP continues to serve as an essential component of the ROP, although ongoing improvements are needed. The SDP also proved to be a more reliable inspection tool in 2003, allowing inspectors and staff to use risk insights where appropriate, in determining the safety significance of inspection findings. The staff will continue to monitor planned SDP improvements and developments via the SDP Improvement Plan.

Assessment Program

In SECY-03-0062, the staff described the status of the ROP assessment program and identified issues for staff action during CY 2002. The more significant issues identified in that Commission paper and the subsequent staff requirements memorandum (SRM) included the need to consider adjusting the frequency of some of the annual assessment meetings, evaluating the treatment of substantive cross-cutting issues, enhancing IMC 0350 guidance for oversight of shutdown reactors with performance problems, and responding to the concerns of external stakeholders at the Commission meeting on May 15, 2003. Attachment 2 provides a more complete discussion concerning the status of previous issues and details concerning the staff's related actions. In addition, the latest revisions of IMC 0305, "Operating Reactor Assessment Program," and IMC 0350 address these issues and incorporate lessons learned from the previous mid-cycle and end-of-cycle review meetings.

In 2003, the staff performed a detailed analysis of the industry's recommendation to increase the threshold for a degraded cornerstone from two to three white PIs or inspection findings, as directed by the Commission SRM dated June 10, 2003. As documented in a memorandum to the Commission, dated August 29, 2003, the staff does not support changing the existing threshold of two white inputs to three white inputs for the following reasons:

- The staff reviewed the plants that have entered the degraded cornerstone column or multiple/repetitive degraded cornerstone column of the Action Matrix during the 3-year period from April 1, 2000, through March 31, 2003. That review revealed that 4 of the 11 plants that entered the degraded cornerstone column would not have entered that column if the entry threshold had been three white inputs, rather than the current threshold of two white inputs. As a result, those plants would have received a less-intensive IP 95001 inspection instead of an IP 95002 supplemental inspection. After further review of the IP 95002 inspections that were performed, the staff concluded that in these four cases, IP 95002 was the appropriate inspection for the issues at the plants,

and that the degraded cornerstone column of the Action Matrix was the appropriate action level.

- The SDP Task Group concluded that the current threshold of two white inputs in the same cornerstone as the criterion for a degraded cornerstone was reasonable and there was no information to suggest that it was inappropriate.
- The staff is currently reviewing the green/white thresholds for the individual SDPs and PIs in response to a variety of stakeholder concerns. The staff believes that these threshold questions should be fully resolved before any changes are made to the entry conditions for the Action Matrix.

The staff's memorandum to the Commission dated August 29, 2003, also addressed the issues raised by external stakeholders at the Commission briefing on May 15, 2003. The staff noted that the NRC actively solicits and continuously evaluates feedback from internal and external stakeholders throughout the year and incorporates appropriate changes. The staff has included the comments from the subject Commission meeting in the feedback disposition process, and has addressed the more significant comments in this Commission paper.

The Commission also noted in the SRM dated June 10, 2003, that the staff should review the Action Matrix thresholds to determine whether changes are needed to ensure that the Action Matrix categorization adequately reflects the safety significance of PIs and inspection findings. The SRM further requested that the staff provide a recommendation to the Commission in the CY 2003 ROP self-assessment report. The staff periodically reviews the effectiveness of the ROP assessment program, including the appropriateness of the Action Matrix thresholds, as part of its annual ROP self-assessment via a variety of mediums including the metrics program and internal and external feedback mechanisms. Additionally, senior NRC managers review the ROP self-assessment at the annual Agency Action Review Meeting (AARM). In addition to these ongoing self-assessment activities, the staff recently reviewed the Action Matrix thresholds for entering the degraded cornerstone column of the Action Matrix and found that the current threshold is appropriate as previously discussed above and noted in the staff's memorandum to the Commission dated August 29, 2003. Based on the CY 2003 review of the appropriateness of the Action Matrix thresholds, the staff recommends that no changes should be made to the Action Matrix at this time and considers this specific SRM item to be closed. However, the staff will continue to review the Action Matrix thresholds as part of its annual self-assessment and will report the results to the Commission.

The industry has also recommended a graded approach for removing inspection findings from consideration in the assessment program. This recommendation involves applying a graded approach based on safety significance, such that white findings would remain in the assessment program for two quarters, yellow findings for three quarters, and red findings for four quarters. The staff disagrees with this approach because the range of actions across the Action Matrix is graded, such that increased regulatory actions occur with the accumulation of "greater than green" assessment inputs. One concern with the industry's recommendation is that inspection findings would not remain in the assessment program long enough to allow increased NRC action with degrading performance, as envisioned during the development of the ROP. This would be inconsistent with the PI program, in which the indicators reflect performance over the past year or more based on specific algorithms. Additionally, experience since the inception of the ROP indicates that, in many cases, the licensee's corrective actions were not completed and were not deemed adequate within the four quarters for consideration in

the Action Matrix in accordance with the existing program. The staff does not currently plan to change this policy or expend additional resources to further evaluate this industry recommendation. However, the staff will continue to review the Action Matrix annually as part of the self-assessment and the Agency Action Review Meeting (AARM), to assess the appropriateness of the criteria for determining a licensee's placement in the Action Matrix.

The staff also revised IMC 0305 to give the regional offices increased flexibility in scheduling annual public meetings. The previous guidance stated that the annual public meetings are to be scheduled within 16 weeks of the end of the assessment period. The staff reassessed this requirement and determined that plants that have been in the licensee response or regulatory response column of the Action Matrix for the entire assessment period may schedule their annual public meetings up to 6 months after issuing the annual assessment letter.

One of the fundamental premises of the ROP is that significant weaknesses in the cross-cutting areas of human performance, safety-conscious work environment, and PI&R will be detected by PIs crossing thresholds or by inspection activities in sufficient time to allow for an appropriate NRC response to ensure adequate protection of public health and safety. In order to confirm the validity of this premise, the staff performs an assessment for all accident sequence precursor (ASP) events and for those facilities that reached the degraded cornerstone column of the Action Matrix. The staff did not perform this assessment of cross-cutting issues for CY 2003 because there were few recently analyzed ASP events or new plants that reached the degraded cornerstone column of the Action Matrix that had not already been analyzed in last year's assessment. However, the staff continues to analyze the area of cross-cutting issues to ensure that this fundamental ROP premise is met and that these issues are adequately addressed.

In addition, the staff revised the guidance to clarify what constitutes a "substantive cross-cutting issue" and to include the option to request that a licensee respond to the identification of such issues. The staff incorporated specific criteria into IMC 0305, and the program office continues to participate in each of the individual plant mid-cycle and end-of-cycle review meetings to ensure consistent application of this policy across the regions. In addition, the regions may request that the licensee provide a response to an unresolved substantive cross-cutting issue at the next annual public meeting, in a separate meeting specifically for that purpose, or in writing.

The staff also made significant revisions to IMC 0350 to address recommendations from the DBLLTF and to incorporate other lessons learned and clarifications. IMC 0350 now provides a comprehensive correlation between aspects of the ROP and the IMC 0350 process, enhances the structure of the inspection approach for IMC 0350 plants, and includes an entry condition based on a significant operational event, as defined in Management Directive (MD) 8.3, "NRC Incident Investigation Program," without first having established that a significant performance problem exists. In addition, the staff revised the inspection budget estimates for FY 2004 and beyond to include additional resources for the oversight of IMC 0350 plants and plants with significant performance problems in the future. The staff also made a simultaneous revision to IMC 0305 to add an "IMC 0350 process" column to the ROP Action Matrix (even though IMC 0350 plants are considered to be outside the auspices of the Action Matrix) for illustrative purposes to demonstrate the staff response and communication expectations in a format similar to plants within the Action Matrix.

For the period covered by this self-assessment, all of the performance metrics in the assessment area met their established criteria or goals. Examples of the assessment program metrics include (1) the number of deviations from the Action Matrix, (2) the number of significant departures from the requirements of IMC 0305 and IMC 0350, (3) the appropriateness of actions taken for “greater than green” PIs and findings, (4) the number and scope of any additional actions recommended at the AARM, (5) the number of timeliness goals for the assessment program that are not met, (6) the timeliness of completing supplemental inspections for risk-significant PIs and inspection findings, and (7) the number of instances in which plants move more than one column to the right in the Action Matrix from one quarter to the next. Attachment 3 to this paper provides the results for each of the assessment program metrics. In addition, there are two other metrics, which are discussed below, that evaluate feedback received from internal and external stakeholders.

The responses to the external survey indicated that the industry and State respondents generally agreed that the NRC is taking appropriate actions for those plants that are outside of the licensee response column of the Action Matrix. However, some respondents questioned the NRC’s response to the tube failure at Indian Point 2 and the head degradation event at Davis-Besse. The industry respondents generally agreed that the information contained in assessment reports is relevant, useful, and written in plain language. One State regulator stated that the reports were initially stilted and unclear, but they have continued to improve. One public interest group stated that the assessment letters contained too much boilerplate information. Many industry representatives continued to provide their recommendations to increase the threshold for a degraded cornerstone from two to three white PIs or inspection findings, and to incorporate a graded approach for removing inspection findings from consideration in the assessment program; however the staff disagrees with both recommendations, as previously discussed.

Overall, the assessment program continues to meet the agency’s goals of maintaining safety, using NRC resources efficiently and effectively, enhancing public confidence, and reducing unnecessary regulatory burden. The program also continues to meet the established ROP objectives of being objective, risk-informed, understandable, and predictable. Future staff work on the assessment program over the next year will include addressing outstanding DBLLTF recommendations and monitoring the effectiveness of recent changes to IMC 0305 and IMC 0350.

Status of Previous Issues

On April 21, 2003, the staff of the U.S. Nuclear Regulatory Commission (NRC) issued a Commission paper (SECY-03-0062), entitled "Reactor Oversight Process Self-Assessment for Calendar Year 2002." That Commission paper listed and discussed the status of previous issues related to implementation of the Reactor Oversight Process (ROP) for which the staff planned additional actions. SECY-03-0062 also discussed commitments and actions that the staff had planned as a result of the ROP self-assessment for calendar year (CY) 2002. The Commission also directed the staff to consider additional issues as detailed in several staff requirements memoranda (SRMs). The Davis-Besse Lessons Learned Task Force (DBLLTF), Office of the Inspector General (OIG), Efficiency Focus Group, Advisory Committee on Reactor Safeguards (ACRS), Significance Determination Process (SDP) Task Group, and other interested stakeholders have also recommended improvements to the ROP program.

During the last self-assessment period (CY 2003), the staff resolved many of these issues and made progress toward resolving several others. The remainder of this attachment lists and summarizes the status of the issues in each program area that were discussed in the aforementioned documents, including an update of the staff's actions to address those issues. Those issues that were closed during CY 2003 are so noted and will not be carried forward into next year's self-assessment. The respective program area assessments in Attachment 1 to this paper provide additional detail concerning the more significant issues listed below.

Performance Indicator Program

- (1) *Improvements to address problems in the Safety System Unavailability (SSU) Performance Indicator (PI)*

In March 2003, the staff completed a pilot of the Mitigating Systems Performance Index (MSPI), which was developed as a replacement for the Safety System Unavailability PI, and the staff's evaluation of the data revealed a number of issues that needed further work. Although the pilot and evaluation efforts resulted in an MSPI that had certain advantages over the SSU PI, the disadvantages and unintended consequences were deemed significant and outweighed the potential improvements. The staff therefore recently announced that use of the MSPI in the ROP, as currently proposed, would not be pursued further. Further information on MSPI is included in Attachment 1. In addition, the effort on MSPI has impacted other PI work, as noted below.

- (2) *Potential unintended consequences of the Unplanned Power Change PI*

Some stakeholders believe that the current Unplanned Power Change PI could influence licensees to operate the plant in a manner that is inconsistent with safety. Specifically, there are concerns with the requirements that the power change must exceed 20 percent and that licensees must allow 72 hours for planning the power change. The staff is investigating several alternatives to the current PI, and has presented those alternatives to stakeholders in the regularly scheduled public meetings. However, resolution of the issue has been delayed as a result of competing priorities (see above).

(3) *Develop improved Barrier Integrity cornerstone PIs*

The DBLLTF (reference item 3.3.3.3) recommended that the NRC should continue its ongoing efforts to review and improve the usefulness of the barrier integrity PIs. The first phase of this program calls for the staff to develop and implement improved barrier integrity indicators based on current requirements and measurements. As a result of its review, the staff is considering the following potential improvements:

- Fuel Clad: Reactor coolant system (RCS) activity could be replaced by the Fuel Reliability indicator proposed by the World Association of Nuclear Operators (WANO).
- Primary Coolant System (PCS): With the exception of pressure boundary leakage (which has a threshold of zero), all leakage measurements required by the technical specifications (TS) could be monitored by the PCS PI and compared (in some way) to the allowable TS limit. All parameters could then be displayed and the PI color could be determined by the one closest to its limit.
- Containment leakage: The containment leakage PI, which was deleted from the ROP following the pilot program in 1999, could be reinstated.

The staff is continuing its work to document these approaches in the form of PI definitions.

(4) *Physical Protection cornerstone PI issues*

The staff and industry recognize the need to improve the physical protection PIs. These efforts were put on hold as a result of competing priorities, which arose in the wake of the terrorist attacks on September 11, 2001. The staff will evaluate these efforts as part of the ongoing security review being conducted by the NRC's Office of Nuclear Safety and Incident Response (NSIR), in coordination with the NRC's Office of Nuclear Reactor Regulation (NRR). The staff plans to review and revise the Physical Protection PIs in CY 2004.

(5) *Emergency Preparedness cornerstone PI issues*

The staff discovered that the Alert and Notification System (ANS) PI may remain within the licensee response band, indicating greater than 94-percent reliability, even if the sirens are available less than 94 percent of the time. The staff evaluated this issue and determined that availability is best monitored by inspection. Accordingly, the staff has incorporated ANS availability into the inspection program, rather than into the ANS PI. Therefore, this issue is closed.

(6) *Clarify the guidance for the Safety System Functional Failure (SSFF) PI*

The staff discovered that the number of SSFFs that licensees reported for the ROP was 20 percent lower than the number identified by the NRC's contractors at the Idaho National Engineering and Environmental Laboratory (INEEL) using licensee event reports (LERs). Resolution of the issue was delayed as a result of competing priorities (see above); however, investigation into this discrepancy resumed in early 2004.

- (7) *Review ACRS recommendations concerning the white/yellow and yellow/red thresholds for performance indicators (PIs)*

In an SRM dated December 20, 2001 (M011205B), the Commission asked the staff to review ACRS recommendations concerning the white/yellow and yellow/red thresholds for PIs, particularly with regard to implementation of risk-based PIs. The staff has met and corresponded with the ACRS and acknowledges their concern. However, each of these thresholds has an established basis, and any proposed changes will require careful evaluation, as noted in the staff's responses to the ACRS. (See Accession Numbers ML023610493 and ML030980658 for the official record copies of those responses in the NRC's Agencywide Documents Access and Management System (ADAMS)).

The staff plans to conduct a thorough review and evaluation of the PI program, including the individual indicators, their thresholds, and the possible need for additional indicators, during the fifth year of ROP implementation. This review will consider the ACRS comments regarding the PI thresholds.

- (8) *Continue to work closely with INPO on the Consolidated Data Entry (CDE) program to develop a single database for the reporting of necessary data*

The primary goal of the CDE program is to consolidate the collection and reporting processes for all data required by the NRC, WANO, and the Institute of Nuclear Power Operations (INPO). The staff has discussed and reviewed the CDE program with INPO, and found that it appears to accurately capture the data that the staff needs for the ROP. The staff supported the recent shift in responsibility for PI collection and maintenance from NEI to INPO as part of the CDE program. The first set of PI data submittals under the CDE program were for the 4th quarter 2003 data, and all submittals were received and processed successfully in January 2004. This issue is considered closed.

- (9) *PIs are needed for the cross-cutting issues, and their development should be pursued by the staff*

The ACRS and other stakeholders have expressed the need for PIs for the cross-cutting areas of problem identification and resolution (PI&R), human performance, and safety-conscious work environment. The staff will consider PIs for the cross-cutting issues as part of its review of the PI program during the fifth year of the ROP (see item 7 above).

Inspection Program

- (1) *Continue to evaluate and revise as necessary the guidance for documenting inspection findings to ensure that significance thresholds are consistently applied*

The staff revised and issued Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports," on April 29, 2002. After a brief training period, all regions implemented the new requirements of IMC 0612 in July 2002. The staff also reissued IMC 0612 on June 24, 2003, to include a sample inspection report and to improve the clarity of the documentation guidance. In addition, the revision addressed inconsistencies that existed between IMC 0612 and other inspection program

documents, including the enforcement policy. The staff began auditing inspection reports against the requirements of the revised IMC 0612 in CY 2003. Specifically, to obtain the metric data, the staff reviewed 99 inspection reports from all four regions, which documented a total of 254 findings. That review revealed that the percentage of findings documented in accordance with the requirements of IMC 0612 increased from 67.7 percent in the first quarter of 2003 to 88.9 percent in the fourth quarter, indicating an improving trend. Therefore, this issue is closed.

- (2) *Revise the Physical Protection cornerstone inspection procedure and its attachments to account for significant changes and new polices in physical security*

As a result of the terrorist attacks on September 11, 2001, the staff issued Temporary Instruction (TI) 2515/148, "Inspection of Nuclear Reactor Safeguards Interim Compensatory Measures." The staff also informed the Commission in SECY-02-0195, "Staff Plans to use Temporary Instruction for Verification of Licensee Implementation of Power Reactor Security Interim Compensatory Measures and as Temporary Replacement of the Physical Protection Baseline Inspection Program," dated November 1, 2002, that the inspections conducted pursuant to TI 2515/148 were sufficiently scoped to satisfy portions of the baseline inspection program for the physical protection cornerstone in CY 2002 and CY 2003. This was in conjunction with completion of portions of the ROP baseline inspection procedures and conduct of the physical protection cornerstone portion of the Performance Indicator Verification procedure.

The staff also issued IMC 2201, "Security and Safeguards Inspection Program for Commercial Reactors," to establish interim policy and guidance for the security and safeguards inspection of commercial power reactors. In addition, the staff revised and issued baseline inspection procedure 71130 and its attachments for verification and assessment of licensees' actions with respect to (1) safeguards events; (2) recurring, non-routine safeguards activities; and (3) Commission initiatives that are deemed necessary to address adequacy in the protection of public health and safety from the design-basis threat or changes thereto. Accordingly, this issue is closed.

- (3) *Evaluate how licensee self-assessments might be used to satisfy some requirements of the baseline inspection program without compromising overall outcome goals, including public confidence*

As part of its ongoing efforts to improve the effectiveness and efficiency of the ROP, the NRC is currently evaluating a process that would allow licensees to receive credit for certain self-assessments. Specifically, the NRC is considering allowing licensees to substitute self-assessments for specific, predetermined NRC baseline inspections, as long as the self-assessments are conducted in accordance with an NRC-approved industry self-assessment process. The NRC would still monitor these self-assessments, but the staff anticipates that resource savings to the NRC and its licensees could be significant for these inspectable areas. The staff will conduct a pilot program, which is likely to begin in 2004, to ascertain the feasibility of the licensee self-assessment process. The staff will report the status of the pilot program in the next annual ROP self-assessment.

(4) *Ensure the adequacy of site staffing and modify policy as necessary*

In an SRM dated February 12, 2003 (M030204), the Commission requested the staff to inform the Commission when emergent or other issues significantly impede their ability to carry out their mission or a regional office requires significant resources from another region or office. Further, in an SRM dated June 10, 2003 (M030515), the Commission directed the staff to inform the Commission of significant regional ROP inspection challenges, including sites where there are currently less than two fully qualified inspectors assigned. The staff responded to the Commission in a memorandum dated October 16, 2003, regarding information on site staffing and the resource challenges and coping measures in completing the inspection program for CY 2003.

Additionally, the staff changed the resident inspector policy to allow early assignment of new resident and senior resident inspectors to a site. The new policy allows the regional administrator to assign a permanent resident inspector up to 12 months before the planned departure of the incumbent resident inspector, or to assign a permanent senior resident inspector up to 6 months before the planned departure of the incumbent senior resident inspector. This early reassignment policy should help the regions minimize the length of time during which the sites are not fully staffed.

In 2003, NRR and two regional offices made significant resource contributions to assist two other regions in successfully completing the baseline inspection program. The assistance provided by NRR and regional staff impacted their ability to complete some project work as scheduled, and there were delays in some personnel transfers and qualifications. The staff evaluated the inspection resource needs in each of the four regions to address challenges in future years. As a result, the regional budget for operating reactor inspection activities in fiscal years (FYs) 2004 through 2006 was increased by 15 full time equivalent (FTE) positions (compared to the FY 2003 budget). The additional regional FTEs should alleviate resource challenges once individuals occupying these positions become fully qualified inspectors.

Also, in an SRM dated February 14, 2003 (M030210), the Commission asked the staff to include in the next update of resident inspector demographic data (included in the annual ROP self-assessment) information on the number and duration of gaps in resident inspector assignments resulting from personnel changes and the staff actions taken to provide interim support. The staff has developed a draft metric and is currently gathering data to establish a baseline for monitoring resident inspector staffing/gaps as part of the staff's review of Davis-Besse lessons learned recommendations. The staff will report to the Commission on progress in this area in the next annual ROP self-assessment paper.

(5) *Review the current baseline inspection procedures for potential consolidation*

The Efficiency Focus Group recommended that the staff should review the baseline inspection procedures to identify areas where consolidation is possible. The staff has initially undertaken this suggestion for four groups of baseline inspection procedures, and is currently implementing the consolidated procedures in a pilot inspection program at selected sites in each region. The staff will provide the results at the conclusion of the pilot inspections. If the anticipated resource savings are realized, and assuming that effectiveness is maintained, the staff may extend the consolidation to other baseline procedures.

- (6) *Establish guidance to ensure that generic requirements or guidance are not inappropriately affected when making unrelated changes to processes*

The DBLLTF (reference item 3.1.2.3) recommended that the NRC should establish process guidance to ensure that generic requirements or guidance are not inappropriately affected when making unrelated changes to processes, guidance, etc. (e.g., deleting inspection procedures that were developed in response to a generic issue). As a result, the staff revised IMC 0040, "Preparing, Revising, and Issuing Documents for the NRC Inspection Manual," to require that the staff must perform a review to ensure that revisions of inspection procedures do not inadvertently delete inspection requirements that were added as a result of an event or occurrence that has continuing generic applicability. Accordingly, this item is closed.

- (7) *Develop inspection guidance pertaining to reactor coolant system unidentified leakage*

The DBLLTF (reference item 3.2.1.2) recommended that the NRC should develop inspection guidance pertaining to unidentified RCS leakage, and should include action levels to trigger increasing levels of NRC interaction with licensees in order to assess the licensees' actions in response to increasing levels of unidentified RCS leakage. In addition, the action level criteria should identify adverse trends in unidentified RCS leakage that could indicate degradation of the reactor coolant pressure boundary (RCPB). The staff is presently evaluating the inspection guidance pertaining to unidentified RCS leakage, and expects to complete this review by December 2004.

- (8) *Ensure that licensee procedures provide adequate guidance for the identification of reactor coolant pressure boundary leakage*

The DBLLTF (reference item 3.2.1.3) recommended that the NRC should inspect plant alarm response procedure requirements for leakage monitoring systems to assess whether they provide adequate guidance for the identification of RCPB leakage. The staff plans to revise the existing guidance in IMC 2515, Appendix D, "Plant Status," to ensure that the NRC verifies that the licensees adequately monitor the RCS leakage detection system instrumentation, in accordance with the plant alarm response procedure requirements.

- (9) *Develop inspection guidance to ensure the adequacy of PWR plant boric acid corrosion control programs*

The DBLLTF (reference item 3.2.2.1) recommended that the NRC should inspect the adequacy of boric acid corrosion control programs for pressurized-water reactors (PWRs), including their implementation effectiveness, to determine their acceptability for the identification of boric acid leakage, and their acceptability to ensure that adequate evaluations are performed for identified boric acid leaks. The DBLLTF further recommended that the NRC should develop inspection guidance for the periodic inspection of boric acid corrosion control programs for PWRs (reference item 3.3.2.1), and should develop inspection guidance or revise existing guidance, such as Inspection Procedure (IP) 71111.08, to ensure that the staff periodically reviews vessel head penetration (VHP) nozzles and the reactor pressure vessel (RPV) head area during licensees' inservice inspection (ISI) activities (reference item 3.3.4.3).

To address the DBLLTF concerns, the staff developed temporary instruction (TI) 2515/150, "Reactor Pressure Vessel Head and Vessel Head Penetration Nozzles," which the regions are currently implementing. The staff is also revising baseline inspection procedure IP 71111.08, "Inservice Inspections," to add inspection requirements and guidance for use in reviewing the effectiveness of a licensee's implementation of the boric acid corrosion program on a periodic basis. In addition, the staff will add requirements and guidance for use in inspecting the reactor vessel upper head penetrations/nozzles for potential degradation. The staff will also revise the resource estimate for this procedure to include this additional inspection effort. The staff expects to complete this task in 2004.

- (10) *Develop inspection guidance for the verification of the implementation of owners groups' commitments*

The DBLLTF (reference item 3.2.3.2) recommended that the NRC should develop general inspection guidance for periodic verification of the implementation of the commitments that the owners groups make on behalf of their members. The staff is currently evaluating this recommendation, and expects to resolve this issue by December 2004.

- (11) *Develop inspection guidance to assess outage work scope and scheduler influences*

The DBLLTF (reference item 3.2.5.1) recommended that the NRC should develop inspection guidance for use in assessing scheduler influences on outage work scope. As a result, the staff revised IP 71111.15, "Operability Evaluations," to include deferred modifications in the inspection sampling list in order to assess potential scheduler influences on outage work scope and considers this issue closed.

- (12) *Develop inspection guidance to assess longstanding unresolved problems*

The DBLLTF (reference item 3.2.5.2) recommended that the NRC should revise its inspection guidance for use in assessing (1) the safety implications of longstanding, unresolved problems; (2) corrective actions that are phased in over several years or refueling outages; and (3) deferred modifications. As a result, the staff revised IP 71152, "Problem Identification and Resolution," to incorporate recommendations made by the PI&R Focus Group to address several items from the DBLLTF. The changes include enhanced requirements regarding the routine PI&R reviews conducted by resident inspectors, biennial reviews of longstanding issues, and biennial reviews of operating experience issues. Therefore, this item is closed.

- (13) *Develop inspection guidance to assess repetitive or multiple technical specification action statement entries*

The DBLLTF (reference item 3.3.1.2) recommended that the NRC should develop inspection guidance for use in assessing repetitive or multiple TS action statement entries, as well as the radiation dose implications associated with repetitive tasks. As a result, the staff revised IP 71152, and is currently revising Appendix D to IMC 2515, to provide inspection guidance for use in assessing longstanding issues and repetitive or multiple TS action statement entries, as well as the radiation dose implications associated with repetitive tasks.

- (14) *Revise the overall PI&R inspection approach, such that issues similar to those experienced at DBNPS are reviewed and assessed*

The DBLLTF (reference item 3.3.2.2) recommended that the NRC should revise the overall PI&R inspection approach, such that issues similar to those experienced at the Davis-Besse Nuclear Power Station (DBNPS) are reviewed and assessed. The DBLLTF further recommended that the NRC should enhance the guidance for these inspections to prescribe the format of information that is screened when determining which specific problems will be reviewed. As a result, the staff revised IP 71152 to incorporate recommendations made by the PI&R Focus Group to address this item and several other DBLLTF recommendations, and considers this item closed.

- (15) *Provide enhanced guidance to pursue issues and problems identified during plant status reviews*

The DBLLTF (reference item 3.3.2.3) recommended that the NRC should provide enhanced inspection guidance for use in pursuing issues and problems identified during plant status reviews. The staff revised IP 71152 to incorporate this item and several other DBLLTF recommendations, and considers this item closed.

- (16) *Improve inspection guidance to provide for the longer-term followup of issues that have not progressed to a finding*

The DBLLTF (reference item 3.3.2.4) recommended that the NRC should revise its inspection guidance to provide for the longer-term followup of issues that have not progressed to a finding. The staff revised IP 71152 to incorporate recommendations made by the PI&R Focus Group to address this item and several other DBLLTF recommendations, and considers this item closed.

- (17) *Evaluate inspection guidance pertaining to refueling outage activities*

The DBLLTF (reference item 3.3.4.1) recommended that the NRC should review its inspection guidance pertaining to refueling outage activities to determine whether the level of inspection effort and guidance are sufficient, given the typically high level of licensee activity during relatively short outage periods. Accordingly, the staff is currently revising IP 71111.20, "Refueling and Outage Activities," to clarify the guidance for refueling outage activities to address the DBLLTF concerns.

- (18) *Strengthen inspection guidance for reviewing operating experience*

The DBLLTF (reference item 3.3.4.2) recommended that the NRC should strengthen its inspection guidance pertaining to the periodic review of operating experience. The DBLLTF further stated that the level of effort should be changed, as appropriate, to be commensurate with the revised guidance. As a result, the staff is currently reviewing the existing inspection procedures to determine whether a new procedure should be developed or existing procedures revised to provide guidance for the periodic review of operating experience.

- (19) *Provide more structured and focused inspections to assess licensee employee concerns programs and safety-conscious work environment*

The DBLLTF (reference item 3.3.4.5) recommended that the NRC should review the range of NRC baseline inspections and plant assessment processes, as well as other NRC programs, to determine whether sufficient programs and processes are in place to identify and appropriately disposition the types of problems experienced at DBNPS. Additionally, the DBLLTF recommended that the NRC should provide more structured and focused inspections to assess licensee employee concerns programs and safety-conscious work environment. This issue is currently under review.

- (20) *Reassess the basis for the cancellation of the inspection procedures that were deleted by Change Notice 01-017*

The DBLLTF (reference item 3.3.4.7) recommended that the NRC should reassess the basis for the cancellation of the inspection procedures that were deleted by Change Notice (CN) 01-017 to determine whether any of the deleted inspection procedures have continuing applicability and to reactivate such procedures, as appropriate. Accordingly, the staff is currently reassessing the basis for the cancellation of the inspection procedures that were deleted by CN 01-017. Preliminary evaluation indicates that procedures deleted from IMC 2515, "Light-Water Reactor Inspection Program — Operations Phase," did not negatively impact the ROP.

- (21) *Establish program expectations and metrics to satisfy minimum resident inspector staffing levels*

The DBLLTF (reference item 3.3.5.3) recommended that the NRC should establish expectations and metrics for resident inspector staffing, including the establishment of program expectations to satisfy minimum staffing levels. The staff has begun collecting resident inspector staffing data and will establish a baseline for minimum resident inspector staffing. The staff will trend this data and report the results in the annual ROP self assessment paper for CY 2004.

- (22) *Revise guidance to include a description of licensee corrective actions in inspection reports, as applicable*

The SDP Task Group (reference item 3.10.3.1) recommended that the staff should revise IMC 0612 to require that the inspection report summary of findings must include a brief description of corrective actions taken by the licensee to restore compliance with NRC regulations, where applicable. OIG recommendation #10 from OIG-02-A-15, "Review of NRC's Significance Determination Process," dated August 21, 2002, provided a similar recommendation. As a result, the staff revised IMC 0612 to require licensee corrective actions to be included in the plant performance summaries (i.e., summary of findings). Accordingly, this item is closed.

- (23) *Establish metrics to capture the entire process of identifying and assessing findings*

OIG recommendation #5 from OIG-02-A-15, "Review of NRC's Significance Determination Process," dated August 21, 2002, stated that the staff should establish metrics to capture the entire process of identifying and assessing findings. Several metrics already exist in IMC 0307, "Reactor Oversight Process Self-Assessment

Program,” to ensure the accuracy and completeness of inspection findings and their significance. In addition, the staff revised IMC 0307 to state that for findings greater than green, the staff will evaluate any delays or inefficiencies in identifying performance deficiencies and make recommendations to improve inspection effectiveness. As a result, this item is closed.

Significance Determination Process (SDP)

- (1) *Validate and issue plant-specific Reactor Safety SDP notebooks, including the Phase 2 worksheets*

The staff accelerated the benchmarking and issuing of the notebooks and completed the task in September 2003. The staff has since issued the revised notebooks and plans to complete a standardization process for the notebooks by the end of 2004. This process will standardize the quality of the benchmarked notebooks, resulting in overall improvement. In addition, as a result of the SDP Task Group recommendation, the staff plans to develop pre-solved SDP tables for use by the inspectors.

- (2) *Continue efforts to obtain improved and standardized risk analysis tools for the risk analysts*

As discussed above, the staff continues to improve the Phase 2 notebooks through the benchmarking effort to achieve increased levels of reliability and predictability with results that are understood by all stakeholders. Additionally, the NRC's Office of Nuclear Regulatory Research (RES) has completed the development of all Level 1, Revision 3i, Standardized Plant Analysis Risk (SPAR) models and has coordinated with NRR to schedule onsite quality assurance (QA) reviews during benchmarking visits to develop a more reliable Phase 3 SDP analysis tool for at-power internal events. To date, 60 full power operation SPAR models have received onsite QA reviews. The remaining 12 onsite reviews are scheduled for completion during FY 2004.

- (3) *Replace the interim Physical Protection SDP with a revised SDP*

Enhancements to the Physical Protection SDP were deferred while the NRC continued to focus on a number of near- and long-term security issues identified since the terrorist attacks on September 11, 2001. SECY-03-0062 noted that the staff was evaluating the adequacy of the guidance for the Interim Physical Protection SDP to refine and enhance the SDP in light of the current threat environment, potential changes in the design-basis threat, and other considerations. As a result, NSIR developed a new SDP, which is currently under review by internal stakeholders.

- (4) *Continue to devise methodologies that will allow inspectors to develop realistic fire scenarios and improve the accuracy of site-specific data, such as fire ignition frequency, used in the assessment of risk associated with fire protection findings.*

The Fire Protection SDP is undergoing a major revision. The technical effort is led by a contractor from Sandia National Laboratories, with significant contributions from the NRC staff, including NRR, RES, and regional specialists. Significant testing of the process is ongoing. The SDP is scheduled for issuance at the end of May 2004. Extensive training of all users is planned for April/May 2004.

(5) *Develop a process to evaluate the risk significance of plant shutdown issues*

The staff's ongoing effort to create a Phase 2 methodology tool will allow the assessment of inspection findings identified during plant shutdown to be done by regional senior reactor analysts (SRAs). This will replace the existing process that must be completed by NRC headquarters-based risk analysts. The staff has also completed the new Shutdown Risk SDP, which is designed for use by the SRAs. Training of the SRAs in the implementation of the SDP is scheduled for April 2004.

(6) *Improve the capability to assess the impact of external events on operating reactor safety-related issues*

Incorporation of risk attributes to external initiators remains a significant challenge, and the NRC has assembled a task group to address the problem. The staff is tracking this effort in the SDP Improvement Plan.

(7) *SDP results should be finalized in a timely fashion and posted to the ROP Web site*

As a result of the briefing on lessons learned from the Davis-Besse reactor vessel head degradation, the Commission issued an SRM (M030204), dated February 12, 2003, that asked the staff to finalize the SDP results in a timely fashion and post them to the ROP Web site. Consistent with that request, the staff finalized the resultant Davis-Besse inspection findings through the appropriate SDPs and posted the results to the ROP Web site in the first quarter of 2003. More generally, the staff continues to improve the timeliness of finalizing SDP results and accurately posting the results to the ROP Web site. This item is considered closed.

(8) *Evaluate and address the recommendations made by the Office of the Inspector General and the SDP Task Group*

The OIG completed an audit of the SDP as documented in OIG-02-A-15, "Review of NRC's Significance Determination Process," dated August 21, 2002. That audit yielded 11 specific recommendations, which the staff incorporated into the SDP Improvement Plan for tracking purposes. The staff has resolved all recommendations as to expectation, tracking, and completion dates, and has fully completed five of the recommendations.

In addition, the NRC formed the SDP Task Group to complete an independent and objective review of the SDP. Of the Task Group's 30 specific recommendations, the staff has fully addressed 21, and has incorporated the remainder in the SDP Improvement Plan for subsequent evaluation based on the established schedule. This general issue is considered closed as the specific recommendations are tracked separately.

(9) *Clarify the ALARA SDP regarding "issues that could or do compromise the licensee's ability to assess dose"*

SECY-03-0062 noted that the staff will continue efforts to clarify the "As Low As Reasonably Achievable" (ALARA) SDP regarding the concept of "issues that could or do compromise the licensee's ability to assess dose." The staff incorporated additional guidance into Appendix C to IMC 0609, "Occupational Radiation Protection SDP," which clarifies the dose assessment expectations, and considers this issue closed.

(10) *Review and evaluate the adequacy of the guidance for the Emergency Preparedness SDP*

SECY-03-0062 noted that the staff will continue to review and evaluate the adequacy of the guidance for the Emergency Preparedness (EP) SDP and (1) incorporate lessons learned and input from inspectors and industry stakeholders; (2) review significance levels and adjust, as appropriate, to align with significance of findings in other cornerstones; and (3) provide a path for white significance for the planning standards of Title 10, Section 50.47(b), of the *Code of Federal Regulations* (10 CFR 50.47(b)). Toward that end, the staff revised Appendix B to IMC 0609, which was issued on March 6, 2003. As part of the revision process, the staff incorporated lessons learned and input from stakeholders, resulting in a review and adjustment of the significance levels. In addition, the staff revised the EP SDP such that the risk-significant planning standards in 10 CFR 50.47(b)(4), (5), (9) and (10) included a degraded function section leading to a finding of white significance. Training on the revision was provided to all EP regional inspectors prior to the issuance of the revised SDP, and customized training on the use of the document was provided to resident inspectors. Therefore, this item is closed.

Assessment Program

(1) *Evaluate increasing the threshold for a degraded cornerstone from two to three white performance indicators or inspection findings*

In an SRM dated June 10, 2003 (M030515), the Commission noted that the staff should evaluate stakeholder comments at the briefing on May 15, 2003, as they related to increasing the threshold for a degraded cornerstone from two to three white PIs or inspection findings. On August 29, 2003, the staff issued a memorandum to the Commission to address these issues.

As documented in the Commission memorandum, the staff does not support changing the existing threshold from two white inputs to three white inputs for the following reasons:

- A detailed staff review of plants that have entered the degraded cornerstone column or multiple/repetitive degraded cornerstone column of the Action Matrix since the inception of the ROP revealed that the respective columns of the Action Matrix were the appropriate action level for all 11 plants analyzed.
- The SDP Task Group concluded that the current threshold of two white inputs in the same cornerstone as the criterion for a degraded cornerstone was reasonable, and there was no information to suggest that it was inappropriate.
- The staff is currently reviewing the green/white thresholds for the individual SDPs and PIs in response to a variety of stakeholder concerns, and these threshold questions should be fully resolved before any changes are made to the entry conditions for the Action Matrix.

Accordingly, this issue is considered closed.

- (2) *Inform the Commission of the actions planned to respond to the issues raised at the May 15, 2003 Commission briefing*

In an SRM dated June 10, 2003 (M030515), the Commission noted that the staff should inform the Commission of the actions planned to respond to the issues raised by Mr. Riccio in his statement document dated May 15, 2003. The Commission further noted that the staff should follow the established process for evaluating stakeholder comments to evaluate the ROP changes suggested at the meeting. On August 29, 2003, the staff issued a memorandum to the Commission to address these issues, noting that the staff actively solicits and continuously evaluates feedback from both internal and external stakeholders throughout the year and incorporates appropriate changes. Feedback mechanisms include the NRC's internal feedback process, monthly ROP public meetings with the industry, and internal and external surveys. Accordingly, the comments by Mr. McGaha and Mr. Riccio at the Commission meeting on May 15, 2003, have been included in the feedback disposition process. The staff has also included the more significant comments in this Commission paper, including the need to improve PI and SDP effectiveness and to evaluate increasing the threshold for a degraded cornerstone in the ROP Action Matrix from two to three white inputs. This issue is also considered closed.

- (3) *Consider providing flexibility in conducting annual ROP public meetings*

In an SRM dated June 10, 2003 (M030515), the Commission noted that it supports flexibility in conducting effective ROP public meetings, including giving consideration to measures such as providing NRC personnel who are knowledgeable in areas of interest on the national level and allowing the resident inspectors to conduct ROP meetings held at the plant sites, as appropriate. In addition, the Efficiency Focus Group recommended that the staff should explore less resource-intensive alternatives to the annual performance assessment meeting for plants in the licensee response column of the Action Matrix.

On January 29, 2004, the staff revised IMC 0305, "Operating Reactor Assessment Program," to give the regional offices increased flexibility in scheduling annual public meetings. Previous guidance stated that the annual public meetings should be scheduled within 16 weeks of the end of the assessment period. This requirement was independent of the Action Matrix column that the plant was in. The staff has reassessed this requirement and has determined that flexibility in scheduling some of the public meetings is warranted. Therefore, plants that have been in the licensee response or regulatory response columns of the Action Matrix for the entire assessment period may schedule their annual public meeting up to 6 months after issuing the annual assessment letter. Accordingly, this issue is closed.

- (4) *Determine whether a graded approach for removing inspection findings from consideration in the Action Matrix is appropriate*

The industry has recommended a graded approach for removing inspection findings from consideration in the assessment program. This recommendation involves applying a graded approach based on safety significance, such that white findings would remain in the assessment program for two quarters, yellow findings for three quarters, and red

findings for four quarters. This approach would only apply to those findings where corrective actions were deemed appropriate.

The range of actions across the Action Matrix are graded such that increased regulatory actions occur with the accumulation of “greater than green” assessment inputs. One concern with the industry’s recommendation is that inspection findings would not remain in the assessment program long enough to accumulate in the Action Matrix and allow increased NRC action with degrading performance, as envisioned during the development of the ROP. The staff does not plan to expend dedicated resources on further evaluation of the industry’s recommendation and considers this issue closed. However, the staff will continue to review the Action Matrix annually, as part of the self-assessment and the Agency Action Review Meeting (AARM), to assess the appropriateness of the criteria for determining a licensee’s placement in the Action Matrix.

- (5) *Develop guidance to address the impacts of IMC 0350 implementation on the regional organizational alignment and resource allocation*

The DBLLTF (reference item 3.3.5.4) recommended that the NRC should develop guidance to address the impacts of implementing IMC 0350, “Oversight of Operating Reactor Facilities in a Shutdown Condition with Performance Problems,” as they relate to regional organizational alignment and resource allocation. As a result, the staff made significant changes to the IMC 0350 guidance to provide a comprehensive correlation between aspects of the ROP and the IMC 0350 plants, and to incorporate other lessons learned and clarifications. In addition, the staff revised the inspection budget estimates to include resources for overseeing the IMC 0350 plants. Therefore, this item is closed.

- (6) *Revise the oversight process to permit implementation of IMC 0350 without first having established that a significant performance problem exists.*

The DBLLTF (reference item 3.3.5.4) recommended that the NRC should revise IMC 0350 to permit implementation of IMC 0350 without first having established that a significant performance problem exists, as defined by the ROP. Accordingly, the staff revised IMC 0350 to include an entry condition based on a significant operational event, as defined in Management Directive (MD) 8.3, “NRC Incident Investigation Program,” without first having established that a significant performance problem exists. This item is also closed.

- (7) *Provide a more predictable standard/criterion for determining what constitutes a substantive cross-cutting issue*

The SDP Task Group (reference item 3.8.3.2) recommended that the program office should provide a more predictable standard or criterion for determining what constitutes a substantive cross-cutting issue to ensure consistency across the regions.

The program office participates in each of the plant-specific mid-cycle and end-of-cycle review meetings for each region. In preparation for these meetings, the regional office develops a detailed plant performance summary, which includes a discussion of inspection findings with cross-cutting elements. The regions and the program office compare these findings with cross-cutting elements against the criteria for a substantive cross-cutting issue as discussed in IMC 0305. Additionally, plants that are determined

to have substantive cross-cutting issues are discussed at the subsequent end-of-cycle (EOC) summary meeting. The Director of NRR presides over the EOC summary meeting while each regional administrator leads the discussion for his or her regional office. This meeting provides an additional level of awareness concerning those plants that will have a substantive cross-cutting issue in their assessment letter. The program office has revised the guidance regarding substantive cross-cutting issues in each revision of IMC 0305 in order to incorporate lessons learned from implementation during the previous mid-cycle or end-of-cycle review meeting. The staff plans to continue monitoring regional implementation of this guidance and making adjustments, as necessary.

- (8) *Revise the ROP guidance to include consideration of a response to the identification of a substantive cross-cutting issue and a description of how the NRC will close a substantive cross-cutting issue*

The SDP Task Group (reference item 3.8.3.3) recommended that the program office should revise the ROP guidance to include consideration of a licensee response to the identification of a substantive cross-cutting issue (only when there is at least one white PI or finding). The Task Group noted that the response could include a redirection of inspection resources, management meetings, and/or a docketed licensee response describing actions planned or taken to address the cross-cutting issue. The Task Group further noted that this guidance should also include a description of how the NRC will close a substantive cross-cutting issue.

The latest revision to IMC 0305, dated January 29, 2004, incorporates this SDP Task Group recommendation. Specifically, the revision to IMC 0305 provides requirements for plants that have previously had a substantive cross-cutting issue in their mid-cycle or annual assessment letter. The regional office will evaluate the current 12 months of inspection findings with cross-cutting elements against the original criteria. The next mid-cycle or annual assessment letter will either state that the issue has been resolved or summarize the agency's assessment against specific criteria, as well as summarizing the licensee's progress in addressing the issue.

Additionally, the regional office may consider several options for those plants where a substantive cross-cutting issue has been raised in at least two consecutive assessment letters. These options include requesting (1) that the licensee provide a response at the next annual public meeting, (2) that the licensee provide a written response to the substantive cross-cutting issues raised in the assessment letters, or (3) a separate meeting be held with the licensee. This item is considered closed.

- (9) *Provide more guidance as to the type of information that should be included in a region's request to deviate from the Action Matrix*

The SDP Task Group (reference item 3.8.3.4) recommended that the staff should supplement the guidance in IMC 0305, Section 06.06.f, with additional guidance that lists the types of information that should be included in a region's request to deviate from the Action Matrix (e.g., synopsis of the findings affecting the licensee's performance, the actions (column) stipulated by the Action Matrix, the Region's rationale or considerations for taking action different from that stipulated in the Action Matrix).

The latest revision to IMC 0305, dated January 29, 2004, incorporates this SDP Task Group recommendation. Specifically, the revision to IMC 0305 requires that letters requesting Action Matrix deviations must include a synopsis of the licensee performance deficiencies, the required NRC actions (per the Action Matrix) for these inputs, the proposed alternative actions, and the region's rationale for requesting the deviation. Accordingly, this item is closed.

- (10) *Monitor the effectiveness of the guidance for removing plants from the multiple/repetitive degraded cornerstone column of the Action Matrix*

SECY-03-0062 noted that the revision of IMC 0305, dated February 19, 2003, added guidance for removing plants from the multiple/repetitive degraded cornerstone column of the Action Matrix, and that the staff should monitor the effectiveness of this recent change and make adjustments to the guidance, as necessary. The staff developed this guidance as a result of lessons learned from Indian Point Station, Unit 2, exiting the multiple/repetitive degraded cornerstone column of the Action Matrix. Since the implementation of this guidance, no plants have utilized this revised guidance. However, Cooper Nuclear Station and Point Beach Nuclear Plant are currently in the multiple/repetitive degraded cornerstone column of the Action Matrix, and the staff will incorporate lessons learned from those plants into the next revision of IMC 0305.

- (11) *Review the policy for issuing press releases for ROP findings*

The SDP Task Force (reference items 3.9.3.5 and 3.9.3.6) recommended that OPA should modify its policy for issuing press releases concerning ROP findings to link the issuance of a press release to findings that result in a degraded cornerstone. Additionally, the Task Force recommended that the staff should modify IMC 0305 to reference the OPA policy for issuing press releases for ROP inspection findings.

OPA has recently revised its guidance, such that a press release is not issued for a single white inspection finding or PI, unless there is a meeting on the finding or there is significant media interest in the plant. However, a press release is issued for a second white finding or PI, regardless of whether it results in a degraded cornerstone. OPA does not anticipate changing this guidance in the near future. Additionally, IMC 0305 does not, and should not, dictate OPA policy on issuing press releases for ROP inspection findings. This policy decision should remain with the originating office, and this item is closed.

- (12) *Review the action matrix thresholds to determine if changes are needed to ensure that the Action Matrix categorization adequately reflects plant performance*

In an SRM dated June 10, 2003 (M030515), the Commission noted that the staff should review the Action Matrix thresholds to determine whether changes are needed to ensure that the Action Matrix categorization adequately reflects the safety significance of PIs and inspection findings. In addition, the SDP Task Group (reference item 3.11.3.3.1) previously recommended that NRR should review the Action Matrix on an annual basis to assess its impact on stakeholders and the appropriateness of the criteria for determining the combination of inputs that dictate a licensee's placement in the Action Matrix. The results of this assessment should be provided in a report to management with recommendations for adjustments, as necessary.

The staff provides the Commission with an annual ROP self-assessment, which includes the ROP assessment program. The self-assessment periodically reviews the effectiveness of the ROP assessment program via a variety of mediums including the metrics program and internal and external feedback mechanisms. Additionally, senior NRC managers review the ROP self-assessment at the Agency Action Review Meeting (AARM).

The staff will continue these efforts and report the results to the Commission. Additionally, as discussed in issue (1) concerning the assessment program (above), the staff recently reviewed the Action Matrix thresholds for entering the degraded cornerstone column of the Action Matrix and found that the current threshold is appropriate. Therefore, this issue is closed.

(13) *Identify alternative mechanisms to independently assess plant performance*

The DBLLTF (reference item 3.3.3.1) recommended that the staff should identify alternative mechanisms to independently assess plant performance as a means of self-assessing NRC processes. Once identified, the feasibility of such mechanisms should be determined. The staff is still developing the scope of this project, and will report the results of this effort in the next annual self-assessment paper to the Commission.

(14) *Perform a sample review of the plant assessments conducted under the interim PPR assessment process*

The DBLLTF (reference item 3.3.3.2) recommended that the staff should perform a sample review of the plant assessments conducted under the interim plant performance review (PPR) assessment process (1998–2000) to determine whether any plant safety issues have not been adequately assessed. The staff is still developing the scope of this project, and will report the status of this effort in the next annual self-assessment paper to the Commission.

Communication Activities and Other Program Issues

(1) *Provide recommendations for resolving, in a transparent manner, apparent conflicts and discrepancies between aspects of the ROP that are risk-informed and those that are performance-based*

In an SRM dated December 20, 2001, the Commission requested the staff to provide recommendations, with ACRS input, for resolving, in a transparent manner, apparent conflicts and discrepancies between aspects of the revised reactor oversight process that are risk-informed (e.g., SDP) and those that are performance-based (e.g., PIs). The staff has met and corresponded with the ACRS on several occasions to address their specific concerns regarding the ROP.

The staff last briefed the ACRS regarding their concerns with the ROP on March 6, 2003. Following that briefing, the ACRS forwarded a letter to the Commission on March 13, 2003, concluding that disagreements still exist between the staff and the ACRS. The staff responded to that letter on April 29, 2003, agreeing that the ACRS concerns warrant further consideration and will continue to be evaluated as part of the ongoing self-assessment process (reference ADAMS Accession No. ML030980658).

The staff noted that the specific issues presented in the ACRS letter of March 13, 2003, will serve as the basis for further discussion with the Committee and potential revisions to the ROP. This paper discusses several of the ACRS concerns. At this time, the staff has not planned any additional meetings or correspondence with the ACRS, and considers this general issue closed. However, some of the specific concerns remain open and are being tracked separately.

- (2) *Conduct an independent survey by a qualified contractor of the impact of the NRC's activities on reactor licensees' operations*

In an SRM dated January 30, 2002, the Commission approved the proposal to have a qualified contractor conduct an independent survey of the impact of the NRC's activities on reactor licensees' operations. The survey was initially postponed to redirect applicable staff to support NSIR. The survey is currently receiving a final review by the Office of Management and Budget and will be issued shortly. The staff plans to report the results to the Commission following completion of the survey.

- (3) *Evaluate the need and feasibility for a public workshop*

SECY-03-0062 noted that the staff would evaluate the need for and feasibility of a public workshop in CY 2003 to address several common concerns noted by both internal and external stakeholders. The staff considered sponsoring a separate ROP-specific workshop in 2003, but elected not to do so based on competing priorities and insufficient resources. However, the staff did include a specific question in the external survey in November 2003 to ascertain whether an ROP workshop would be beneficial. While most respondents did not directly address this question, those who did noted that there would be some potential interest and benefit. The staff recently sponsored a specific session at the Regulatory Information Conference in 2004 to discuss ongoing ROP issues as it has the past several years, will continue to conduct monthly ROP public meetings, and will evaluate the need and feasibility for a separate ROP-specific workshop in CY 2005.

- (4) *Highlight the changes made to the ROP as a result of the Davis-Besse Lessons Learned Task Force recommendations*

SECY-03-0062 noted that the significant changes made to the ROP as a result of the DBLLTF recommendations would be highlighted in the next annual self-assessment. As a result of the DBLLTF recommendations, the staff has made several changes to the ROP, as discussed throughout this paper. The relevant program area discussions in Attachment 1 and the status of previous issues in this attachment provide additional details regarding specific DBLLTF recommendations. In addition, Attachment 5 to this paper includes a more general discussion concerning the status of the DBLLTF recommendations. Therefore, this general issue is considered closed as the specific recommendations are tracked separately within the relevant program areas.

- (5) *Conduct training to reinforce expectations regarding inspection insights gained from the Davis-Besse incident*

The DBLLTF (reference item 3.3.1.1) recommended that the NRC should provide training for NRC managers and staff to reinforce expectations related to (1) maintaining a questioning attitude in conducting inspection activities; (2) developing inspection

insights stemming from the event at DBNPS, as they relate to symptoms and indications of RCS leakage; (3) communicating expectations regarding the inspection followup of the types of problems that occurred at DBNPS; and (4) maintaining an awareness of surroundings while conducting inspections.

The staff developed and provided Web-based "read-and-sign" training for the regional staff to emphasize inspection insights gained from the Davis-Besse incident. Specifically, the staff implemented three read-and-sign training modules in 2003 to specifically address the DBLLTF recommendations. One module concerned the effects of boric acid corrosion, another was associated with the changes made to IP 71152, and the third dealt with the importance of maintaining a questioning attitude toward safety (using the Columbia Space Shuttle accident as a vehicle for reinforcing this message). As a result, this item is closed.

(6) *Provide ROP refresher training to managers and staff members*

The DBLLTF (reference item 3.3.4.6) recommended that the NRC should provide ROP refresher training to managers and staff members. During CY 2003, the Management Steering Group for IMC 1245, "Inspector Qualification Program for the Office of Nuclear Reactor Regulation Inspection Program," generated topics to be included in the ROP refresher training. The staff is currently developing the training and expects to complete that task by the end of CY 2004.

(7) *Conduct training to enhance inspectors' knowledge of boric acid corrosion and primary water stress-corrosion cracking*

The DBLLTF (reference item 3.3.5.1) recommended that the NRC should maintain its expertise in the subject areas by ensuring that inspector training includes (1) boric acid corrosion effects and control, and (2) primary water stress-corrosion cracking (PWSCC) of nickel-based alloy nozzles. In response, the staff developed and implemented training to familiarize the regional inspectors with the NRC's current understanding of and approach to monitoring boric acid corrosion and PWSCC. The Web-based training stressed that previous assumptions that RCS leakage onto a hot surface would boil off and not cause corrosion may not be correct. The NRC now recognizes that previous assumptions did not represent the total range of situations under which boric acid corrosion could occur, so the training was intended to emphasize that boric acid could be much more active than was assumed in the past. Therefore, this item is also closed.

(8) *Reinforce expectations regarding regional manager site visits*

The DBLLTF (reference item 3.3.5.2) recommended that the NRC should reinforce the expectations of IMC 0102, "Oversight and Objectivity of Inspectors and Examiners at Reactor Facilities," as they relate to regional managers' visits to reactor sites. At the Division Directors Counterpart meeting at NRC headquarters in July 2003, the agency provided training to the regional division directors regarding the expectations of IMC 0102. This training session included discussions among the division directors led by the IMC 1245 training coordinator. This item is therefore closed.

(9) *Analyze the CY 2002 internal survey written comments on the ROP*

During CY 2003, the staff initiated and completed an analysis of the individual written comments received in response to the CY 2002 internal ROP survey. On the basis of that analysis, the staff made 10 recommendations based on the repetitive themes and immediately implemented 7 of those recommendations, including not issuing inspection procedures without first providing appropriate training and adopting 10 expectations regarding the presentation of procedure content. The staff further initiated six feedback forms on four inspection manual chapters and inspection procedures, and subsequently closed four of those six feedback forms by the end of CY 2003. This item is considered closed.

(10) *Continue to maintain the accuracy of the information on the internal ROP Web site and make refinements to improve the site's effectiveness*

SECY-03-0062 noted that the staff had not adequately maintained the internal ROP Web page early in 2002 and that internal stakeholders had lost confidence in the site as a reliable source of ROP information. The staff updated the Web page in late 2002 and has since maintained the site as an effective and efficient communication tool. In addition, during CY 2003, the staff completely redesigned and reconstructed the internal ROP Web page to better meet the needs of internal stakeholders and provide maximum flexibility as a communication tool. The Web page now has an entirely different format, which allows the main page to act as a hub to the various types of information available. This item is considered closed; however, the staff plans to continue to develop new methods and enhance existing assets to further maximize the potential and effectiveness of the internal ROP Web page.

(11) *Provide a link from the findings summary Web pages to documents that support any changes from preliminary inspection report significance determinations*

OIG recommendation #7 from OIG-02-A-15, "Review of NRC's Significance Determination Process," dated August 21, 2002, stated that the staff should revise the ROP Web page to provide a link from the findings summary pages to documents that support any changes from preliminary inspection report significance determinations. IMC 0306, "Information Technology Support for the Reactor Oversight Process," now requires that all reports and letters must have a unique report number and be associated with any and all findings discussed within the report or letter. This requirement allows the Web page to display links to all reports or letters affecting each individual finding on the ROP Web page summary of findings. The staff is monitoring compliance with this new requirement.

(12) *Provide complete access to inspection report results from the Web site*

OIG recommendation #8 from OIG-02-A-15, "Review of NRC's Significance Determination Process," dated August 21, 2002, stated that the staff should expand the ROP Web page to provide complete access to inspection report results, rather than only those that identify operational deficiencies. The ROP Web pages include performance summary pages for each reactor plant. Those summary pages provide access to each inspection report issued since initial implementation of the ROP (April 2000) without regard to the significance of the documented inspection findings. The user has the

ability to access plant-specific inspection report details and assessment process results for each reactor plant. This item is considered closed.

(13) *Expand the Web site to display all significant finding colors in a cornerstone*

OIG recommendation #9 from OIG-02-A-15, "Review of NRC's Significance Determination Process," dated August 21, 2002, stated that the staff should expand the ROP Web page to display all significant finding colors in a cornerstone. A complete listing of plant performance information (i.e., inspection findings and PIs) is available to all stakeholders on the ROP Web pages. Site-specific performance deficiencies, sorted by the seven cornerstones of safety, are summarized for each plant. Stakeholders have access to plant inspection results, PI data, NRC assessment letters, and inspection report details. Users also have ready access to all findings in a cornerstone by hyperlinking to the next Web page, and the OIG's recommendation would not substantially improve the quality of the information available to users. The SDP Task Group agreed that the difficulty and costs of implementing this change appears to exceed its benefit. This item is closed, as the OIG agreed that the staff's approach met the intent of the recommendation.

(14) *Revise the Web site to fully describe licensee corrective action related to each finding*

OIG recommendation #10 from OIG-02-A-15, "Review of NRC's Significance Determination Process," dated August 21, 2002, stated that the staff should revise the ROP Web page to fully describe licensee corrective actions related to each finding. The staff acknowledged that information related to licensee actions to correct immediate safety concerns should be easily identified in the inspection finding summaries. To accommodate this recommendation, NRR has revised IMC 0612 to require that licensee actions to correct significant safety findings must be included in the inspection report summary of findings and the individual plant performance summaries available on the ROP Web page. Therefore, this item is closed.

(15) *Ensure the accuracy of the findings on the ROP Web page*

SECY-03-0062 noted that the staff had initiated and implemented a new internal process to further ensure the accuracy of the findings on the ROP Web page, which will be included in IMC 0306, "Information Technology Support for the Reactor Oversight Process." With the issuance of IMC 0306, the staff created a formal review and submission process to ensure the accuracy of the information posted on the ROP Web page. The process requires a review of assessment information by regional branch chiefs, and subsequent submission of assessment inputs on a quarterly basis or when inspection findings or PIs cross a threshold mid-quarter. Those inputs are then reviewed by the staff of the Inspection Program Branch (IIPB) in the NRR Division of Inspection Program Management to ensure the accuracy of available information and correctness within the ROP. After verifying all information and assessments internally, the staff posts the information to the NRC's external Web site. Since the implementation of this process, no errors have occurred in posting information to the ROP assessment Web pages. Therefore, this issue is closed.

(16) *Continue to make enhancements to the ROP feedback process*

SECY-03-0062 noted that the staff would continue to enhance the ROP feedback process based on ongoing concerns and plans to evaluate a reengineering of this process to improve its efficiency and effectiveness in addressing internal stakeholder feedback. SECY-03-0062 further noted that an interactive database was scheduled for development in FY 2003 to give internal stakeholders access to the feedback database to view open and closed feedback forms. The ROP feedback process continues to provide a useful means for staff to identify concerns or issues and to recommend improvements to ROP policies, procedures, or guidance. Feedback timeliness has improved significantly and, unlike previous years, regional staff appear to be satisfied with the feedback process response time based on a recent poll of regional feedback coordinators. The enhancements to the feedback process scheduled in 2003 were delayed and are expected to be made in 2004.

(17) *Develop an electronic support system for inspectors to help inspectors perform their jobs more efficiently*

SECY-03-0062 noted that the staff plans to develop an electronic support system to help inspectors perform their jobs more efficiently by providing a knowledge transfer tool in an inspector-centric, usable format. The Inspector Electronic Support System (IESS) is currently under development and will transfer knowledge to enhance the efficiency of inspection preparation. Some of the components of the electronic system are an inspector community bulletin board, industry lessons learned, operating experience tailored for inspection procedures, and sources of technical information. One of the first elements of the IESS to be implemented was the electronic inspector newsletter, which was issued bimonthly in 2003 and received extremely positive feedback from inspectors.

(18) *Determine the feasibility of using information technology tools to increase inspector productivity*

SECY-03-0062 noted that the staff was conducting cost and budget evaluations to determine the feasibility of using personal digital assistants (PDAs) and pen scanners to increase inspector productivity. Pilots conducted using the PDAs and pen scanners clearly demonstrated the usefulness of these tools for inspectors. The program office has recommended that regions utilize a "cafeteria style" approach in providing these tools to inspectors (i.e., give tools to inspectors who request them, rather than force fitting the tools to all inspectors). Regions are required to request funding through the budget process for information technology tools to support inspectors. NRR will continue to take the lead in developing pilots that may be of benefit to inspectors.

ROP Performance Metrics

The Reactor Oversight Process (ROP) performance metrics utilize objective measures and predetermined criteria to monitor the performance of the process as described in Inspection Manual Chapter (IMC) 0307, "Reactor Oversight Process Self-Assessment Program." The staff of the U.S. Nuclear Regulatory Commission (NRC) developed metrics to monitor each major element of the ROP, as well as metrics of a more general nature intended to gauge overall ROP performance. These metrics rely on information from various sources, including the reactor program system (RPS), the inspection program, periodic independent audits, stakeholder surveys, and public comment. The staff collects data on a quarterly basis, as applicable, and analyzes the data by comparison against preestablished criteria. In most cases, success is defined as a steady or improving trend.

The staff has also developed metrics to monitor resident inspector demographics and quality-of-life issues. Attachment 7 to this paper addresses the resident demographic metrics (PR-1 through PR-5); however, the staff did not directly address the specific quality-of-life metrics defined in IMC 0307 (PR-6 through PR-10) during this assessment cycle because of the inconsistency and unreliability of the raw data. The staff plans to streamline and automate the data collection process for these metrics in the next ROP cycle and will then begin directly assessing these metrics as part of the IMC 0307 process.

The NRC solicited comments regarding the fourth year of ROP implementation from external stakeholders in a *Federal Register* notice (FRN) published on November 5, 2003. Approximately half of the 18 responses were from the utilities, while 3 were from State agencies, 5 were from public interest groups, and one was from an anonymous NRC staff member. Consistent with the biennial frequency prescribed by IMC 0307, the staff did not conduct an internal survey during this ROP cycle, so the metrics that rely on the internal survey were not applicable for this analysis.

The majority of metrics met their established criteria. All metrics in the inspection and assessment areas met their criteria, but some metrics in the Performance Indicator (PI), Significance Determination Process (SDP), and overall ROP areas did not meet their success criteria. The staff's corrective actions to address these issues are discussed in the remainder of this attachment and in the applicable program area discussions in Attachment 1 to this paper.

In reviewing the data for this reporting period, the staff found that one of the seven PI metrics did not meet its established criteria because of the negative perception that the PI program may adversely impact plant safety (PI-4), as indicated by the number of comments related to examples of issues that could potentially affect licensee actions that impact plant safety. The staff continues to evaluate several PIs in an effort to improve their effectiveness and minimize potential actions that may adversely impact plant safety. The staff also recognizes that the frequently asked questions (FAQ) process has become inefficient and overly burdensome and, therefore, plans to address these concerns in CY 2004 as discussed in the PI program area discussion in Attachment 1.

Of the nine metrics counted for the SDP, two did not meet their established criteria. Specifically, one of these two unsuccessful metrics resulted from the negative perception that the SDP results do not translate to the same level of significance for all cornerstones (SDP-5). In addition, the metric measuring SDP timeliness (SDP-8) once again failed to meet staff expectations, although SDP timeliness has improved over the past year. On a positive note, the metric measuring the accuracy of results communicated to the public (SDP-9), which failed to meet its criteria for CY 2002, improved significantly in CY 2003 (zero inaccuracies) based on the staff's implementation of new procedures requiring multiple checks before posting findings to the NRC's external Web site.

The staff continues to pursue the SDP timeliness issue, as well as negative perceptions that the SDP results do not translate to the same level of significance for all cornerstones and perceptions that the staff is not proficient in using the SDP, and the staff expects to realize improvements as the process is refined. The staff continues to address these and other issues through the SDP Improvement Plan, as discussed in the SDP program area discussion in Attachment 1 to this paper.

Of the 18 overall metrics established for the ROP, 3 failed to meet the established criteria. Specifically, the three metrics that were not met gauge the public's perception of various aspects of the ROP using information gathered through an external survey of the public. These metrics include whether the public perceives the ROP to be risk-informed (O-3), whether the public perceives the NRC to be responsive to its inputs and comments (O-15), and whether the public perceives that the ROP results in unintended consequences (O-18).

Many stakeholders questioned whether the ROP is risk-informed because of the perception that portions of the ROP are not risk-informed and create a discontinuity in the program. The staff plans to continue developing the SDPs and aspects of the ROP that are not risk-informed, while maintaining a focus on program continuity and equality between the various cornerstones. Numerous stakeholders also felt that the NRC was not responsive to comments or, at the very least, did not provide adequate feedback on the public's comments. The staff continues to develop and enhance communication and feedback with the public, and will explore new avenues for collecting and responding to public comments. Finally, as in previous years, the ROP failed to meet the metric for unintended consequences. Many stakeholders continue to believe that the ROP has numerous unintended consequences, and the staff will continue to investigate and attempt to resolve those issues in the future.

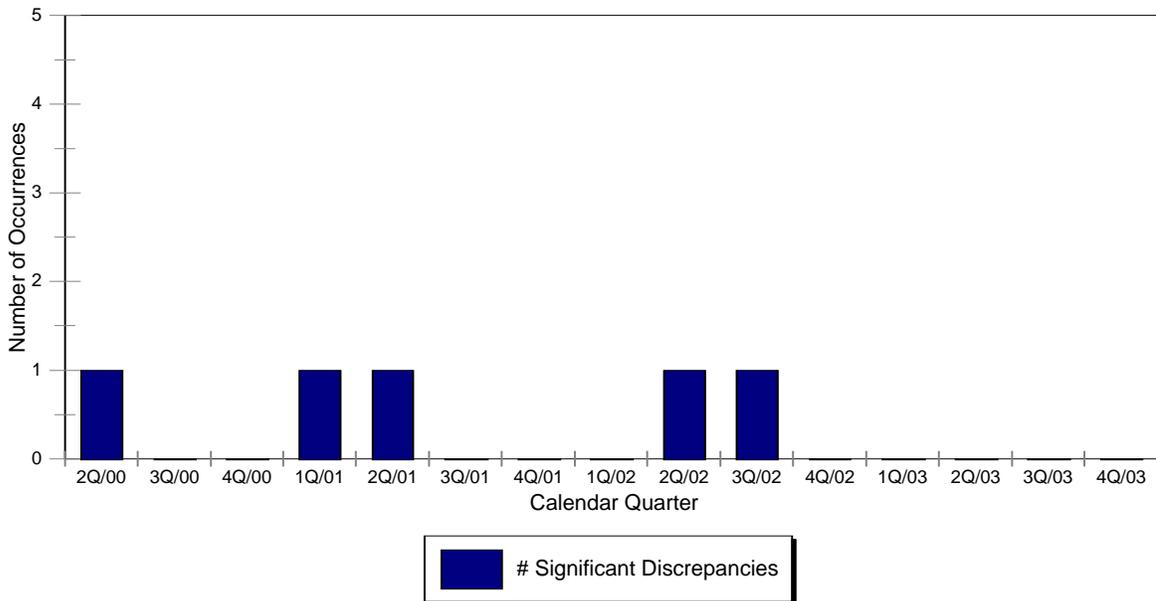
On a positive note, three overall metrics that failed to meet their criteria in CY 2002 improved in CY 2003. The staff concluded that the metric established to measure whether any programmatic voids exist in the ROP (O-9) was met based on no additional programmatic voids and significant staff progress in addressing the recommendations of the Davis-Besse Lessons Learned Task Force (DBLLTF). The staff also concluded that the metrics regarding whether the ROP maintains safety (O-7) and whether the ROP is effective, efficient, and realistic (O-11) were met this year based on an increasing positive perception (compared to last year) and a stable perception over time.

The following pages present the detailed metrics and their related analyses.

PI-1 Consistent Results Given Same Guidance

Definition: Independently verify PIs using Inspection Procedure (IP) 71151, "PI Verification." Count all PIs that cross a threshold because of discrepancies as noted in the resultant inspection report. Licensees are requested, per Nuclear Energy Institute (NEI) 99-02, to report changes to PI colors as soon as practical upon discovery via a "mid-quarter" report and to annotate in the comments field an explanation for the change.

Criteria: Use the first year of data as a benchmark for future comparison and to establish the acceptable range of variability.



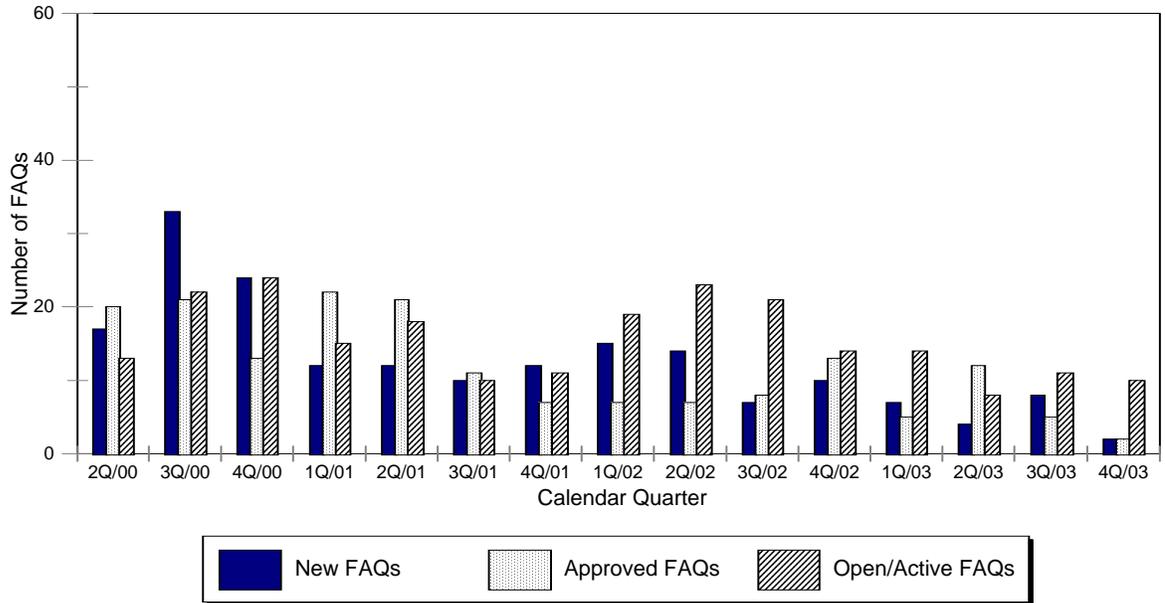
Comments: The graph represents the number of significant deficiencies reported for each quarter. Significant discrepancies are issues identified by the NRC during a PI verification inspection that caused the PI to cross a threshold.

Analysis: The metric criterion was met because no significant deficiencies were reported during this assessment period.

PI-2 Questions Regarding Interpretation of PI Guidance

Definition: Quarterly, count the number of frequently asked questions (FAQs).

Criteria: Expect low numbers (but not as low as metric PI-1), with a stable or decreasing trend.



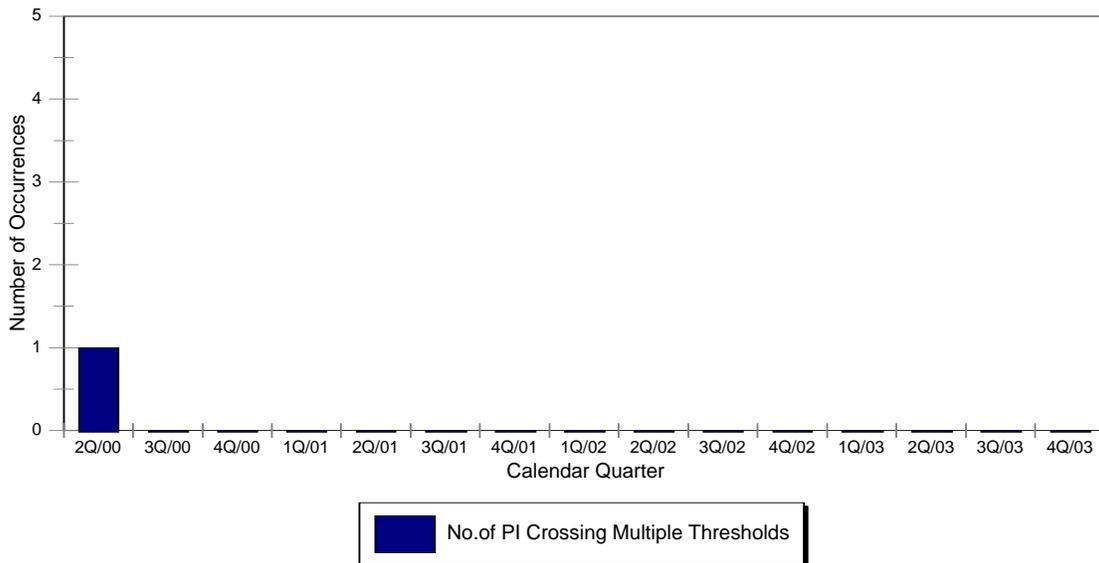
Comments: Interpretation questions regarding the PI guidance in NEI 99-02 took an upward trend during the initial stages of the ROP. This upward trend was anticipated; however, as NRC inspectors and licensees became more familiar with the guidance, and as additional guidance was provided to clarify NEI 99-02, a lower and generally stable number of questions required evaluation. For this assessment period, the number of interpretation questions has been generally low and stable. However, several of the FAQs continued to remain open for a significant period of time. As reported in the previous ROP self-assessment, the majority of these FAQs related to the Scrams with Loss of Normal Heat Removal PI. The NRC continues to work with stakeholders to resolve the open issues.

Analysis: This metric was met based on the stable and slightly decreasing trend in interpretation issues, but the staff and many stakeholders recognize that the FAQ process has become inefficient, ineffective, and overly burdensome. The staff plans to address these concerns in CY 2004, as discussed in Attachment 1.

PI-3 Timely Indication of Declining Safety Performance

Definition: Quarterly, track PIs that cross multiple thresholds (e.g., green to yellow or red). Evaluate and characterize these results to allow timely indication of declining performance.

Criteria: Expect low numbers (near zero).



Analysis: The metric criterion was met because there were no occurrences of PIs crossing multiple thresholds during this assessment period. For the given parameters that are monitored by the PIs, the PIs appear to provide timely indication of declining performance.

PI-4 Minimize Potential for Licensee Actions Taken in Response to the Performance Indicator Program That Adversely Impact Plant Safety

Definition: Survey stakeholders regarding PIs driving undesirable decisions. This question will be included in the overall *Federal Register* notice.

Criteria: Expect low numbers of unintended consequences reported, with a stable or decreasing trend.

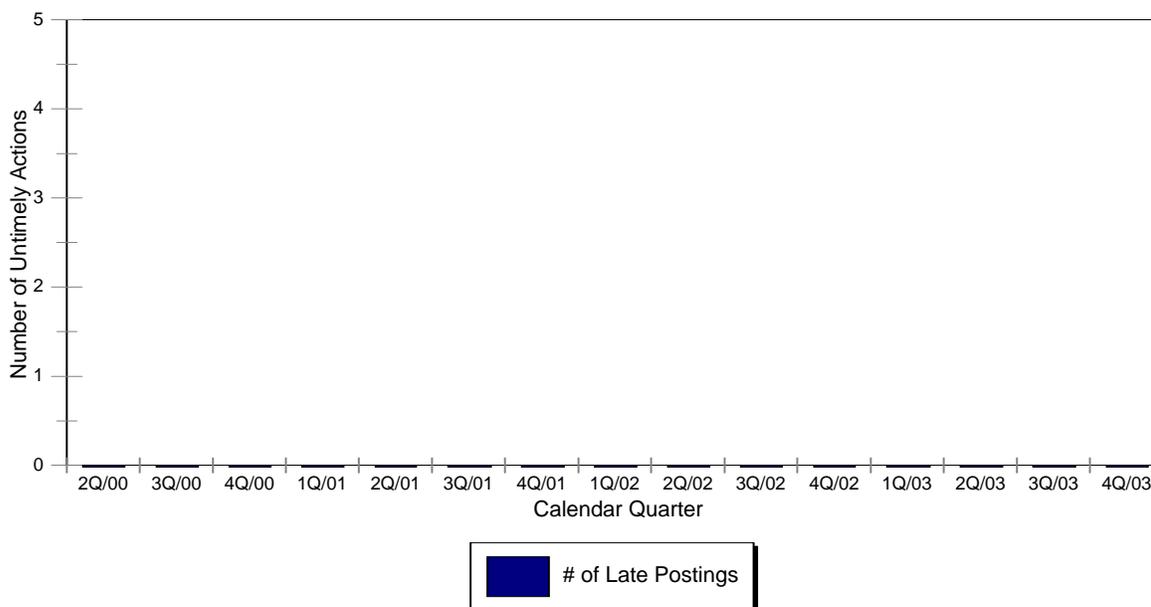
Comments: All of the utility/utility group respondents stated, or endorsed NEI's comment, that the PI program, together with the inspection program, provides incentives to minimize the potential for licensees to take actions that adversely impact plant safety. However, comments provided suggested that a few of the indicators have the potential to influence licensees to take actions that could adversely impact safety. For example, a potential exists to minimize safety system unavailability since there is no penalty for system failure [unreliability] in the PI. In addition, the current interpretation of scrams with a loss of normal heat removal could send a message that operators should focus on the status of non-safety-related equipment rather than monitoring safety-related equipment. Similarly, licensees may delay down powers to avoid an unplanned power change PI occurrence. One respondent commented that to avoid the consequences of a PI [crossing a threshold], much effort is spent developing "creative" ways around the indicator... resulting in FAQs that "stretch" the bounds of the PI. In addition, a non-utility respondent noted that excluding notices of enforcement discretion (NOEDs) from the unplanned power changes PI penalizes plants that choose to reduce power.

Analysis: Last year, the criteria for this metric were not met, primarily because of the responses received from the public interest groups. This year, the criteria for this metric were not met because a number of comments related to issues that could potentially affect licensee actions that impact plant safety. The Scrams with Loss of Normal Heat Removal PI and the Safety System Unavailability PI were specifically identified as indicators that had the potential to influence licensee actions. The staff continues to evaluate these PIs in an effort to improve their effectiveness and minimize potential actions that may adversely impact plant safety. The staff also recognizes that the FAQ process has become inefficient and overly burdensome, and plans to address these concerns in CY 2004. The staff also plans to evaluate the impact of NOEDs on the Unplanned Power Changes PI.

PI-5 Timely PI Data Reporting

Definition: Within 5 weeks of the end of each calendar quarter, track (count) late PI postings on the NRC's external Web site. Also note the number of late submittals from licensees that did not meet the 21-day timeliness goal.

Criteria: Expect a low number (near zero) of late PI submittals and postings on the NRC's external Web site.



Analysis: The metric criterion was met because there have been no late PI data postings on the NRC's external Web site since the inception of the ROP. However, during the 3rd quarter of 2003, one licensee submitted PI quarterly data past the expected due date set forth in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 2. The late submittal required additional NRC followup, but did not delay the Web postings beyond the required 5 weeks from the end of the quarter.

PI-6 Stakeholders Perceive Appropriate Overlap of Inspection Program and PIs

Definition: Survey stakeholders' perceptions of overlap between PIs and the Inspection Program. This question will be included in the survey for internal stakeholders and the *Federal Register* notice for external stakeholders.

Criteria: Expect a low number of negative comments, with a stable or declining trend in the number of negative comments received.

Comment: Consistent with the biennial frequency of the internal ROP survey prescribed by IMC 0307, the staff did not conduct an internal survey during CY 2003, but plans to conduct this survey in CY 2004.

Analysis: All of the external survey responses received from utilities and utility groups stated, or endorsed NEI's comment that, in general, appropriate overlap exists between the PI program and the inspection program. Some respondents further commented that, if anything, there was excessive overlap in that the inspection program looks at areas that are adequately covered by PIs (e.g., in the radiation protection area and the Safety System Unavailability PI) and, in other cases, the PIs monitor areas that are already being inspected (e.g., the Scram with Loss of Normal Heat Removal PI).

External survey responses received from a non-utility group stated that there was appropriate overlap between the PIs and the Inspection Program, but the program could be improved (e.g., continue to focus on cross-cutting issues since there is no PI in this area). Another respondent indicated that this item is not easily measured; however, similar to last year when the ROP didn't identify issues related to the Davis-Besse reactor head, it didn't identify the steam dryer issues at several plants this year.

As previously mentioned, the NRC staff continues work related to the Scram with Loss of Normal Heat Removal PI and with the Safety System Unavailability PI. Comments related to specific areas not directly related to current PIs, such as cross-cutting issues and radiation protection inspections, have been forwarded to the appropriate technical staff for evaluation.

The criterion for this metric has been met based on a relatively stable perception regarding appropriate overlap.

PI-7 Reporting Conflict Reduction

Definition: Survey licensees and other external stakeholders regarding the perceived overlap between reporting requirements, such as those promulgated by the Institute of Nuclear Power Operations (INPO), the World Association of Nuclear Operators (WANO), and the Maintenance Rule. This question will be included in the *Federal Register* notice.

Criteria: Expect a low number of negative comments, with a stable or declining trend in the number of negative comments received.

Analysis: Every utility/utility group respondent commented, or endorsed NEI's comment, that there are differences in reporting and definitions between the ROP, WANO/INPO, and the Maintenance Rule. These comments were similar to those made in previous years. Respondents further noted that the industry is also working to reduce the unnecessary duplicative reporting with the introduction of the Consolidated Data Entry (CDE) system being developed by INPO.

A non-utility stakeholder responded that it was appropriate for the NRC to look for unnecessary overlap, as long as such efforts do not diminish the effectiveness of the program.

Although the utility respondents commented (as they did last year) that differences exist between the ROP, WANO/INPO, and the Maintenance Rule, they identified that the NRC and the industry are continuing their efforts to reduce unnecessary differences.

This metric has been met based on the stable number of negative comments.

PI-8 Clarity of PI Guidance - NEI-99-02

Definition: Survey external stakeholders' perceptions regarding the clarity of the guidance contained in NEI 99-02. This question will be included in the *Federal Register* notice.

Criteria: Expect a low number of negative comments or examples of interpretation issues, with a stable or declining trend in the number of negative comments received.

Analysis: The vast majority of utility/utility group respondents commented, or endorsed the NEI's comment, that in general NEI 99-02 provides clear guidance; however, significant problems remain in the clarity of the Scrams with Loss of Normal Heat Removal and weaknesses with the Safety System Unavailability indicators. Respondents also commented that the FAQ process could be improved by NEI/industry and the NRC coming to meetings better prepared to discuss issues and doing a better job of screening issues.

A non-utility stakeholder commented that the NEI 99-02 guidance was generally helpful, but it would be more appropriate for licensees to comment. Another non-utility stakeholder commented that there appears to be room for interpretation with regard to the Alert and Notification System and Emergency Response Organization (ERO) Drill Participation indicators.

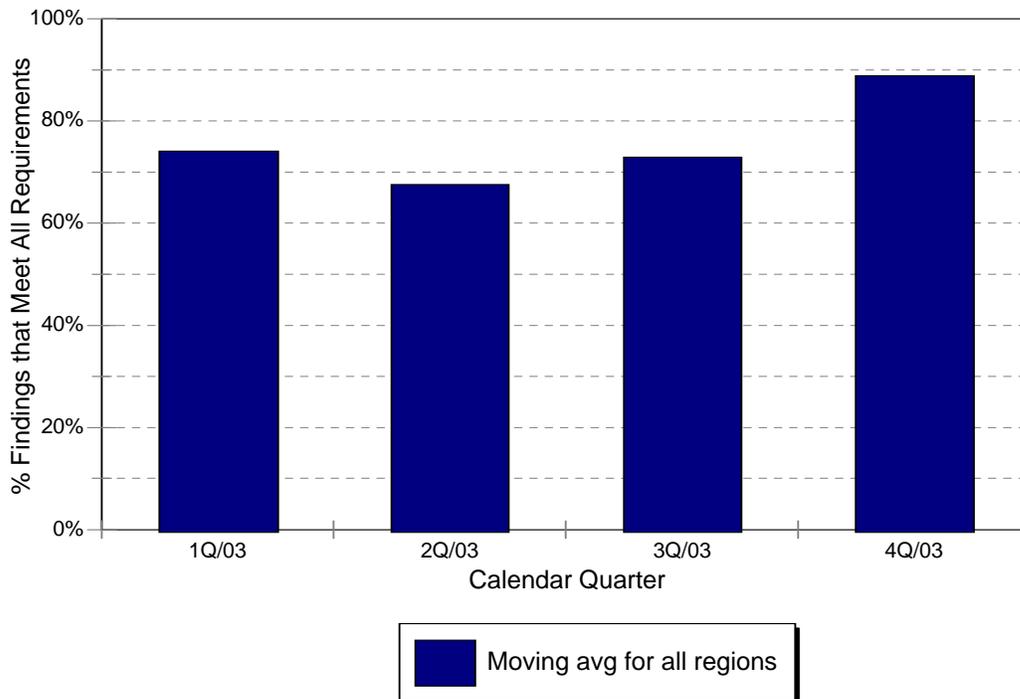
While the comments related to the Scrams with Loss of Normal Heat Removal PI directly related to the clarity of the purpose and definitions of the NEI 99-02 guidance, the comments on the Safety System Unavailability PI did not directly relate to the clarity of the PI guidance. Rather, the Safety System Unavailability PI comments related to the construct of the PI, and the staff analyzed these comments in metric PI-4. As previously noted, the NRC staff continues to work with stakeholders to resolve problems with the Scrams with Loss of Normal Heat Removal PI and the Safety System Unavailability PI, and plans to improve the efficiency and effectiveness of the FAQ process in CY 2004.

The criterion for this metric was met since the survey yielded a low number of negative comments and examples of interpretation issues.

IP-1 Percentage of Inspection Findings IAW Requirements

Definition: Audit inspection reports in relation to program requirements (IMC 0612, "Power Reactor Inspection Reports") for documenting green findings, greater-than-green findings, and violations. Report the percentage of findings that meet the program requirements. Each year, audit one resident/integrated report from each plant, 25 percent of all other baseline reports, and all reports resulting from inspections beyond the baseline program.

Criteria: Expect a stable or improving trend in the percentage of findings documented in accordance with program requirements.



Comments: The graph represents the cumulative average for all inspection reports reviewed by the staff of the Inspection Program Branch (IIPB) in the NRC's Office of Nuclear Reactor Regulation (NRR), Division of Inspection Program Management. No data was available from 4th quarter 2001 through 4th quarter 2002 because the IIPB staff did not review inspection reports during this period so that inspectors could be trained on the new documentation requirements of the revised IMC 0612. The average reported for any given quarter is the integrated average for the past 4 quarters.

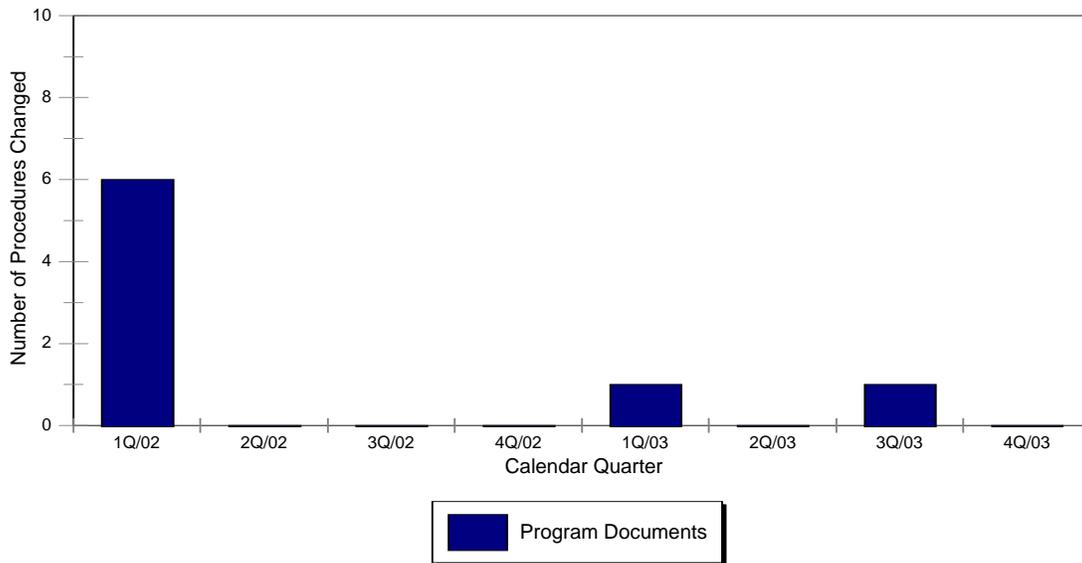
Analysis: The staff obtained the data for CY 2003 by auditing inspection reports in accordance with IIPB operating instruction BOI-002, "Inspection Report Review Process." Specifically, the staff reviewed 99 inspection reports from all four

regions, which documented a total of 254 findings. The percentage of findings documented in accordance with IMC 0612 requirements increased from 67.7 percent in the first quarter of 2003 to 88.9 percent in the fourth quarter, indicating an improving trend. Therefore, this metric was met.

IP-2 Number of Baseline Inspection Procedures Significantly Changed

Definition: Review all issued changes to baseline inspection procedures and count those procedures whose scope or frequency of inspection changed, and count new inspectable areas that relate to risk-informing the inspection.

Criteria: Expect relatively few significant changes, with a stable or declining trend.

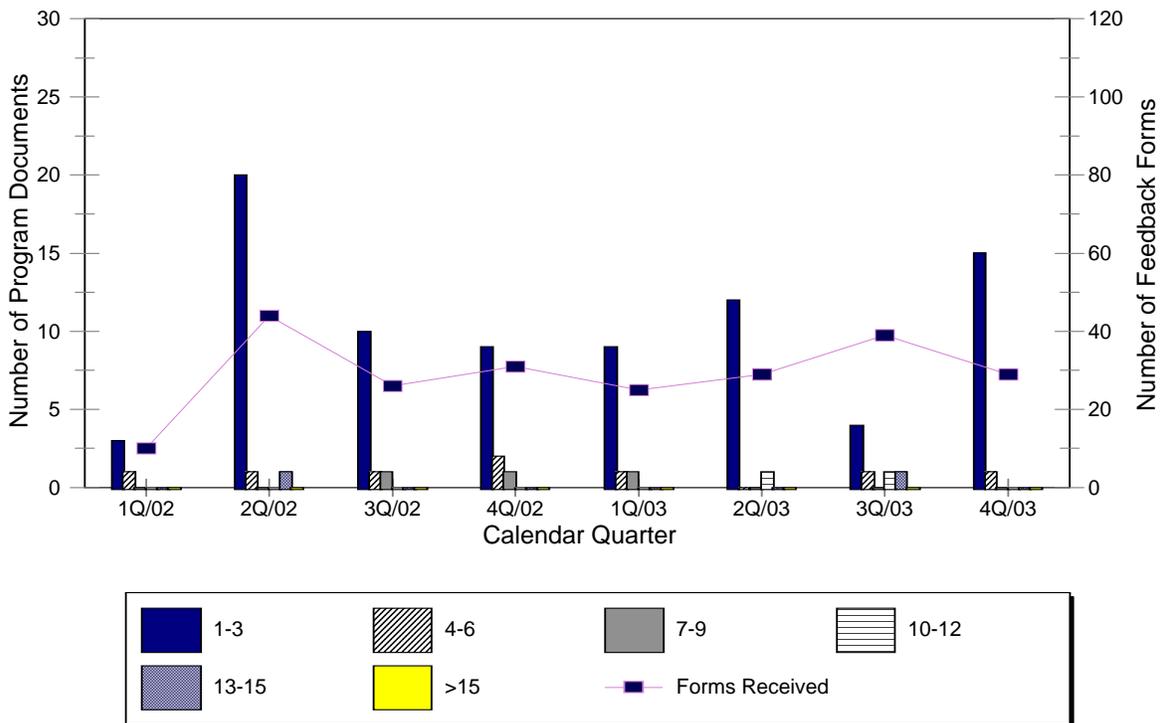


Analysis: Two changes affected the scope of the baseline inspection procedures in CY 2003. Specifically, in the first quarter, the staff revised IP 71111.05, “Fire Protection,” to provide additional inspection requirements and guidance for evaluating licensees’ manual actions in lieu of full implementation of Section III.G.2 of Appendix R to Title 10, Part 50, of the Code of Federal Regulations (10 CFR Part 50). In the second quarter, there were no procedure changes that affected either the scope or the frequency of inspections. However, in the third quarter, the staff revised IP 71152, “Problem Identification and Resolution (PI&R)” to incorporate recommendations made by the PI&R Focus Group to address several items from the DBLLTF. Specifically, the changes included enhanced requirements regarding the routine PI&R reviews conducted by resident inspectors, biennial reviews of longstanding issues, and biennial reviews of operating experience issues. Although the staff made a number of minor changes to the baseline inspection procedures, the number of significant changes during calendar years 2002 and 2003 remained stable. This metric was met based on the relatively stable trend.

IP-3 Number of Feedback Forms per Document

Definition: Count the number of feedback forms received for each program document each quarter. Use a histogram to chart the number of documents for which feedback forms were received. Highlight those documents against which the most forms are written.

Criteria: Expect a stable or decreasing trend in the number of feedback forms received for program documents.



Analysis: The staff received 123 feedback forms from January 1, 2003, through December 31, 2003. Approximately 55 percent of all feedback forms received during this assessment period related to issues in the areas of (1) Significance Determination Process (IMC 0609), (2) Power Reactor Inspection Reports (IMC 0612), (3) Qualification Program for the Office of Nuclear Reactor Regulation Programs (IMC 1245), and (4) Light-Water Reactor Inspection Program - Operations Phase (IMC 2515). Of these areas, IMC 0612 has the most feedback forms (approximately 20 percent of all forms received), while IMC 0609, IMC 1245, and IMC 2515 each received about 11 percent. The remaining 45 percent of feedback forms were spread across the other inspection manual chapters and inspection procedures, with no individual document receiving more than 5 percent of all feedback forms.

The concentration of feedback forms in certain topical areas is consistent with the staff's current improvement efforts in the reactor oversight process. In particular, the staff issued IMC 0612 in June 2003 to clarify the previously existing information regarding the order in which activities will normally be performed in the process of developing and transmitting a reactor inspection report. In addition, IMC 0612 addressed various inconsistencies that existed between other inspection program documents, including the enforcement policy. The SDP Improvement Program is ongoing and the staff is currently working with the industry to address various SDPs, such as Shutdown and Fire Protection. In addition, the staff has revised the inspector training and inspection program guidance documents (IMCs 1245 and 2515) to provide additional clarification based on regional feedback.

The number of feedback forms received in CY 2003 (123 forms) was within 10 percent of the number received in previous years (112 for CY 2002 and 118 for CY 2001). Although the metric data indicated that the number of feedback forms received increased slightly during the first quarter through third quarter, the fourth quarter data showed a slightly declining trend. The metric criteria was met; however, the concentration of feedback forms in selected program areas indicated that further improvement is needed in these areas for CY 2004.

IP-4 Completion of Baseline Inspection Program

Definition: Annual completion of baseline inspection program.

Criteria: Defined as per IMC 2515

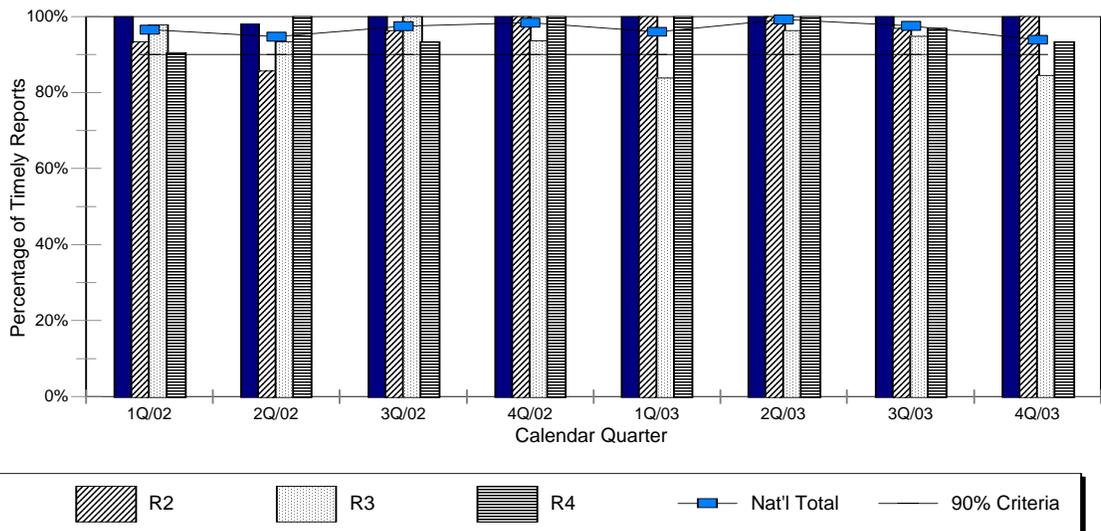
Comments: Regions report any non-completions at the end of each annual inspection cycle. Assess cumulative completion of baseline IPs during the year.

Analysis: The metric criterion was met because all four NRC regions completed the baseline inspection program during ROP cycle 4 (CY 2003) in accordance with IMC 2515. The staff did not include the Davis-Besse Nuclear Power Station in this analysis since the baseline inspection program was replaced by inspections governed by IMC 0350, "Oversight of Operating Reactor Facilities in a Shutdown Condition with Performance Problems." However, significant additional resources out of headquarters and other regions were necessary to assist certain regions in completing the baseline inspection program in CY 2003, as discussed in Attachments 1 and 6 to this paper.

IP-5 Inspection Reports are Timely

Definition: Obtain RPS data on the total number of reports issued and the number issued within timeliness goals as defined in IMC 0612

Criteria: Expect 90 percent of inspection reports to be issued within the program's timeliness goals.



Comments: For inspections not conducted by a resident inspector, inspection completion is normally defined as the day of the exit meeting. For resident inspector and integrated inspection reports, inspection completion is normally defined as the last day covered by the inspection report.

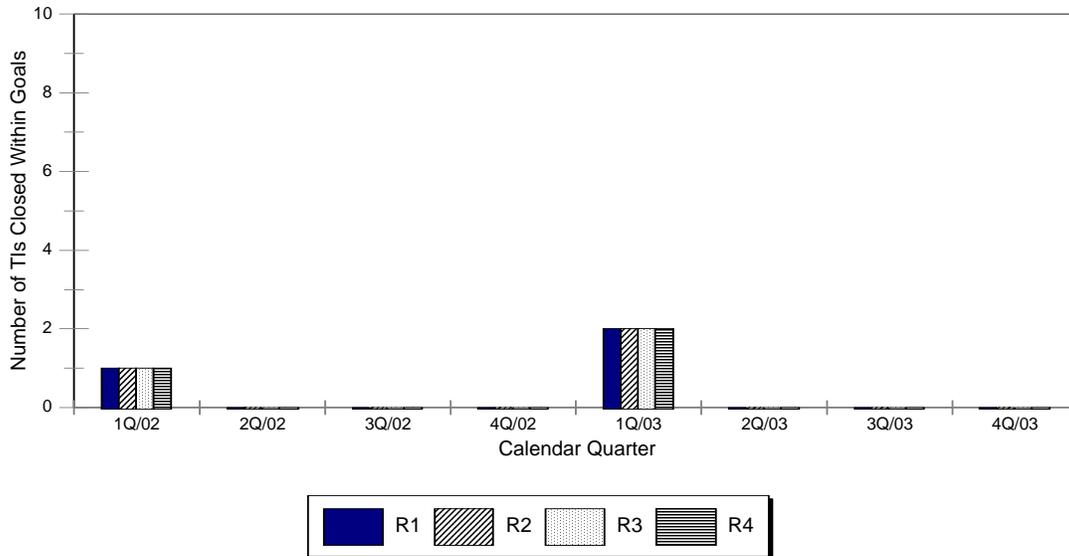
Analysis: The NRC issued a total of 527 inspection reports during CY 2003. During the first and fourth quarters, all but one region met the timeliness goals during this assessment period. The late reports were attributed to (1) the additional NRC oversight of inspection activities and the scrutiny by the public, Congress, and other stakeholders, for certain plants with performance issues; and (2) reports containing findings in the safeguards arena that were held up awaiting the Commission's decision regarding the dissemination of security-related information. Both of these factors have been addressed, so the staff believes that timeliness will improve in 2004.

For the program as a whole, 96.6 percent of all issued inspection reports were timely. This metric was met because more than 90 percent of the inspection reports were issued within the program's timeliness goals.

IP-6 Temporary Instructions (TIs) are Completed Timely

Definition: Audit the time to complete TIs by region. Compare the completion status in RPS to TI requirements. Report by region the number of TIs closed within goals.

Criteria: Expect all TIs to be completed within TI requirements.



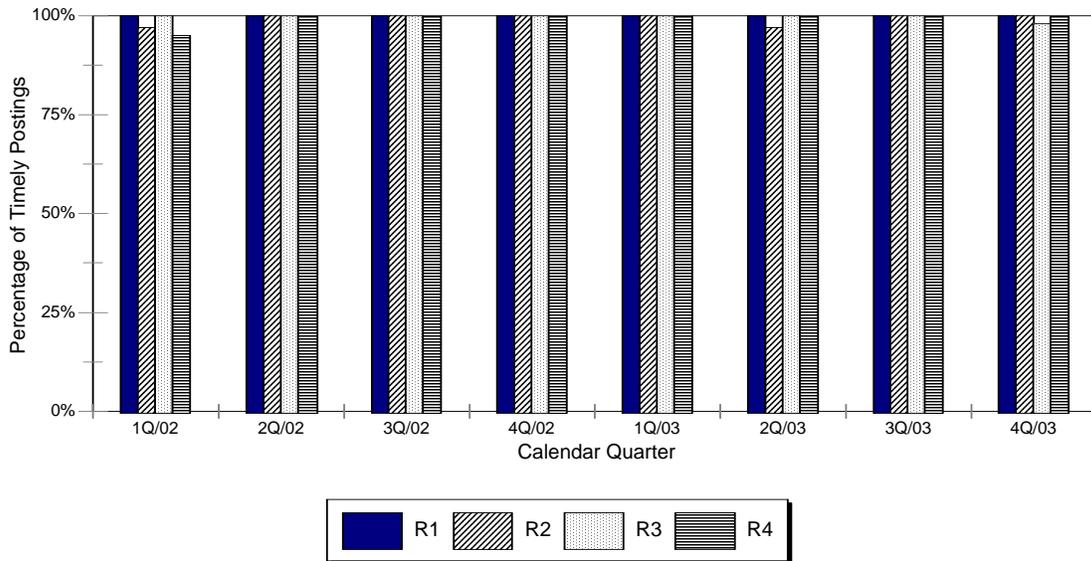
Analysis: The staff completed TI 2515/145, “Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles” (NRC Bulletin 2001-01), and TI 2515/146, “Hydrogen Storage Locations,” during the first quarter of 2003 within the timeliness goals. The staff was not required to complete any other TIs during this calendar year. The metric criterion was met because all TIs were completed within TI requirements.

IP-7 Public Communication Is Timely

Definition: The Inspection Program Branch (IIPB) within NRR posts inspection reports to the NRC’s external (public) Web site within ROP timeliness goals using electronic versions of inspection reports entered into the NRC’s Agencywide Documents Access and Management System (ADAMS) by the regions. IIPB also posts entries from the Plant Issues Matrix (PIM) to the NRC’s public Web site using data entered into the Reactor Program System (RPS) by the regions. In addition, IIPB records the number of inspection reports not available in ADAMS and the number of PIM entries not updated in RPS, as well as the number of inspection reports and PIMs that are not posted to the NRC’s public Web site within goals.

Within 5 weeks of the end of each quarter, IIPB posts issued inspection reports from the previous quarter, using the electronic version in ADAMS, and the associated PIM entries from RPS to the NRC’s public Web site. Within 9 weeks of the end of each quarter, IIPB posts additional inspection reports and PIM entries for those not yet issued by the 5-week posting to include all findings from the previous quarter.

Criteria: Expect few untimely postings of PIMs or inspection reports, with a stable or



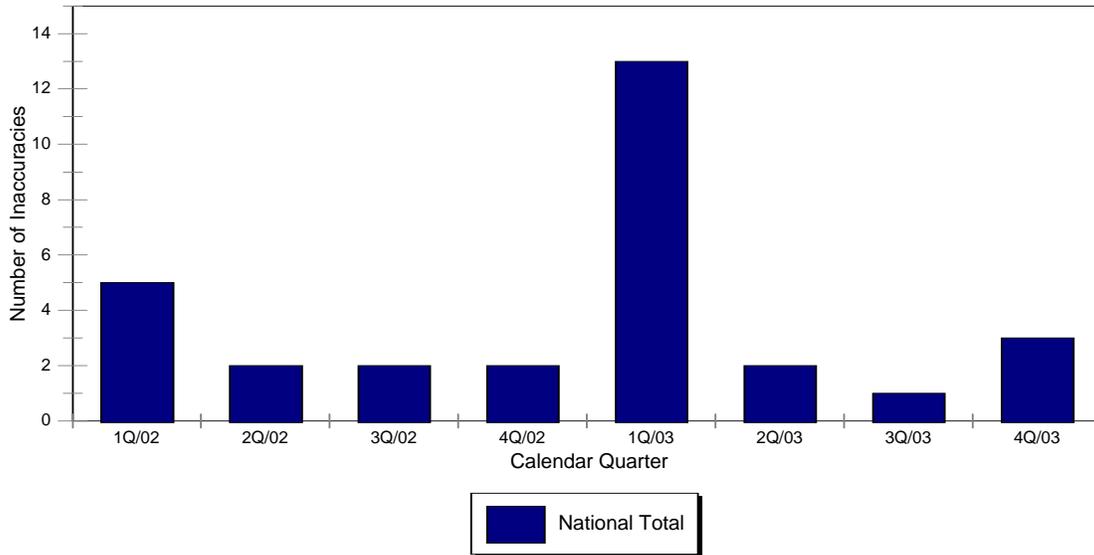
declining trend.

Analysis: There continue to be very few untimely postings of PIMs and/or inspection reports to the ROP Web page. The few exceptions appear to be isolated and not indicative of a systematic problem. However, the percentage of timely postings has consistently been at or very near 100 percent for each quarter, with a stable trend in untimely postings. Therefore, the metric criterion was met.

IP-8 Public Communication Is Accurate

Definition: Each calendar quarter, sample information on the NRC’s external (public) Web site and count the number of times and reasons for regions changing PIMs or inspection reports (i.e., inaccuracy, new information).

Criteria: Expect few inaccuracies, with a stable or declining trend.



Analysis: The increase in the inaccurate postings of PIM entries or inspection reports on the Web during the first quarter of CY 2003 was attributed to errors by one region. That region has taken actions to reduce the number of inaccuracies, as evidenced by very few inaccuracies in the subsequent quarters. The metric criterion was met based on a stable trend of few inaccuracies.

IP-9 Analysis of Inspection Hours

Definition: Collect and analyze RPS data (i.e., number of samples, regular hours, and overtime hours) for each inspection procedure (including plant status). Collect preparation and documentation time.

- Criteria:**
- (1) Expect no significant deviations (less than 20 percent per procedure across all plants in region), and explore reasons for such deviations.
 - (2) Track and trend overtime for the baseline inspection program and the underlying reasons, and use first year data to establish a baseline.
 - (3) Track and trend preparation, documentation, travel, and communication times to establish a baseline, and assess the effects on budgeted resources.

Analysis: As reported in Table 1 of Attachment 6 to this report, the baseline inspection effort in CY 2003 reflects a return toward the nominal inspection effort described in each baseline inspection procedure and a downward trend in the rate of resource usage comparable to the reductions seen during the first 2 years of implementation. Plant-specific inspection effort increased significantly during CY 2003 compared with the previous evaluation periods (from approximately 16,000 hours to 24,600 hours). This increase is primarily attributable to the effort required at DBNPS for the IMC 0350 restart inspections and the followup efforts associated with inspection findings and performance issues at Point Beach Nuclear Plant.

A significant increase was also seen in the CY 2003 inspection effort for generic and plant-specific safety issues. This increase is the result of the high level of activity for TIs issued during CY 2003 for issues related to safeguards, material accountability, containment sump blockage, and reactor vessel head and vessel head penetration inspections. The metric criterion was met based on no significant deviations in inspection hours from the nominal effort.

IP-10 **Survey of ROP Users**

Definition: Survey inspectors and other NRC personnel implementing the ROP, asking whether the inspection program covers areas that are important to safety.

Criteria: Trend the average level of agreement.

Comment: The staff did not capture this metric during CY 2003, but will analyze the survey results next year, consistent with the biennial frequency of the internal ROP survey prescribed by IMC 0307. The staff will conduct the next survey in CY 2004 and will discuss the results in the next annual ROP self-assessment.

Analysis: None

IP-11 Survey of Inspection Report Usefulness

Definition: Survey external stakeholders, asking about the usefulness of inspection reports. This question will be included in the *Federal Register* notice.

Criteria: Trend the average level of agreement.

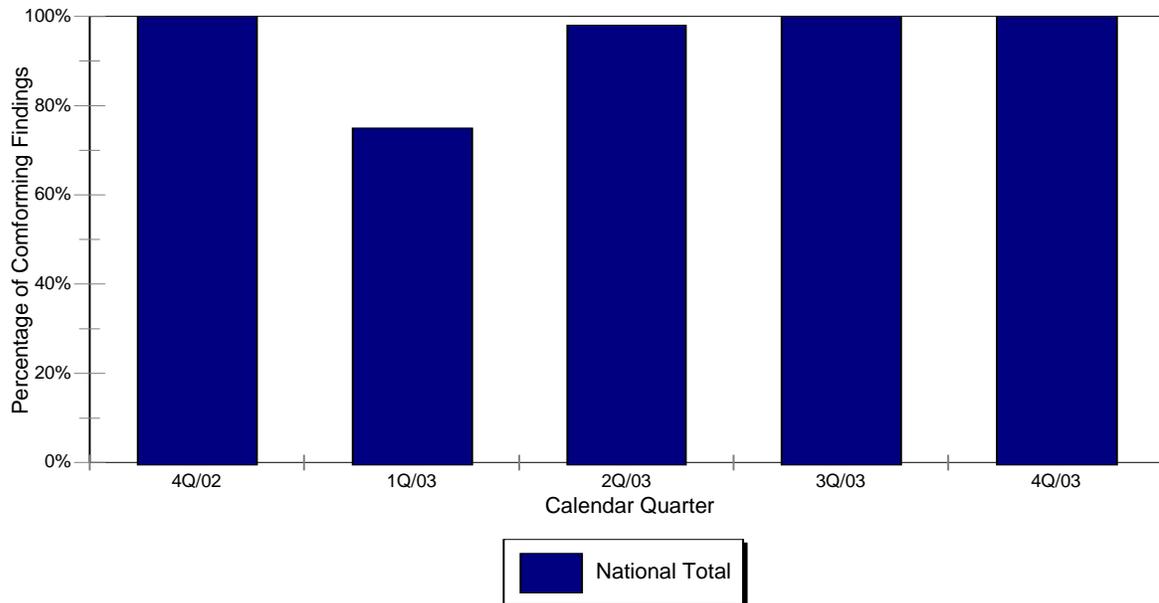
Analysis: Of the 19 comments received in response to a *Federal Register* notice issued in November 2003, 11 addressed the question concerning the usefulness of inspection reports. Of those 11 comments, 10 indicated that the inspection reports contain useful information and the overall the quality of the reports has improved. However, one respondent stated that the inspection reports would be more useful if they contained more information to allow trending or evaluation of less-significant events.

This metric was met based on a similar level of positive response compared to the previous survey.

SDP-1 The SDP Results Are Predictable and Repeatable and Focus Stakeholder Attention on Significant Safety Issues

Definition: Quarterly audit a representative sample of reported inspection findings against the standard criteria set forth in IMC 0609, "Significance Determination Process." Findings should contain adequate detail to enable an independent auditor to trace through the available documentation and reach the same significance color characterization.

Criteria: The target goal is that at least 90 percent of the SDP results are predictable and repeatable. Any SDP outcomes that are determined to be non-conservative will be evaluated and appropriate programmatic changes will be implemented.



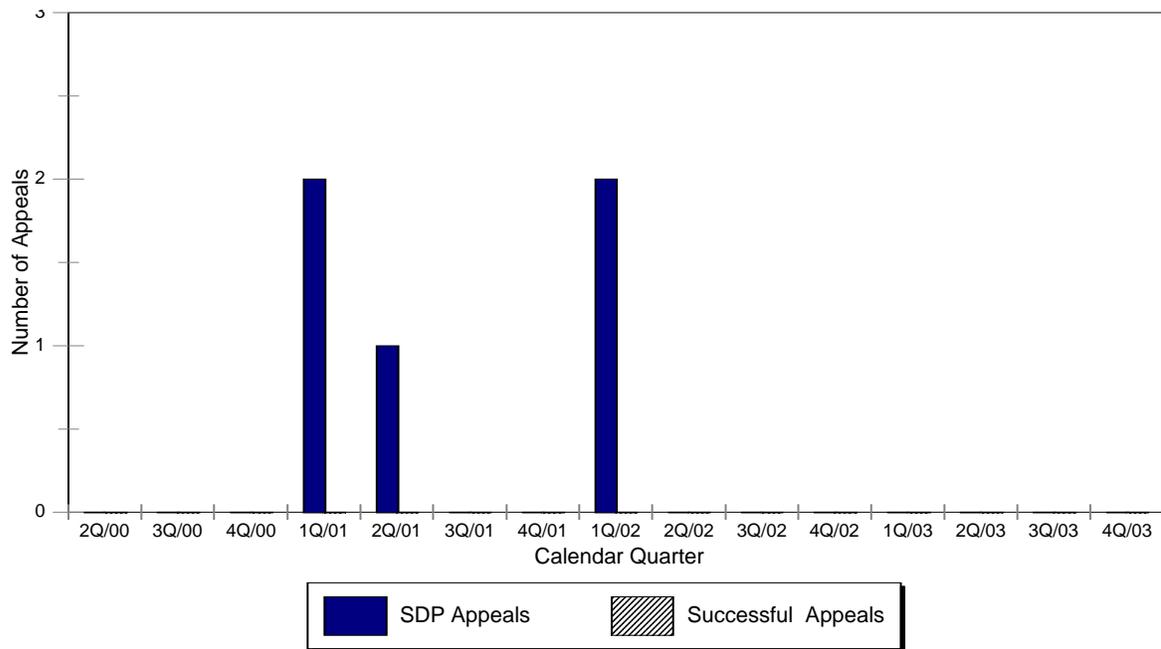
Analysis: A quarterly review, conducted by the NRC's Office of Nuclear Regulatory Research (RES), of greater-than-green inspection findings in the initiating events, mitigating systems, and barrier integrity cornerstones determined that documentation to support the overall SDP risk conclusions was sufficient in all cases reviewed during this ROP cycle. In addition, inspection program staff reviewed documentation for inspection findings that were not reviewed by RES across all cornerstones. All findings reviewed contained sufficient documentation for an independent auditor to reach the same significance color determination.

Performance during this assessment period met program expectations.

SDP-2 SDP Outcome Is Risk-Informed and Accepted by Stakeholders

Definition: Track the total number of successful appeals of final SDP results reported quarterly by the regions.

Criteria: Expect zero appeals of SDP significance that result in final determinations being overturned across all regions.



Analysis: There were no appeals of final SDP results during the current ROP cycle across all regions.

Performance during this assessment period met program expectations.

SDP-3 Inspection Staff Is Proficient and Find Value in Using the SDP

Definition: Survey internal stakeholders over time using specific quantitative survey questions that focus on proficiency, effectiveness, and efficiency.

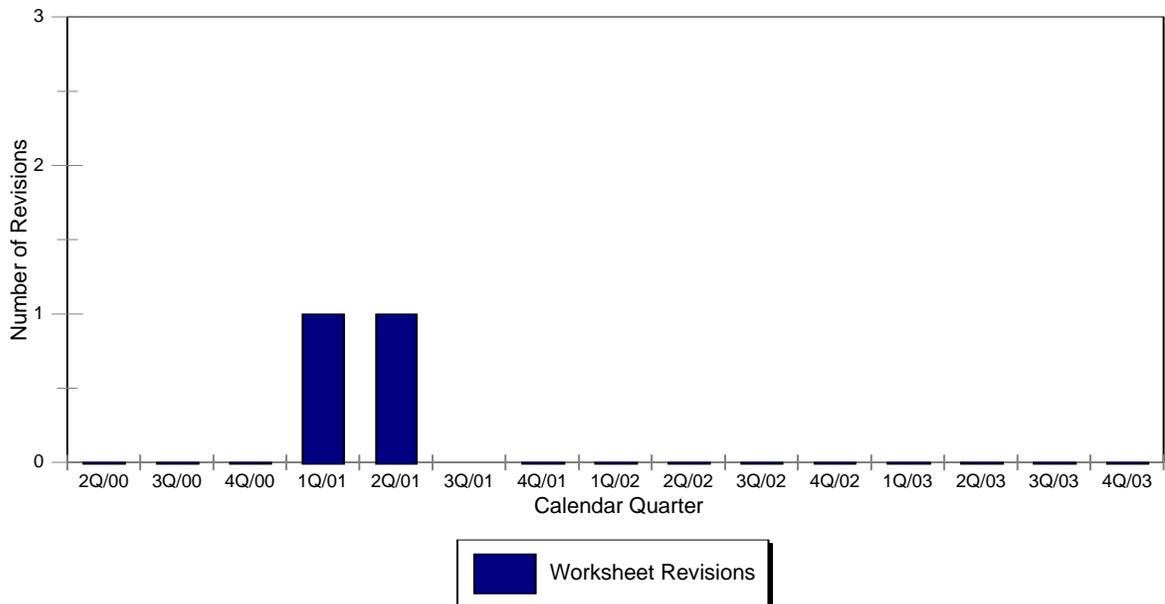
Criteria: Expect either a stable or increasingly positive perception of the SDP process over time.

Comments: The staff did not capture this metric during CY 2003, but will analyze the survey results next year, consistent with the biennial frequency of the internal ROP survey prescribed by IMC 0307. This metric was not met during the CY 2002 self-assessment cycle, but the staff continues to implement the SDP Improvement Initiative and anticipates a stable or increasing proficiency in using the SDP based on CY 2004 internal survey results.

SDP-4 SDP Tools for Evaluating Inspection Findings Reflect Current Plant Design and Licensee Operating Practices

Definition: Monitor the number of substantive revisions made to the risk-informed inspection notebooks due to non-conservative technical flaws by tracking the number of Phase 2 inspection notebooks that are issued for use and are subsequently withdrawn following onsite benchmarking activities conducted by the staff.

Criteria: The target goal is zero notebook retractions because of non-conservative technical flaws following onsite benchmarking.



Analysis: During CY 2003, the staff finished benchmarking the risk-informed inspection notebooks for all remaining sites, which included comparing the notebooks against licensee-developed risk models using similar assumptions. No (revision 1) notebooks have been retracted or returned to Brookhaven National Laboratories for immediate revision to limit potentially non-conservative outcomes during the assessment period.

Performance during this assessment period met program expectations.

SDP-5 Results of the Same Color are Perceived by the Public To Translate to the Same Level of Significance for All Cornerstones.

Definition: Publish a *Federal Register* notice to survey external stakeholders using specific questions asking for examples of where SDP-determined significance of findings does not appear to be consistent across ROP cornerstones.

Criteria: Expect a stable or increasingly positive perception of the SDP over time.

Analysis: External stakeholder survey results regarding the SDP in response to a *Federal Register* notice issued in November 2003 were nearly identical to those received during the previous year. Industry respondents did not believe that same color findings represent the same level of significance across all ROP cornerstones. Rather, they felt that the reactor safety cornerstones were consistent, but were dissatisfied with SDP results for emergency preparedness, radiation safety, and physical protection. The impression was that these SDPs were not risk-informed, but “a deterministic escalation for various types of regulatory noncompliance” and, in general, that these SDPs were subjective in nature. The results also indicated that the non-green thresholds for these SDPs overstate the significance of findings. One concern of deterministic SDPs was the tendency to aggregate findings of minor risk significance to create a final determination out of proportion to the risk of an individual finding. Respondents did note, however, that the NRC is making progress in improving the SDPs for radiation safety and emergency preparedness, while the physical protection SDP is still under development.

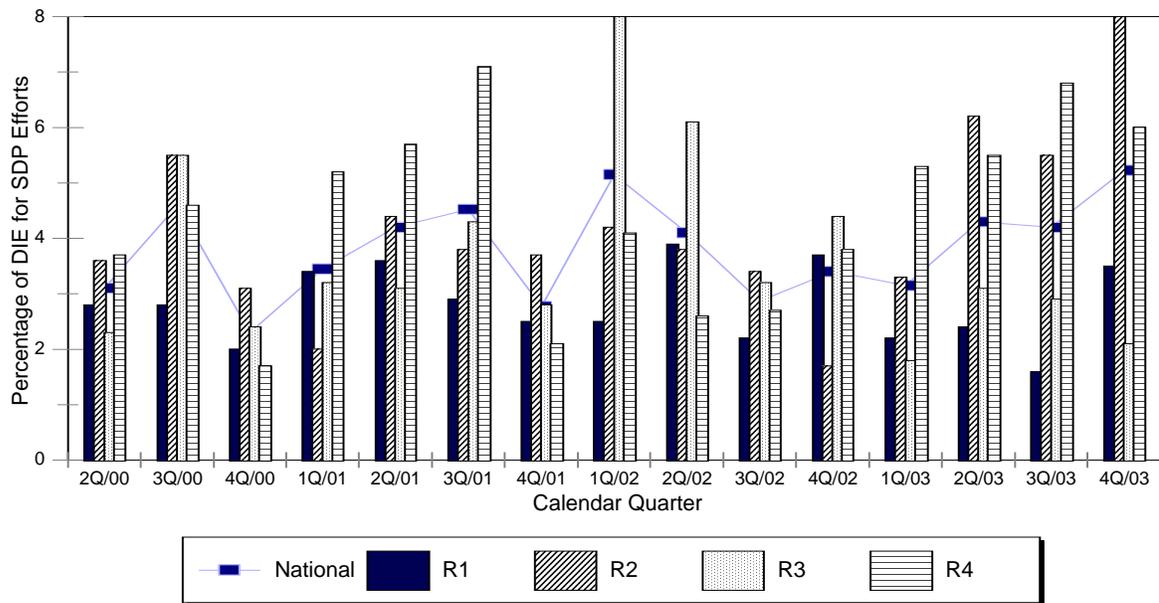
Citizens' groups and State agencies agreed with industry respondents that same color findings did not represent the same level of significance across all cornerstones. One respondent indicated that cornerstones are not directly comparable, so they can't yield equivalent results. It is believed that downgrading of initial significance determinations indicates that significance is not easily determined (e.g., the Indian Point steam generator tube rupture analysis), and that since cross-cutting issues are not taken into consideration, equivalence doesn't always exist across cornerstones. Some respondents also felt that the SDP is subjective and can be manipulated to “justify” any color, referencing the Davis-Besse vessel head analysis. In addition, some believe that the process is not repeatable, as illustrated by reductions in significance from preliminary to final determinations.

Performance during this assessment period did not meet program expectations.

SDP-6 The Resources (Direct Charges and Support Activities) Expended Are Appropriate

Definition: Track the percentage of total inspection resource expenditure attributed to SDP activities. Calculate the effort expended by the regions in completing SDP evaluations as a percentage of the total regional direct inspection effort.

Criteria: Total SDP expenditures should not exceed 10 percent of the total regional direct inspection effort (DIE), with a stable or decreasing trend.



Analysis: Regional expenditures associated with SDP evaluations remain stable and below the target goal. There was a slight increase in the average as a result of significant resource expenditures on fire protection issues at Surry Power Station, St. Lucie Plant, North Anna Power Station, and Arkansas Nuclear One (ANO), as well as a complicated issue at River Bend Station involving a condensate valve. These issues contributed significantly to the large increase in resource expenditures in Regions II and IV.

Performance during this assessment period met program expectations.

SDP-7 Appropriateness of Regulatory Impact from the SDP

Definition: Monitor the trend of regulatory impact forms that are critical of the SDP and assessment processes.

Criteria: Expect a stable or decreasing trend.

Analysis: The number of regulatory impact forms that provided critical licensee feedback with regard to the SDP declined from nine reported during the previous assessment period to two in this period. This decline occurred even though the number of SDP assessments remained constant. The decline in critical feedback is a positive sign and appears to indicate that licensees now have a more favorable opinion of the SDP process.

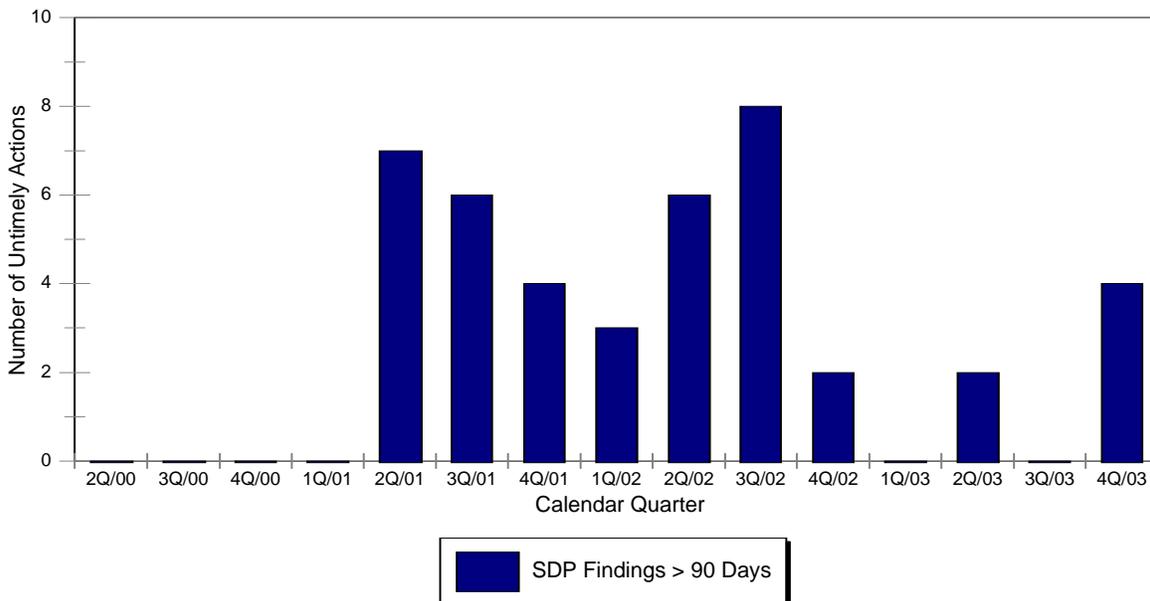
Performance during this assessment period met program expectations.

SDP-8 Final Significance Determinations Are Timely

Definition: Conduct a quarterly audit of RPS data to identify the total number of inspection items finalized as greater than green that were under review for more than 90 days since:

- (1) the date of initial licensee notification of the preliminary significance in an inspection report, or
- (2) the date the item was formally transmitted to an NRR technical branch for SDP assistance, or
- (3) the item was otherwise documented in an inspection report as an unresolved item pending completion of a significance determination and not counted in either of the above categories.

Criteria: In FY 2003, at least 75 percent of all SDP results that are counted in accordance with the above criteria should be finalized within 90 days, increasing 5 percent per year to 90 percent in FY 2006. All issues greater than 90 days will be assessed to determine causal factors and to recommend process improvements.



Analysis: Timeliness of final significance determinations improved from 57 percent in FY 2002 to 73 percent in FY 2003, but fell short of the 75 percent goal. The issues that were late involved complex engineering analyses at DBNPS for the boric acid corrosion of the vessel head, Dresden Nuclear Power Station for a water hammer issue involving inoperability of the high-pressure coolant injection (HPCI) system, and DC Cook for a loss of essential service water (ESW) due to debris intrusion. Untimely issues increased in the fourth quarter of CY 2003 as a

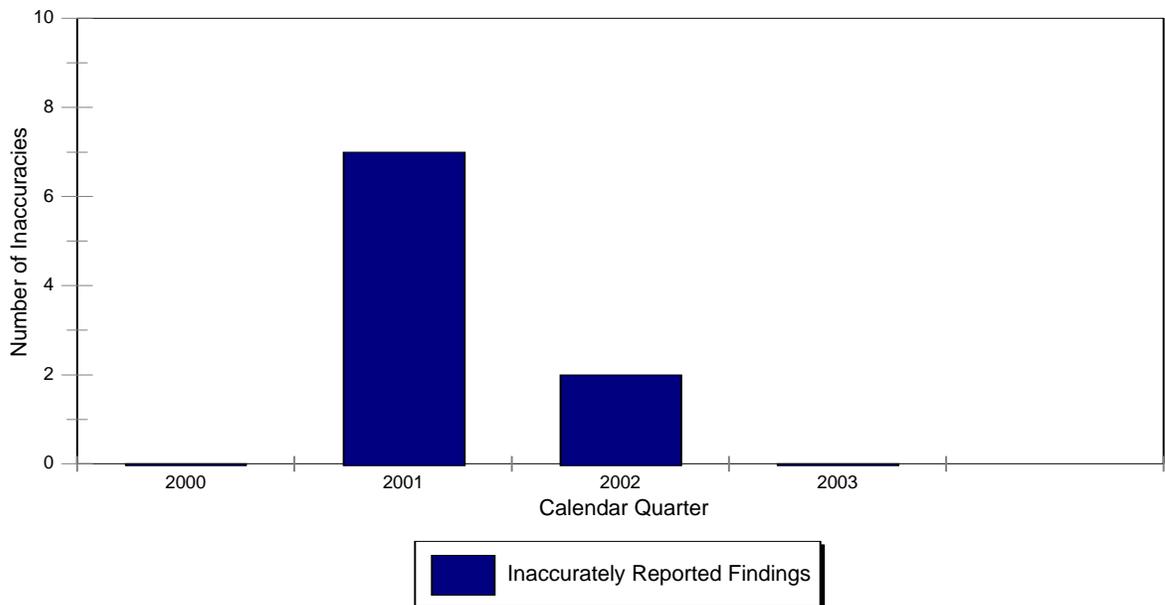
result of a focused effort to close out longstanding open issues at Oconee Nuclear Station, River Bend Station, and Point Beach Nuclear Plant. In accordance with IMC 0307, the staff assesses all issues that fail to meet the timeliness metric to determine the causal factors and recommend process improvements. SDP timeliness remains a challenge and continues to be addressed by the SDP Improvement Task Action Plan.

Performance during this assessment period did not meet program expectations.

SDP-9 SDP Results Are Communicated Accurately to the Public

Definition: Each calendar quarter, track the number of inspection findings that are inaccurately communicated to the public (color of findings is inaccurately reported), by auditing the inspection findings summary information available on the NRC Web site. The detailed review will include item type, significance characterization, enforcement action status, and text descriptions of greater than green inspection findings prior to release to external stakeholders.

Criteria: The target goal is zero inaccuracies. All inaccuracies must be addressed.



Analysis: During the current assessment cycle, no instances were identified in which the status of documented inspection findings were inaccurately reported on the NRC’s external Web site when looking at Action Matrix information developed from the reported Plant Issues Matrix (PIM) data. New procedures requiring multiple checks before posting findings to the external Web site have improved the performance in this metric, which failed to meet its performance criteria last year.

Performance in this area met program expectations.

AS-1 Subjective Judgment Is Minimized and Is Not a Central Feature of the Process. Actions Are Determined by Quantifiable Assessment Inputs (Examine PIs and SDP Results)

Definition: Audit all assessment-related letters and count the number of deviations from the Action Matrix.

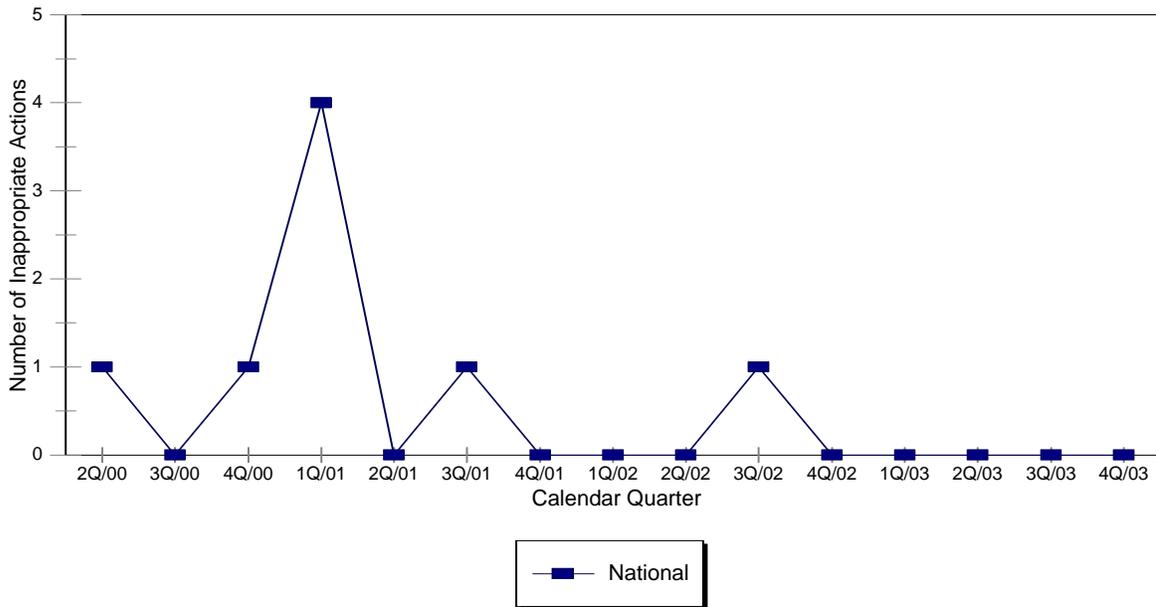
Criteria: Expect few deviations, with a stable or declining trend.

Analysis: A total of two deviations from the Action Matrix have occurred since the beginning of the Reactor Oversight Process. Therefore, the metric criterion was met. The most recent deviation was approved on March 18, 2003, to allow for heightened oversight of Indian Point Station, Unit 2. In addition, on August 26, 2002, the NRC approved a deviation from actions required by IMC 0305 "Operating Reactor Assessment Program" for Oconee Nuclear Station, Unit 1, which was in the multiple/repetitive degraded cornerstone of the Action Matrix. This deviation allowed for agency actions consistent with the degraded cornerstone column, including the performance of an IP 95002 rather than an IP 95003 supplemental inspection.

AS-2 The Program Is Well-Defined Enough To Be Consistently Implemented

Definition: Audit all assessment letters and assessment followup letters. Count the number of significant departures from requirements in IMCs 0305, "Operating Reactor Assessment Program," and 0350, "Oversight of Operating Reactor Facilities in an Extended Shutdown as a Result of Significant Performance Problems." Timeliness goals are counted in metric AS-5.

Criteria: Expect few departures, with a stable or declining trend.

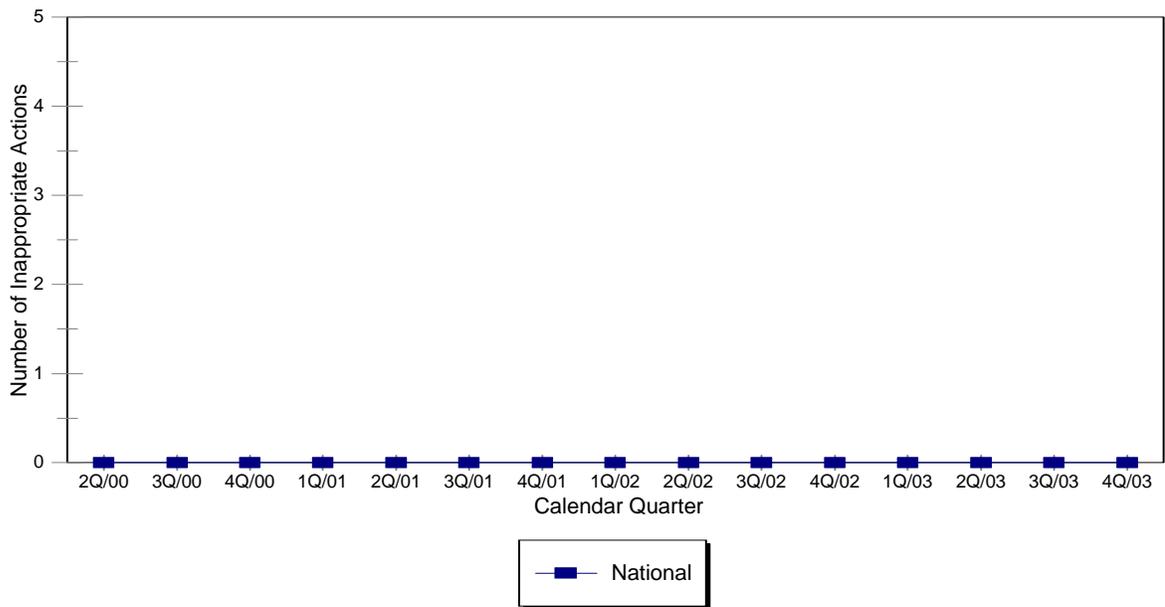


Analysis: There were no significant departures from the requirements of IMCs 0305 or 0350 as a result of an audit of assessment letters during the review period. Therefore, this metric criterion was met.

AS-3 Actions Taken Are Commensurate with the Risk of the Issue and Overall Plant Risk

Definition: Review actions taken for greater than green findings and performance. Track the number of actions (or lack of actions) taken by the regions that are not appropriate for the significance of the issues, based on inputs from PIs and inspection findings, and compared to the Action Matrix.

Criteria: Expect few departures, with a stable or declining trend.



Analysis: The metric criterion was met because all actions taken by the regional offices were consistent with the Action Matrix during the review period. One deviation was approved as noted in metric AS-1.

AS-4 The Number and Scope of Additional Actions Recommended as a Result of the Agency Action Review Meeting (AARM) Beyond Those Actions Already Taken Are Limited

Definition: Review the results of the Agency Action Review Meeting (AARM).

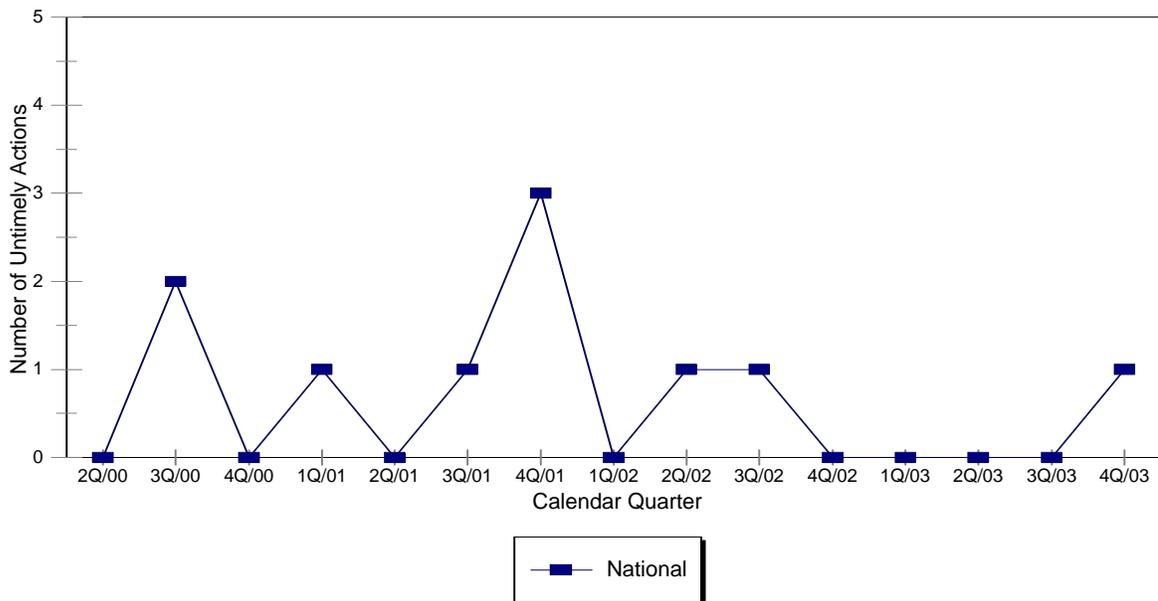
Criteria: The AARM should recommend few additional actions, with a stable or declining trend.

Analysis: The AARM was held on April 22–23, 2003, in Annapolis, Maryland. The participants confirmed the appropriateness of agency actions for Indian Point 2, Oconee 1, Point Beach 1 and 2, and Cooper. The metric criterion was met because the participants did not recommend any additional actions beyond those already taken or planned. The next AARM is scheduled for April 14, 2004.

AS-5 Assessment Program Results (Assessment Reviews, Assessment Letters, and Public Meetings) Are Completed in a Timely Manner

Definition: Track the number of instances in which timeliness goals established in IMC 0305 were not met. The regions will collect timeliness data for the conduct of quarterly reviews (within 5 weeks after end of quarter); mid-cycle, and end-of-cycle reviews (within 6 weeks after end of quarter); issuance of assessment letters (within 2 weeks after quarterly reviews and 3 weeks after mid-cycle and end-of-cycle reviews); assessment followup letters (on or before the next quarterly review); and public meetings (within 16 weeks of the end of the assessment period).

Criteria: Expect few instances in which timeliness goals were not met, with a stable or declining trend.



Analysis:

4Q/2003: All 66 quarterly assessment reviews and 3 out of 4 assessment followup letters were completed within timeliness goals.

3Q/2003: All 66 mid-cycle review meetings were conducted within timeliness goals. Additionally, all 66 mid-cycle letters and 1 assessment followup letter were completed within timeliness goals.

2Q/2003: All quarterly assessment reviews, 42 annual public meetings, and 2 assessment followup letters were completed within timeliness goals.

1Q/2003: All 66 end-of-cycle meetings, annual assessment letters, and 22 annual public meetings were completed within timeliness goals.

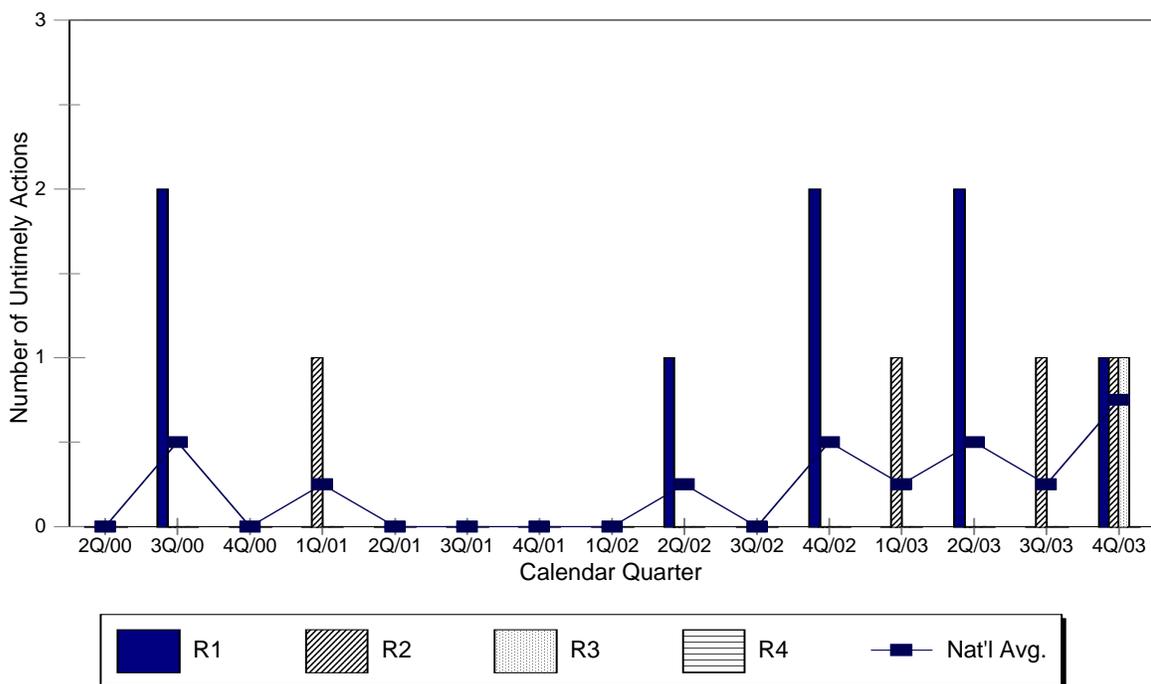
4Q/2002: All quarterly assessment reviews and 2 assessment followup letters were completed within timeliness goals.

The metric criterion was met based on the low and stable level of untimely actions.

AS-6 The Web Posting and Availability via ADAMS of Assessment Letters Is Timely

Definition: Review the posting of letters to the NRC's external Web site and availability in ADAMS and compare to the timeliness goals. Record the number of letters not available in ADAMS and number of letters not posted to the Web site within goals.

Criteria: IIPB posts assessment letters to the NRC's external Web site using the electronic version in ADAMS within 10 weeks after the end of mid-cycle and end-of-cycle assessment periods and 8 weeks after the end of intervening quarters.



Analysis:

4Q/2003: Three assessment followup letters were not posted to the Web within timeliness goals.

3Q/2003: All 66 mid-cycle letters were posted to the Web within timeliness goals. One assessment followup letter was not posted to the Web within timeliness goals.

2Q/2003: Two assessment followup letters were not posted to the Web within timeliness goals.

1Q/2003: All 66 annual assessment letters were posted to the Web within timeliness guidelines. One assessment follow-up letter was not posted to the Web within timeliness goals.

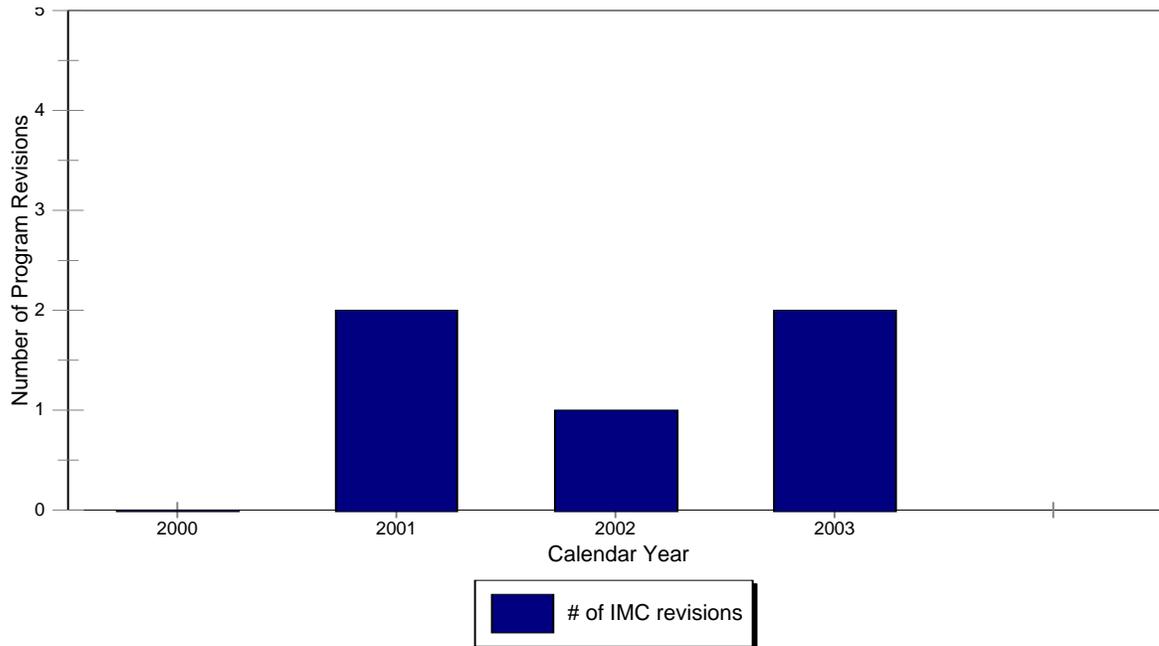
4Q/2002: Two assessment followup letters were not posted to the Web within timeliness goals.

The metric criterion was met because 94 percent of the assessment letters were posted within timeliness goals, with relatively few untimely postings. However, IIPB will undertake additional steps to ensure that assessment followup letters are posted to the Web in a timely manner. IIPB recently began requesting that the regional offices provide their input to the Action Matrix Summary Web page before posting this information publically.

AS-7 Assessment Program Procedures Are Stable Enough To Be Perceived as Predictable

Definition: Count the number of revisions to IMCs 0305 and 0350.

Criteria: Expect few revisions, with a stable or declining trend.

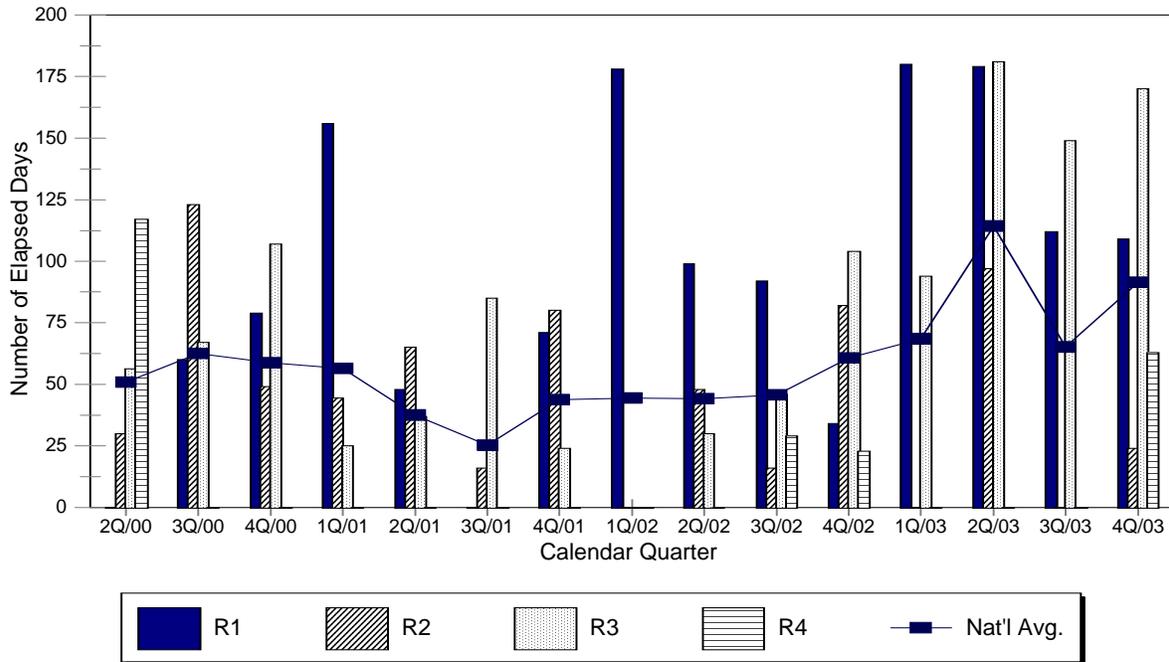


Analysis: During CY 2003, there was one revision to IMC 0305, which was issued on February 19, 2003, and one revision to IMC 0350, which was issued on December 31, 2003. A revision to IMC 0305 is planned for early in CY 2004. The metric criterion was met based on the stable trend of revising the assessment program documents once per year.

AS-8 The NRC's Response to Performance Issues Is Timely

Definition: Count the number of days between issuance of an assessment letter discussing an issue of more than very low safety significance and completion of the supplemental inspection (by exit meeting date, not issuance of the inspection report).

Criteria: Expect a stable or declining trend.



Comments: The data represent an average timeliness for the supplemental inspections completed in each region in any given quarter.

Analysis: The metric criterion was met based on the relatively stable long-term trend regarding the elapsed time between the issuance of an assessment letter and the completion of the corresponding supplemental inspection. However, there is some concern regarding the slight increase in elapsed time for the past three quarters. IIPB will continue to monitor this data set to determine if an adverse trend exists.

AS-9 The Agency Takes Appropriate Actions to Address Performance Issues for Those Licensees Outside of the Licensee Response Column of the Action Matrix

Definition: Solicit feedback on the appropriateness of regulatory attention given to licensees with performance problems via a survey question to both internal and external stakeholders.

Criteria: Expect a stable or improving perception.

Analysis: The industry and State respondents generally agreed that the NRC is taking appropriate actions for those plants that are outside of the licensee response column of the Action Matrix. One anonymous NRC staffer questioned the NRC's response to the Indian Point steam generator tube failure and the head degradation at DBNPS. The metric criterion was met based on a stable perception that the staff takes appropriate actions to address performance issues.

AS-10 Information Contained in Assessment Reports Is Relevant, Useful, and Written in Plain Language

Definition: Perform surveys to determine internal and external stakeholder views on assessment reports.

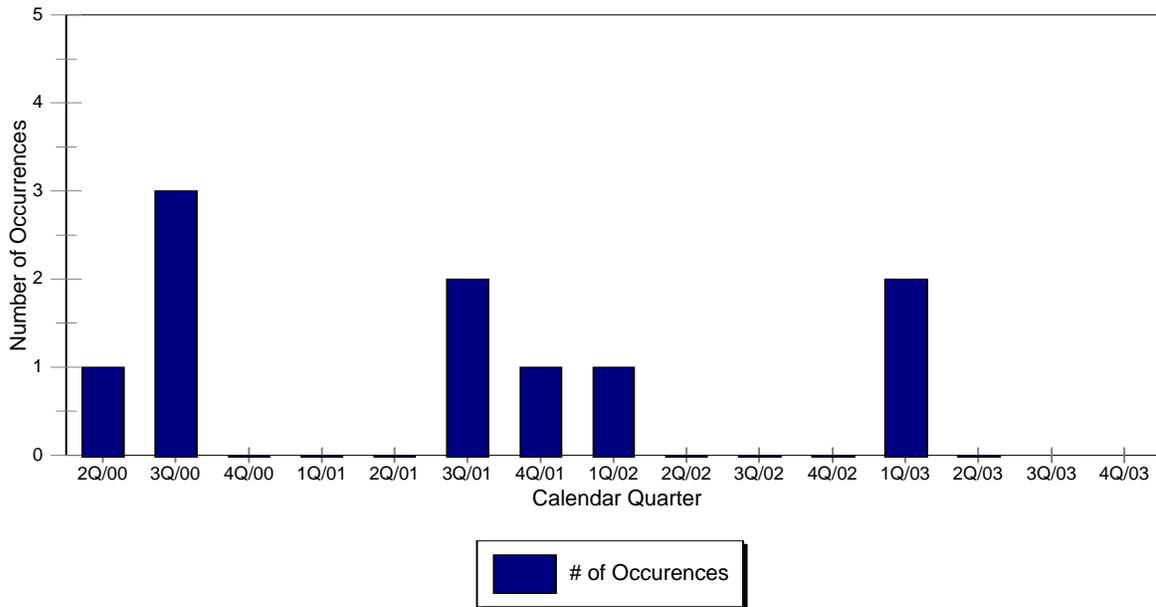
Criteria: Expect a stable or improving perception of the relevance, usefulness, and understandability of assessment reports.

Analysis: The industry respondents generally agreed that the information contained in assessment reports is relevant, useful, and written in plain language. One State respondent stated that the reports were initially stilted and unclear, but have continued to improve. One public interest group stated that the assessment letters contained too much boilerplate information. The metric criterion was met based on a stable perception of the relevance, usefulness, and understandability of assessment reports.

AS-11 Degradations in Plant Performance, as Measured in the Action Matrix, Is Gradual and Allows Adequate Agency Engagement of the Licensees

Definition: Track the number of instances each quarter in which plants move more than one column to the right in the Action Matrix (as indicated on the Action Matrix Summary).

Criteria: Expect few instances in which plant performance causes a plant to move more than one column to the right in the Action Matrix. Provide a qualitative explanation of each instance in which this occurs. Expect a stable or declining trend.



Analysis: During the period of October 2002 – December 2003, two reactor plant units moved more than one column to the right in the Action Matrix in a single quarter. Specifically, in 1Q/2003, Point Beach Units 1 and 2 moved from the regulatory response column to the multiple/repetitive degraded cornerstone column as a result of a red finding in the mitigating systems cornerstone. of the relevance, usefulness, and understandability of assessment reports. The metric criterion was met because the number of plants moving two or more columns to the right in the Action Matrix has been few and within the expected frequency.

O-1 Public Perceives the ROP To Be Predictable and Objective

Definition: Survey external stakeholders through a *Federal Register* notice asking if decisions are overly reliant on judgment, or not controlled by the process.

Criteria: Expect a stable or increasingly positive perception over time.

Analysis: A majority of respondents (primarily utilities and State agencies) believe that the ROP as a whole is predictable and objective, specifically mentioning the inspection planning and straightforward nature of inspection report writing as examples. The SDP appears to be the leading concern for all respondents in the area of predictability and objectivity. Public interest groups that addressed the ROP believe it is actually losing its objectivity and clarity. As a whole, the responses are similar to the surveys of previous years.

This metric met its criteria with a stable trend of positive perception.

O-2 NRC Perceives the ROP To Be Predictable and Objective

Definition: Survey internal stakeholders asking if decisions are overly reliant on judgment, or not controlled by the process.

Criteria: Expect a stable or increasingly positive perception over time.

Comment: Consistent with the biennial frequency prescribed by IMC 0307, the staff did not conduct an internal survey during this ROP cycle.

Analysis: Not applicable

O-3 Public Perceives the ROP To Be Risk-Informed

Definition: Survey external stakeholders through a *Federal Register* notice asking if ROP actions and outcomes are appropriately graded according to the significance of the issues at the plants.

Criteria: Expect a stable or increasingly positive perception over time.

Analysis: As with previous surveys, the overwhelming belief is that the portions of the ROP that are not risk-informed create a discontinuity in the system. The utility respondents believe that the deterministic nature of those cornerstones that are not risk-informed, and specifically SDPs, skews the perception of the actual significance of many findings. At the same time, some public interest groups believe that the deterministic approach is too subjective and, therefore, skews the perception of significance in the other direction. A majority of comments addressed the deterministic nature of portions of the ROP, and specifically SDPs, and while these comments are similar to those received in previous surveys, they are increasingly negative.

This metric did not meet its criteria due to an increasingly negative perception.

O-4 NRC Perceives the ROP To Be Risk-Informed

Definition: Survey internal stakeholders asking if ROP actions and outcomes are appropriately graded according to the significance of the issues at the plants. Report survey results by strategic performance area.

Criteria: Expect a stable or increasingly positive perception over time.

Comment: Consistent with the biennial frequency prescribed by IMC 0307, the staff did not conduct an internal survey during this ROP cycle.

Analysis: Not applicable

O-5 Public Perceives the ROP To Be Understandable

Definition: Survey external stakeholders through a *Federal Register* notice asking if they understand the process, procedures, and outputs, and if products are clear and written in plain English.

Criteria: Expect a stable or increasingly positive perception over time.

Analysis: A majority of respondents believe that the ROP is understandable. Inspection report clarity is mentioned as an example of a recent improvement. The SDP is a common example of the “less understandable” parts of the ROP. The utility respondents note that it is complex and requires technical background, but is not beyond what might be expected. Others (including some State agencies and utilities) believe the SDP is complicated and not always reasonably clear. Additionally, some public interest groups stated that the subjectivity and complexity directly erode the understandability of the ROP. These comments are similar to those received in previous surveys, and most respondents recognize that the need to be objective (and sometimes complex) must be balanced with the goal to be understandable.

This metric met its criteria with a stable trend of positive perception.

O-6 NRC Perceives the ROP To Be Understandable

Definition: Survey internal stakeholders asking if they understand the process, procedures, and outputs, and if products are clear and written in plain English.

Criteria: Expect a stable or increasingly positive perception over time.

Comment: Consistent with the biennial frequency prescribed by IMC 0307, the staff did not conduct an internal survey during this ROP cycle.

Analysis: Not applicable

O-7 Public Perceives That the ROP Maintains Safety

Definition: Survey external stakeholders through a *Federal Register* notice asking if the ROP adequately ensures that plants are being safely operated and maintained.

Criteria: Expect a stable or increasingly positive perception over time.

Analysis: Similar to previous surveys, the utility and State agency respondents (on average) believe that the ROP maintains safety, while many public interest groups continue to believe that the ROP allows licensees to operate with less oversight and control. This metric was not met last year as a result of a decreasing positive perception based primarily on the findings at DBNPS. However, this survey had fewer mentions of DBNPS and numerous respondents cited the bottom head issue at South Texas Project as an example of ROP success. As a whole, compared to last year, this survey had more positive comments about ROP safety and the current safety trends within the nuclear industry.

This metric met its criteria with a trend of increasingly positive perception.

O-8 NRC Perceives That the ROP Maintains Safety.

Definition: Survey internal stakeholders.

Criteria: Expect a stable or increasingly positive perception over time.

Comment: Consistent with the biennial frequency prescribed by IMC 0307, the staff did not conduct an internal survey during this ROP cycle.

Analysis: Not applicable

O-9 Analysis of NRC's Responses to Significant Events

Definition: Review reports from incident investigation teams (IITs) and augmented inspection teams (AITs) to collect lessons learned regarding ROP programmatic deficiencies (i.e., did the baseline inspection program inspect this area? did the SDP accurately characterize resultant findings?). IITs already have the provision to determine NRC program deficiencies. AITs will be reviewed by IIPB to identify any weaknesses.

Criteria: Expect no major programmatic voids.

Analysis: No IITs were conducted during the 2003 ROP cycle. One AIT was conducted at Peach Bottom. IIPB reviewed the Peach Bottom AIT report, and did not identify any ROP programmatic deficiencies. No feedback forms were received for IP 93800, "Augmented Inspection Team." Based on two feedback forms, IIPB revised IP 71153, "Event Followup," with regard to (1) the risk metrics for events (conditional core damage probability, or CCDP) and degraded conditions (incremental CCDP) and (2) examples of events in cornerstones outside of reactor safety.

This metric was not met last year because of the programmatic deficiencies identified by the DBLLTF, but was met in CY 2003 based on no additional programmatic voids and significant staff progress in addressing the DBLLTF recommendations.

O-10 Analysis of Significant Events

Definition: Annually review all accident sequence precursor (ASP) events that have a risk significance of more than 10^{-6} to identify any ROP programmatic voids (i.e., did the baseline inspection program inspect this area? did the SDP accurately characterize resultant findings?).

Criteria: Expect no major programmatic voids.

Analysis: The NRC's Office of Nuclear Regulatory Research (RES) compared ASP results and SDP evaluations for ASP analyses completed during this assessment period. In so doing, the RES staff did not identify any significant differences between the ASP results and the SDP findings. Several ASP analyses had previously been initiated and were still in progress at the time of this assessment. The ASP findings for DC Cook low ESW flow were consistent with the SDP, but there were differences attributable to several factors. However, the SDP result was within the uncertainty bounds of the ASP results.

This metric met its criteria of no identified major programmatic voids.

O-11 Public Perceives the ROP To Be Effective, Efficient, and Realistic

Definition: Survey external stakeholders through a *Federal Register* notice asking specific questions (based on the NRC Strategic Plan) regarding whether the ROP is effective, efficient, and realistic.

Criteria: Expect a stable or increasingly positive perception over time.

Analysis: In general, and with only a few exceptions, the respondents believe that the ROP is effective, efficient, and realistic. Specifically, utility respondents agree that the ROP is both effective and realistic, but believe the staff can increase its efficiency with better communication early in the process of determining issue significance and the implementation of certain initiatives such as licensee self-assessment. Some public interest groups argue that the ROP is not effective, efficient, or realistic because of incomplete inspection effort, incomplete lessons learned, and insufficient detail in documentation. As in previous surveys, the most significant negative theme relates to the effectiveness and efficiency of the SDP.

This metric was not met last year because of an apparent increase in negative perception (compared to previous years). However, this metric met its criteria this year based on an increasing positive perception compared to last year and a stable perception over time.

O-12 NRC Perceives the ROP To Be Effective, Efficient, and Realistic

Definition: Survey internal stakeholders asking specific questions (based on the NRC Strategic Plan) regarding whether the ROP is effective, efficient, and realistic.

Criteria: Expect a stable or increasingly positive perception over time.

Comment: Consistent with the biennial frequency prescribed by IMC 0307, the staff did not conduct an internal survey during this ROP cycle.

Analysis: Not applicable

O-13 Public Perceives That the ROP Enhances Public Confidence

Definition: Survey external stakeholders through a *Federal Register* notice asking if the ROP enhances public confidence.

Criteria: Expect a stable or increasingly positive perception over time.

Analysis: Many of the utility and State agency respondents believe that the ROP provides the right framework and mechanisms to enhance public confidence. The concern continues to be the overwhelming lack of public participation, despite the efforts of the ROP to provide the right communication channels and a relatively consistent message. One public interest group noted that while this effort to increase communication is commendable, some of the NRC's efforts to enhance public confidence are unsuccessful. Specifically, they cited the difficulty of finding information on the Web pages and the increasing complexity of various aspects that seem to move the process further from understandability.

This metric met its criteria with a stable perception.

O-14 Opportunities for Public Participation in the Process

Definition: Survey external stakeholders through a *Federal Register* notice asking if there are sufficient opportunities for the public to participate in the process.

Criteria: Expect positive responses or an improving trend.

Analysis: Almost every response that addressed this issue stated that the ROP provides more opportunities for the public to participate than ever before. Many continued to address the fact that the public does not take advantage of this opportunity and, therefore, much of its benefit is lost.

This metric met its criteria with a trend of increasingly positive perception.

O-15 Public Perceives the NRC To Be Responsive to Its Inputs and Comments

Definition: Survey external stakeholders through a *Federal Register* notice asking if the NRC is responsive to the public's inputs and comments.

Criteria: Expect positive responses or an improving trend.

Analysis: As in previous surveys, utility respondents believe that the NRC is responsive to input and comments, while many other respondents feel that the NRC needs to improve on this aspect of the ROP. A large number of respondents (including some utilities) feel that the NRC is slow to respond, if it responds at all, to many comments and inputs. Numerous survey responses call for a formal system for public input and comment, as well as a feedback mechanism from the NRC. Many feel that their comments are submitted and never acted on because they get no formal response or feedback from the NRC. A few respondents even submitted comments labeled as the same one from the last survey because they believe they were not addressed. At the same time, many of the comments on NRC inaction relate to policies and comments that the NRC considered but decided not to adopt.

This metric did not meet its criteria due to an increasingly negative perception.

O-16 Public Perceives That the ROP Is Implemented as Defined

Definition: Survey external stakeholders through a *Federal Register* notice asking if the ROP has been implemented as designed.

Criteria: Expect a stable or increasingly positive perception over time.

Analysis: As in previous surveys, most respondents believe that the NRC is implementing the ROP as defined. Utility respondents expressed concern regarding the consistent application of the ROP across the various regions, as well as some concern regarding the clarity of a couple of PIs. Some public interest groups cited examples that they believe to be inconsistent application of the ROP (compared to the guidance documents), such as coping measures to overcome not completing the baseline inspection requirements.

This metric met its criteria with a stable positive perception.

O-17 Public Perceives That the ROP Reduces Unnecessary Regulatory Burden

Definition: Survey external stakeholders through a *Federal Register* notice asking if the ROP reduces unnecessary regulatory burden.

Criteria: Expect a stable or increasingly positive perception over time.

Analysis: A majority of respondents believe that the ROP does reduce unnecessary regulatory burden. Some public interest groups still feel that the ROP goes too far in this vein and, consequently, sacrifices some safety. Utility respondents believe that the NRC can continue to reduce unnecessary regulatory burdens with improved SDPs and practices within the SDP process.

This metric met its criteria with a stable perception.

O-18 Public Perceives That the ROP Does Not Result in Unintended Consequences

Definition: Survey external stakeholders through a *Federal Register* notice asking if the ROP results in unintended consequences.

Criteria: Expect a stable or increasingly positive perception over time.

Analysis: Similar to previous surveys, many respondents stated that numerous unintended consequences result from the ROP. The identified consequences varied according to whether the respondent was a utility or public interest group, but the examples cited were similar to those cited in the previous survey. The same unintended consequences continue to arise as a result of undue concern regarding changing preliminary SDP colors and concerns about manipulation of PI results.

This metric did not meet its criteria because of the stable but negative perception.

ROP Communication Activities

Communicating the activities of the Reactor Oversight Process (ROP) in a comprehensive and comprehensible way to all internal and external stakeholders of the U.S. Nuclear Regulatory Commission (NRC) is vital in order for the NRC to develop and maintain trust and confidence, encourage participation, and improve the regulatory process. The NRC staff continues to pursue a variety of communication initiatives to ensure that all stakeholders have access to ROP information and results, as well as an opportunity to provide input. These include the following examples (among others):

- publishing a *Federal Register* notice (FRN) to solicit public feedback on the ROP
- improving the ROP Web page
- continuing to improve reactor inspector initial and continuing training
- continuing to implement the inspection procedure feedback process
- implementing an electronic inspector newsletter
- developing information technology (IT) initiatives for inspectors
- publishing NUREG-1649, "Reactor Oversight Process"
- providing direct feedback from the ROP Web page

The staff effectively implemented the ROP Communication Plan in calendar year (CY) 2003 and continued to focus on stakeholder involvement. The following paragraphs discuss several highlights from this past year.

Internal Stakeholder Interface

The program office staff continued to conduct biweekly conference calls with regional division- and branch-level management to discuss current issues associated with the ROP. In addition, the program office staff met periodically with regional managers to discuss more complex ROP topics and issues. The program office staff also conducted visits to the regions to give regional staff and management the opportunity to discuss the status of the ROP and current issues.

The ROP feedback process continues to provide a useful means for the NRC staff to identify concerns or issues and to recommend improvements related to ROP policies, procedures, or guidance. Feedback timeliness has improved significantly and, unlike previous years, the regional staff appears to be satisfied with the feedback process response time, based on recent discussions with regional feedback coordinators. The staff had planned to complete further enhancements to the feedback process during CY 2003, but these were put on hold as a result of competing priorities. The staff now expects to implement these enhancements, which include providing users with the ability to view open and closed feedback forms, search capability, and electronic submission of feedback forms, in CY 2004. During this period, the staff received 123 feedback forms and closed 132. Attachment 3 to this paper provides further detail concerning the number of feedback forms per program document, in the context of performance metric IP-3.

External Stakeholder Interface

The NRC staff continued to conduct routine, public working-level meetings with the Nuclear Energy Institute (NEI), the industry, and other stakeholders to discuss the status of ongoing

refinements to the ROP on an approximate monthly basis. In particular, the staff held several public meetings to discuss the status of the Mitigating Systems Performance Index (MSPI).

The staff also sponsored the annual Regulatory Information Conference (RIC) in 2003 to provide opportunities for NRC management, the NRC's regulated utilities, and other interested stakeholders to meet and communicate directly regarding safety initiatives and regulatory trends, with a specific session dedicated to ROP implementation. In addition, the staff issued an FRN on November 5, 2003, to obtain external stakeholder input regarding the efficacy of the ROP, as further discussed below. The staff had considered sponsoring a separate ROP-specific workshop in 2003, but elected not to do so based on competing priorities and insufficient resources. However, the staff included a specific question in the November 2003 FRN to ascertain whether an ROP workshop would be beneficial. While most respondents did not address this question specifically, those who did noted that there would be some potential interest and benefit. The staff once again sponsored a specific session at the RIC in 2004 to discuss ongoing ROP issues, and will evaluate the need and feasibility for a separate ROP-specific workshop in 2005.

Internal and External Surveys

Consistent with the biennial frequency prescribed by Inspection Manual Chapter (IMC) 0307, "Reactor Oversight Process Self-Assessment Program," the staff did not conduct an internal survey during this ROP cycle. However, the staff did analyze the survey comments submitted by internal stakeholders during the survey conducted in CY 2002. Using the computer-based survey, the internal stakeholders selected from five possible answers to several specific questions, but also had the opportunity to amplify their responses or make additional comments. The internal ROP survey collected 236 responses, of which 72 contained written comments.

Based on a review of the written comments, the staff identified several repetitive themes, including public access to information, cross-cutting issues, significance determination process (SDP), procedure usability and accuracy, ROP resources, inspection approach, feedback process, and performance indicators (PIs). The analysis resulted in 10 recommendations based on the repetitive themes, and the staff immediately implemented 7, including not issuing inspection procedures without prior appropriate training and adopting 10 standard expectations for the presentation of procedure content. The staff also initiated feedback forms as a result of this analysis and entered them into the ROP feedback process to ensure that they were adequately addressed. The staff has revised (or is in the process of revising) several program documents to address the feedback, and has already closed many of the resultant feedback forms. The staff plans to conduct the next internal survey in the Fall of 2004.

After last year's external survey, the staff received feedback that some stakeholders were not informed of the FRN in a timely manner or were not given adequate time to prepare their responses. To address this concern, and in an ongoing effort to improve communication with NRC stakeholders, the staff called the respondents from the prior year to inform them that the new FRN had been issued. The staff also created a brochure containing the external survey, and mailed approximately 700 copies directly to stakeholders to solicit their responses. In addition, the staff placed a direct link to the survey information on both the ROP Web page and the "Documents for Comment" page of the NRC's external Web site to alert external

stakeholders that the staff was seeking comments on the implementation of the ROP. The staff also gave stakeholders additional time to comment on the ROP, issued a press release, and placed a copy of that release on the NRC's external Web site. In addition, the staff acknowledged receipt of each FRN response via correspondence indicating the staff's plans to address the comments in this Commission (SECY) paper, as appropriate.

As previously indicated, the staff issued an FRN on November 5, 2003, to obtain external stakeholder input regarding the efficacy of the ROP. That FRN requested responses to 20 questions corresponding to specific ROP performance metrics defined in IMC 0307, and solicited interest in a possible future workshop. The NRC received comments from the following 18 individuals and organizations (listed in chronological order as received, with the corresponding Accession numbers for the official record copy of the related response, as it appears in the NRC's Agencywide Documents Access and Management System (ADAMS)):

- Union of Concerned Scientists (ML033490375)
- Pennsylvania Department of Environmental Protection (ML033430324)
- Entergy Operations (ML040050414)
- Nuclear Energy Institute (ML040050417)
- Nuclear Management Company (ML040050419)
- Dominion Resources Services (ML040050422)
- Tennessee Valley Authority (ML040050461)
- South Texas Project Nuclear Operating Company (ML040050464)
- ScienTech (ML040050467)
- Illinois Emergency Management Agency (ML040050470)
- Three Mile Island Alert (ML040050472)
- North American Water Office (ML040050481)
- PSEG Nuclear (ML040080767)
- Anonymous NRC staff member (ML040080766 and ML040090250)
- Strategic Teaming and Resource Sharing (ML040090252)
- Southern California Edison (ML040090253)
- The State of Arizona, Division of Emergency Management (ML040130732)
- Region IV Utility Group (ML040230543)

In addition to these formal FRN responses, Mr. Riccio from Greenpeace provided specific comments when he briefed the Commission on May 15, 2003. As the Commission requested in a staff requirements memorandum (SRM) dated June 10, 2003 (M030515), the staff evaluated Mr. Riccio's comments along with other stakeholder comments while performing this annual ROP self-assessment. The staff's analysis of the specific responses appears in the ROP performance metrics report in Attachment 3 and the applicable portions of the program area discussions and status of previous issues in Attachments 1 and 2, respectively.

The survey responses were generally in line with responses from previous years, as were the number and distribution of the responses. Approximately half of the 18 responses came from NEI or utilities endorsing the NEI response, while 3 came from State agencies and 5 (including Mr. Riccio's comments) came from public interest groups. In addition, for the first time since the inception of the ROP, one of the FRN responses came from an anonymous NRC staff member. The actual content of the responses was generally positive, with concerns being raised specifically about SDP complexity and subjectivity, the effectiveness of the PI program, NRC responsiveness or lack thereof, and other perceived needed improvements to the ROP.

Only 30 percent of the responses directly answered the survey questions; most commented on issues that directly related to the respondent's own interests or endorsed the comments in another response. Future surveys may need to account for this anomaly by requesting "multiple choice" answers to questions (similar to the internal survey) and allowing for a final open-ended comment question.

The two most troubling aspects of the survey results are the anonymous NRC employee submission and the perceived lack of NRC response to comments. The NRC employee stated that he or she submitted comments via the external survey under the belief that he or she must remain anonymous because management does not want internal criticism; the comments must be public because the feedback system does not work; and after 4 years of ROP implementation, conclusions can reasonably be drawn. Additionally, a common theme in many responses was the apparent lack of NRC response to comments. Many of those surveyed believe the NRC has ignored their previous comments or, at the very least, been slow to act, and that the respondent has no way to obtain feedback or responses from the NRC.

The staff was surprised by both of these issues. The public outreach and stakeholder involvement in the decision making process during development and implementation of the ROP have both been unprecedented, and the staff continues to focus on stakeholder involvement. In addition, the staff implemented several initiatives to improve the effectiveness of the external survey (as previously discussed), and addresses the major comments in the annual self-assessment each year. The staff believes that there is a distinct difference between being unresponsive and not adopting all recommended improvements to the program. The staff must carefully consider the appropriate balance between all stakeholders points of view and the goals of the ROP when considering any significant changes to the process. The staff will continue to acknowledge each FRN response, indicating the staff's plans to address the comments in this SECY paper, as appropriate. However, the staff does not have the resources to provide a direct reply to each FRN response detailing how it handled the respondent's specific comments.

Inspector Training Program Improvements

During CY 2003, the staff continued its efforts to improve the initial and continuing inspector training programs as described in IMC 1245, "Qualification Program for the Office of Nuclear Reactor Regulation [NRR] Programs." Specifically, the staff updated several appendices to IMC 1245 relating to initial qualification, including the basic-level training and certification journal, the general proficiency training and qualification journal, and several specialized inspector technical proficiency training and qualification journals. Based on feedback received during the 2002 internal survey, the staff also implemented a policy to provide training to inspectors before issuing new or significantly revised guidance.

The staff further improved the overall inspector training program in 2003 by establishing the IMC 1245 Management Steering Group to provide a structured means for monitoring and maintaining the initial inspector training and qualification program, and for monitoring and maintaining the knowledge and skills of qualified inspectors. The primary goal of IMC 1245 is to produce and maintain well-qualified, competent inspectors. Continuing and refresher training, as defined in IMC 1245, is used to refresh and improve the inspector's knowledge and job-related skills to meet the needs of the inspection program. While the program office has

the primary responsibility for IMC 1245, a partnership between the program office and the regions is needed to create a training and qualification program that is of high quality and remains effective. Experience has shown that this partnership has been highly effective in establishing and maintaining a quality qualification program.

The staff also greatly improved the continuing inspector training program by implementing a new method for providing effective and efficient training to all inspectors through Web-based read-and-sign courses. The Web-based read-and sign-training initiative offers the following benefits:

- Training on special or emergent topics can be developed and completed in a timely manner.
- Training can be interactive and thought provoking.
- Training can be completed at the inspector's convenience.
- Training materials can be distributed electronically.
- Training records are easily recorded and maintained.

In CY 2003, the staff developed and distributed three read-and-sign training courses to address specific recommendations from the Davis-Besse Lessons Learned Task Force (DBLLTF) regarding Inspection Procedure (IP) 71152, "Identification and Resolution of Problems"; lessons learned from the Columbia shuttle accident; and boric acid corrosion and primary water stress corrosion cracking (PWSCC). Specifically, the staff revised IP 71152 to provide longer-term followup of issues that have not progressed to findings. Along with revising the procedure, the staff developed Web-based read-and-sign training to educate inspectors about the changes to the procedures and the new associated inspection activities.

The staff used the Web-based read-and-sign training concerning the Columbia shuttle accident to illustrate the importance of maintaining a questioning attitude toward safety and the negative consequences that can potentially occur when the questioning attitude is lost or compromised. This training provided examples of how issues concerning an organization's safety culture can lead to technological failures, and provided insights into investigation techniques that can be used to assess safety-significant issues or events. Finally, this training illustrated the importance of a robust corrective action program, and highlighted the corrective action program weaknesses that contributed to the shuttle accident.

The Web-based read-and-sign training concerning boric acid corrosion and PWSCC familiarized regional inspectors with the NRC's current understanding of and approach to monitoring these destructive forces. The training stressed that previous assumptions may not be correct in stating that reactor coolant system leakage onto a hot surface would boil off and not cause corrosion. The NRC now recognizes that the previous assumptions did not represent the total range of situations under which boric acid corrosion could occur, so the training was intended to emphasize that boric acid could be much more active than was assumed in the past. The staff is currently developing inspection procedures to provide detailed guidance on how to inspect for boric acid corrosion and stress corrosion cracking, and inspectors will receive training before those new procedures are issued.

The staff is also in the process of developing and distributing ROP refresher training for NRC management and staff and expects to complete the training by the end of CY 2004. The IMC 1245 Management Steering Group will continue to monitor the inspector training process,

and additional Web-based read-and-sign and procedure-specific training is anticipated in CY 2004.

ROP Web Page Developments

The staff continued to improve the ROP Web pages to ensure that they are useful tools for communicating accurate and timely ROP information to all stakeholders. The most important step taken was the issuing of IMC 0306, "Information Technology Support for the Reactor Oversight Process," which acts as the guidance document for ROP-related information technology. This manual chapter provides information and processes related to the timely and accurate input and utilization of both the Reactor Program System (RPS) and the ROP Web page. Most notably, IMC 0306 establishes a formal process for evaluating and certifying the data compiled for assessing plant performance.

The staff also used the ROP Web page to disseminate useful information to the public as needs warranted. The public Web pages have provided information concerning the developments and progress at the Davis-Besse Nuclear Power Station, as well as other short-fused issues. The Web page now contains a section dedicated to the Browns Ferry 1 recovery effort in order to ensure that information is readily available. Also, the staff utilized the ROP Web page as an additional method of delivering the annual external survey to stakeholders and has continued to maintain a section devoted to the status of the MSPI activities. In addition, the staff continued to utilize the direct feedback mechanism from the ROP Web page and has responded to several questions and concerns regarding the ROP.

The staff facilitated the recent shift in responsibility for PI collection and maintenance from NEI to the Institute of Nuclear Power Operations (INPO) and its Consolidated Data Entry (CDE) System. The first quarterly PI submittal using the CDE system was successfully completed for all plants in January 2004. This change in responsibility is among the efforts to continually improve and enhance the collection and distribution of data and minimize redundant data collection processes. Efforts are ongoing to increase both the accuracy and automation of the ROP Web page to maximize its uses and benefits.

The staff also completely redesigned and reconstructed the internal ROP Web page, known as "ROP Digital City," to better meet the needs of internal stakeholders and provide maximum flexibility as a communication tool. This Web page now has an entirely different format, which allows the main page to act as a hub to the various types of available information. Additionally, the staff added a new bulletin style area, known as "What's New," to allow for simple, timely information and updates about the page and the program. The Web page also provides direct links to other Web sites in cases where information is duplicated on those other sites to prevent inaccuracies associated with the disparate update schedules for the various sites. Most importantly, the internal ROP Web page is now being employed for direct training and information. The site is now the jump-off point for the new read-and-sign training program and contains a quiz on the *Code of Federal Regulations* (CFR), which is used in inspector qualifications. The new information initiatives include access to the Inspector Newsletter, SDP Active Issues matrix, and Reactor Operating Experience. The staff will continue to develop new methods and enhance existing assets to further maximize the potential and effectiveness of the internal ROP Web page.

Information Technology Initiatives for Inspectors

The staff is currently developing an Inspector Electronic Support System (IESS) that will transfer knowledge organized to meet inspectors' needs. The organized structure will enhance the efficiency of inspection preparation. Some of the IESS components include an inspector community bulletin board, industry lessons learned, operating experience tailored for inspection procedures, and sources of technical information. The inspector community bulletin board is also expected to enhance internal communication among inspectors and sharing of practices across regional organizations. The IESS will have an inspector task focus guided by the Baseline Inspection Program.

One of the first IESS components to be implemented was the inspector newsletter. In January 2002, the Inspection Program Branch (IIPB) in NRR's Division of Inspection Program Management issued the first of several electronic inspector newsletters. The inspector newsletter differs from previous newsletters in that instead of communicating ROP policy, as was needed at the start of the ROP, this newsletter shares best inspector practices. The staff established an editorial board, which consists of at least one regional branch chief from each region's Division of Reactor Safety and/or Division of Reactor Projects, and several IIPB staff members who serve as managing and technical editors. The editorial board recommends articles, solicits inspector input and feedback, and approves the contents of the newsletter. The newsletter is issued bimonthly and each issue is approximately 6–8 pages in length. The content of the newsletter consists of articles that are of value to inspectors, technical best practices, an operating experience corner, and several human interest stories. IIPB has received extremely positive feedback from inspectors on the usefulness of the newsletter.

The IIPB staff also continued to collaborate with the Office of the Chief Information Officer (OCIO) to introduce and leverage new technologies and to share regional practices. Regions I and III have provided a resident and region-based inspector to participate in OCIO-sponsored quarterly focus meetings on a regular basis. The regional participants have added tremendous value to these meetings by making presentations to the group on the use of personal digital assistants (PDAs), pen scanners, and pen tablets and by voicing concerns and issues that pertain to all inspectors.

In addition, the IIPB staff started two pilots during CY 2003. One is the use of pen tablets for inspectors, and the other is an assessment of a digital pen for use by inspectors. Previous IIPB pilots of PDAs and pen scanners clearly demonstrated the usefulness of these tools for inspectors. The IIPB staff recommended that regions utilize a "cafeteria style" approach in providing these tools to inspectors, giving tools to inspectors who request them rather than force fitting to all inspectors. NRR will continue to take the lead in developing pilots that may be of benefit to inspectors. Regions are required to request funding for inspectors' IT tools through the budget process. However, in FY 2003, IIPB was able to obtain unplanned funding from NRR to distribute pen scanners to the regions.

ROP Self-Assessment and Independent Evaluations

The objectives and details of the Reactor Oversight Process (ROP) Self-Assessment Program are contained in Inspection Manual Chapter (IMC) 0307. The staff of the U.S. Nuclear Regulatory Commission (NRC) revised IMC 0307 on December 12, 2003, to improve the efficiency and effectiveness of the ROP Self-Assessment Program by providing greater detail related to documenting the results of the annual inspection procedures reviews, and to modify some metrics to better align with the operating plan metrics and other program commitments. Attachment 3 to this paper provides the 2003 annual self-assessment of ROP performance metrics.

In addition to the ROP Self-Assessment Program, several independent evaluations have been performed since the inception of the ROP to analyze its effectiveness and recommend improvements. Most recently, the Office of Management and Budget (OMB), the Office of the Inspector General (OIG), the Advisory Committee on Reactor Safeguards (ACRS), the Davis-Besse Lessons Learned Task Force (DBLLTF), and the Significance Determination Process (SDP) Task Group have performed ROP evaluations. In general, these evaluations have provided favorable results, but have also suggested potential areas of improvement for the staff to consider, as follows.

Office of Management and Budget Program Assessment Rating Tool (PART) Results

The OMB completed its review of the Reactor Inspection and Performance Assessment program (i.e., the ROP) using the Program Assessment Rating Tool (PART). The PART is a program evaluation tool, which was developed and implemented by OMB to evaluate the management of all Federal programs in a consistent and objective manner. The Reactor Inspection and Performance Assessment program received a score of 89 percent, which corresponds to an "Effective" rating for the management of the program, the highest rating possible under the PART system (reference Accession No. ML031500382 in the NRC's Agencywide Documents Access and Management System (ADAMS)). Of the 234 Federal programs evaluated by OMB last year, only 6 percent received an "Effective" rating.

Davis-Besse Lessons Learned Task Force (DBLLTF) Recommendation Status

Soon after the discovery of the degraded reactor pressure vessel (RPV) head at the Davis-Besse Nuclear Power Station in March 2002, the NRC's Executive Director for Operations (EDO) directed the staff to establish a task force to independently evaluate the agency's regulatory processes related to ensuring the integrity of the RPV heads in the Nation's nuclear power plants. The resultant DBLLTF was chartered to identify and recommend areas for improvement that may be applicable to either the NRC or the nuclear industry. The DBLLTF's report, issued on September 30, 2002, contained more than 50 recommendations, many of which were associated with the ROP.

As a result of the DBLLTF's recommendations, the staff has made several changes to the ROP and many more are underway. The staff made these changes to enhance the NRC's ability to detect declining plant performance, including the specific issues that have been identified at the Davis-Besse plant. The changes completed to date include modifying the inspection program to help identify negative equipment performance trends, enhancing inspector training, and

better tracking and managing resident inspector staffing. Other ROP changes are ongoing or under evaluation.

The DBLLTF's recommendations resulted in several changes to the Baseline Inspection Program. First, the staff made significant changes to Inspection Procedure (IP) 71152, "Identification and Resolution of Problems." Specifically, these changes include establishing a semiannual trend review, performed by the resident inspectors, which will focus on declining equipment performance trends. Second, the staff added a requirement to require mandatory screening of all items in the licensee's corrective action program. Third, the staff issued a temporary instruction to review licensees' inspection activities related to the RPV head and vessel head penetration nozzles. In addition, the staff increased inspection focus on outage activities and modifications deferred by the licensee. Actions not yet completed include a review of previously canceled inspection procedures and better integration of operating experience into the inspection program.

The staff also developed a new Web-based "read-and-sign" training process to provide a vehicle for more timely dissemination of information to the inspection staff. During calendar year (CY) 2003, the staff implemented the first three read-and-sign training modules. One module concerned the effects of boric acid corrosion, another was associated with the changes made to IP 71152, and the third dealt with the importance of maintaining a questioning attitude toward safety (using the Columbia Space Shuttle accident as a vehicle for reinforcing this message). A review of inspector refresher training requirements is ongoing, as is development of a new training course on root cause evaluation.

The staff also enhanced the program management aspects of the ROP. For example, the staff revised IMC 0350, "Oversight of Operating Reactor Facilities in an Extended Shutdown as a Result of Significant Performance Problems," to provide more structured guidance for managing NRC resources devoted to plants in extended shutdown as a result of performance issues. The staff is also developing enhanced metrics to track resident inspector staffing at each of the operating reactor sites.

Further details on specific DBLLTF recommendations are included in the relevant program area discussions in Attachment 1 and the status of previous issues in Attachment 2. The status of the DBLLTF recommendations is also included in the Director's Quarterly Status Report to ensure continued management attention (reference ADAMS Accession No. ML040140030).

Office of the Inspector General Audit Activity

The OIG completed an audit of the SDP in 2002, as documented in OIG-02-A-15, "Review of NRC's Significance Determination Process," dated August 21, 2002. In that report, the OIG recommended various refinements to help ensure the successful implementation of the SDP process. The audit yielded 11 specific recommendations, which the staff incorporated into the SDP Improvement Plan for tracking purposes. The staff has since resolved all recommendations as to expectation, tracking, and completion dates, with five recommendations fully completed. Several of the OIG recommendations are further discussed in the SDP program area discussion in Attachment 1 and the status of previous issues in Attachment 2.

The OIG is currently performing an audit of the ROP Baseline Inspection Program. In addition to replying directly to the OIG regarding any identified recommendations or concerns, the staff expects to address the resultant OIG recommendations in the next annual ROP self-assessment.

Advisory Committee on Reactor Safeguards

During CY 2003, the staff continued to interact with the ACRS on matters related to the ROP, such as the Industry Trends Program, the MSPI pilot program, the Construction Inspection Program, and other ROP initiatives. The staff last briefed the ACRS regarding their concerns with the ROP on March 6, 2003. Following that briefing, the ACRS forwarded a letter to the Commission, dated March 13, 2003, concluding that the staff and ACRS still have certain disagreements. The staff responded to that letter on April 29, 2003, agreeing that the ACRS concerns warranted further consideration and would continue to be evaluated as part of the ongoing self-assessment process (reference ADAMS Accession No. ML030980658). The staff noted that the specific issues presented in the ACRS letter of March 13, 2003, will serve as the basis for further discussion with the ACRS and potential revisions to the ROP. Several of the ACRS concerns are discussed in the program area discussions in Attachment 1 and the status of previous issues in Attachment 2. At this time, the staff has not planned any additional meetings or correspondence with ACRS.

Regulatory Impact Summary

On December 20, 1991, the Commission directed the staff to develop a process for obtaining continual feedback from licensees and to report the feedback to the Commission each year. In response, the staff implemented the regulatory impact process in October 1992. This feedback process requires the regional division directors and their deputies to solicit informal feedback from their licensee counterparts during routine visits to reactor sites. Regional managers then evaluate this feedback to identify concerns requiring prompt action and then forwards the related feedback to the Office of Nuclear Reactor Regulation (NRR). NRR then performs an integrated evaluation of regional feedback and reports the results to the Commission.

Although NRR reported previous results to the Commission by separate correspondence, the staff plans to consolidate future reporting of regulatory impact results into this Commission paper to gain staff efficiency. The detailed results of the most recent regulatory impact analysis were sent to the Commission in SECY-03-0221, "Annual Report on Feedback from Licensees Regarding the Impact of NRC's Activities on Licensees' Operations," on December 22, 2003 (reference ADAMS Accession No. ML033430115).

Other Internal Evaluations

In 2002, the EDO directed the staff to establish a task group to perform an independent and objective review of the SDP. This review was prompted, in part, by issues described in a differing professional opinion (DPO) panel response, dated June 28, 2002, and the OIG audit report, dated August 21, 2002. The overall objective of the SDP Task Group was to review the issues raised in both the DPO panel response and the OIG audit report and provide observations, conclusions, and recommendations to address the underlying concerns, including

whether the current reactor safety Phase 2 SDP approach should be continued, modified, or replaced. The SDP Task Group concluded that the SDP, including the Phase 2 process, had generally succeeded in meeting the ROP objectives of providing a more objective, scrutable, and risk-informed process. The Task Group further provided 30 recommendations, which were generally aimed at improving the risk-informed Phase 2 evaluations using the risk-informed inspection notebooks. A notable recommendation was to develop pre-solved Phase 2 tables, which would eliminate the routine use of the risk-informed Phase 2 notebooks. To date, the staff has incorporated 16 Task Group recommendations into the SDP process. The remaining recommendations are tracked using the SDP Improvement Plan.

In addition, late in CY 2001, the staff formed the Efficiency Focus Group (EFG) to identify and develop possible resource efficiencies in the ROP. After evaluating a number of ideas, the focus group selected two suggestions for near-term implementation. Specifically, those recommendations are to (1) explore less resource-intensive alternatives to the annual performance assessment meeting for plants in the licensee response column of the Action Matrix, and (2) review the baseline inspection procedures to identify areas where consolidation is possible. The staff has addressed the first suggestion and is actively pursuing the second suggestion as discussed further in Attachment 6.

ROP Resource Analysis

A tabulation of staff resources expended for the Reactor Oversight Process (ROP) during the first four annual review periods is provided in Table 1. Specifically, the four review periods are (1) the first year of ROP implementation, (2) fiscal year (FY) 2001, (3) FY 2002, and (4) FY 2003¹.

As described in SECY-03-0062, "Reactor Oversight Process Self-Assessment for Calendar Year 2002," the staff reported a significant reduction in the staff hours expended for the ROP in 2002, with the bulk of the reduction in baseline inspection activities. A number of events during the 2002 inspection cycle challenged the ability of the NRC staff to complete the required baseline inspections. These challenges required regional staff to implement short-term coping strategies that resulted in reduced baseline inspection effort. The reduced baseline inspection effort in 2002 was primarily attributable to two factors:

- a shortage of qualified inspectors
- the diversion of inspection resources intended for baseline inspections to respond to unanticipated emerging events and external demands

The challenges that surfaced in 2002 continued into 2003; however, as a result of effective staff intervention, the impact was significantly reduced as further detailed below.

As reported in Table 1, baseline inspection effort in 2003 reflects an increase over 2002 and a return toward the nominal effort described in each baseline inspection procedure. Even though inspection effort increased in 2003 compared with 2002, there is a general, long term, decreasing trend in resource usage since initial implementation of the ROP.

Since 1995, inspection resource consumption has decreased on the order of 30 percent, and ROP implementation has continued this long-term downward trend. However, the staff believes that this trend will reach a limit as available efficiencies are exhausted as evidenced, for example, by the relatively unchanged effort in 2003 relative to 2002 for inspection preparation/documentation as a ratio of direct inspection effort. Future resource savings may only be possible through fundamental revisions of the ROP.

Plant-specific inspection effort increased significantly during 2003, compared with the previous evaluation periods (from approximately 16,000 hours to 24,600 hours). This increase is primarily attributable to the effort required for the restart inspections at the Davis-Besse Nuclear Station, as prescribed by Inspection Manual Chapter (IMC) 0350, "Oversight of Operating Reactor Facilities in a Shutdown Condition with Performance Problems," and the inspections related to performance issues at the Point Beach Nuclear Plant.

ATTACHMENT 6

¹ The ROP is implemented on a calendar year basis; however, the staff obtained and reported resource data on a fiscal year basis in order to meet the schedule requirements for this paper. There is no reason to believe that the results would be significantly different if the staff collected and reported resource data on a calendar year basis.

A significant increase was also seen in the 2003 inspection effort related to generic and plant-specific safety issues (GSIs and SIs). This increase is the result of the high level of inspection activity associated with temporary instructions issued in 2003 for issues related to safeguards, material accountability, containment sump blockage, and reactor vessel head and vessel head penetrations.

The effort expended in 2003 for performance assessment and the “other activities” listed in Table 1 has remained relatively constant. The current performance assessment activities are well established. The effort reported for the “other activities,” such as inspection-related travel, is typically a function of the effort expended for direct inspection and usually tracks that direct effort.

Resource Model/ROP Inspection Budget

The resource model developed from data and experience gained during ROP initial implementation was used to develop budget requirements for the FY 2004 budget. However, experience gained during the 2002 and 2003 inspection cycles required additional refinements to the ROP resource model. Based on the refinements, a number of changes were made to the FY 2004 regional inspection budget as compared to the FY 2003 budget. For example:

- Resources for supplemental and reactive inspections have been increased 15 FTE to provide for regulatory oversight of a plant under IMC 0350, follow-up activities to verify licensees’ improvement plans pursuant to Inspection Procedures 95002 and 95003, and reactor pressure vessel head inspections.
- Resources for performance assessment activities have been increased 4.8 FTE
- Program development resources have been decreased 2 FTE

These changes are included in the regional inspection budget for FY 2004 — FY 2006. Issues related to inspection resources will be reviewed as part of the ongoing ROP self-assessment. Resources will be adjusted as required by program needs.

ROP Efficiency Focus Group

In November 2001, the staff established the ROP Efficiency Focus Group, consisting of experienced staff from the regions and the Office of Nuclear Reactor Regulation (NRR), to explore ways in which to gain new efficiencies in the ROP. After evaluating a number of ideas, the focus group selected two suggestions for near-term implementation. Specifically, those suggestions were to (1) explore less resource-intensive alternatives to the annual performance assessment meeting for plants in the licensee response column of the Action Matrix, and (2) review the baseline inspection procedures to identify areas where consolidation is possible.

The staff is actively pursuing both of these suggestions. In particular, the staff has revised IMC 0305 to allow increased flexibility in scheduling the annual performance assessment meeting for plants in the licensee response and regulatory response columns of the Action Matrix throughout the entire assessment period. At the discretion of regional management, the staff may now schedule annual assessment meetings for these plants within six months after issuing the annual assessment letter.

The suggestion to consolidate the baseline inspection procedures has been undertaken initially for four groups of procedures and is currently being implemented in a pilot inspection program at selected sites in each region. The results will be provided at the conclusion of the pilot inspections. If the anticipated resource savings are realized, and assuming that effectiveness is maintained, the consolidation may be extended to other baseline procedures.

Challenges in the 2003 Inspection Cycle

The major component of the ROP is the baseline inspection program, which is performed at all reactor sites by NRC resident inspectors and inspectors from the regional offices. During the 2002 inspection cycle, regional offices indicated that they were seriously challenged in their ability to complete the baseline inspection program. As previously stated, the projected inability to complete the baseline inspection program at all reactor sites was primarily attributable to two factors:

- a shortage of qualified inspectors
- the diversion of inspection resources intended for baseline inspections in order to respond to unanticipated emerging events and external demands.

Regional staff implemented a number of strategies to avert the possibility of not completing the baseline inspection program in 2002. Although these short-term coping strategies allowed completion of the baseline inspections in 2002, the events of 2002 and the deferral and postponement of a number of activities impacted the conduct of the 2003 inspection program, as follows:

- *Inspections rescheduled from 2002 to 2003*
A number of biennial and triennial inspections were deferred until 2003 to make inspection resources available in 2002. This resulted in more inspection resources needed in 2003 to perform the deferred inspections.
- *Delayed inspector training and qualification*
Deferral of inspector qualification training in 2002 to permit use of "basic" qualified inspectors in completing 2002 baseline inspections delayed inspectors reaching full qualification. This delay impacted the number of fully qualified inspectors in 2003.
- *Deferred improvement/development efforts*
- *Impacts from Davis-Besse*
The Davis-Besse event resulted in additional inspections. The lessons learned are being evaluated and could result in changes to the ROP. Also, continued restart inspections associated with the delayed restart of Davis-Besse added significantly to the 2003 inspection burden.
- *Inspection oversight at specific sites*
Additional resources were used for increased oversight of plants with performance issues, reactor vessel head inspections and replacements, and restart activities for Browns Ferry 1.

- *Additional burden on resident and regional inspectors due to safeguards activities*
- *Additional burden on the regions to train and qualify a large number of new inspectors*
In one region, for example, 33 new individuals were in the IMC 1245 reactor inspector qualification process during 2003.

In order to address these impacts and ensure that baseline inspections were completed as required during the 2003 inspection cycle, regional managers were asked, in May 2003, to identify possible inspection resource shortfalls for the 2003 inspection cycle. Responses to that request from Regions I and III indicated that baseline program needs would not be met without assistance. Region I was challenged primarily by the loss of qualified inspectors. Region III was challenged by Davis-Besse restart inspection needs, Point Beach supplemental inspections, and the delay of 11 baseline team inspections from 2002 to 2003. Region I estimated that it needed 43 staff-weeks of assistance; Region III estimated that it needed 120 staff-weeks.

Of the total of 163 staff-weeks of inspection support that Regions I and III requested, NRR, Region II, and Region IV provided 121 staff-weeks (90 staff-weeks to Region III and 31 staff-weeks to Region I). The balance was provided by additional contractor support and re-employment of three annuitants who were former regional inspectors. As a result, the 2003 baseline program requirements were met in all regions. However, the assistance provided resulted in some delays in personnel transfers and formal qualification processes in NRR, Region II and Region IV. The resource constraints also impacted the staff's ability to complete project work as scheduled; for example, delays in licensing activities, Significance Determination Process (SDP) improvement efforts, performance indicator (PI) activities, development of the Browns Ferry restart inspection manual chapter, and processing of ROP feedback forms.

Additionally, in 2003, the staff revised the resident inspector policy to allow early assignment of new resident and senior resident inspectors to a site. The new policy allows the regional administrator to assign a permanent resident inspector up to 12 months before the planned departure of the incumbent resident inspector. Similarly, the regional administrator can now assign senior resident inspectors up to six months before the planned departure of the incumbent. Regional management also implemented actions to reduce inspector vacancies through active recruiting; training new hires; and over-hiring in anticipation of retirements, attrition, and staff movement.

Long-Term Improvements

Although the actions described above provided the necessary relief during the 2003 inspection cycle, the staff is considering the following additional steps to prevent future difficulties:

- Continue efforts to identify areas for possible efficiency gains in the ROP, including evaluating the effectiveness of the ROP procedures and the effort to streamline the SDP Phase 2 process.
- Reconsider personnel staffing policies and continue aggressive hiring strategies by all four regions to avoid staffing shortfalls.

- Pursue and evaluate credit for licensee self-assessment. However, the staff will have to exercise care to ensure public confidence in the process as well as the NRC's ability to independently and adequately assess licensee performance.

These options will be evaluated as part of the ongoing ROP improvement process. In addition, during the 2004 inspection cycle, the staff intends to undertake a program review to understand the reasons for regional differences in expenditure rates, identify best practices in conducting inspections, and examine the concept of regional centers of expertise to determine whether specific inspections could be more effectively completed by dedicated inspectors.

In addition to the above, the staff will address one issue specific to Region I. Specifically, the current resource model treats Millstone Units 2 and 3 as two, single-unit sites instead of one, dual-unit site. This treatment allocates additional inspection resources to Millstone in order to address unique site features and historical circumstances that are currently being resolved. Region I has indicated that it will reevaluate the need for these additional resources concurrently with its review of Millstone resident inspector assignments. In consultation with Region I, the staff will reach a decision on the site status and inspection resource needs for Millstone during the 2004 inspection cycle.

A similar situation exists for Indian Point Units 2 and 3, which are currently treated as two, single-unit sites. The staff will also reevaluate the site status of the Indian Point units as consolidation of the two units under a single licensee continues; however, this will be a long-term reevaluation. The current status and inspection demands for Indian Point do not justify a near-term reduction of inspection resources for these units.

Table 1
Resources Expended
(Total Staff Effort Expended at Operating Power Reactors)

	52 weeks initial implementation 4/2/00-4/1/01	52 weeks FY 2001 9/24/00-9/22/01	52 weeks FY 2002 9/23/01-9/21/02	52 weeks FY 2003 9/29/02-9/27/03
Baseline/Core				
Direct Inspection Effort	128,447	130,330	119,884	123,027
Inspection Prep/Doc	115,935	109,227	91,385	91,230
Plant Status	<u>43,751</u>	<u>46,191</u>	<u>44,228</u>	<u>46,755</u>
Subtotal	288,133	285,748	255,497	261,012
Plant Specific Inspections				
Direct Inspection Effort	11,295	8,436	9,354	14,647
Inspection Prep/Doc	<u>6,683</u>	<u>6,161</u>	<u>7,715</u>	<u>9,978</u>
Subtotal	17,978	14,597	17,069	24,625
GSI/SI	2,416	918	1,718	3,953
Performance Assessment	21,017	19,845	17,293	20,013
Other Activities	47,190	49,471	43,627	48,058
Inspection Related Travel				
Routine Communication				
Regional Support				
Enforcement Support				
Significance Determination Process				
Review of Technical Documents				
Total Staff Effort (regular + nonreg hrs)	376,734 hrs	370,579 hrs	335,204 hrs	357,661 hrs
Total Staff Effort/Operating Site	5,623 hrs/site	5,531 hrs/site	5,003 hrs/site	5,338 hrs/site

Resident Inspector Demographics

This attachment provides the annual update on demographic data for inspectors assigned to the resident inspector program, as the Commission requested in a staff requirements memorandum (SRM) dated April 8, 1998. The purpose of this analysis is to determine whether the agency's actions associated with the resident inspector program have resulted in a stable or increasing resident experience base and to identify any necessary actions.

Resident Inspector Demographic Data

The review of the demographics includes analysis of the overall program data for the resident (RI) and senior resident inspector (SRI) groups (see Tables 1 and 4, as well as Figures 1 and 2). Additionally, Figures 3 through 14 provide an analysis of the regions in each of the data categories. The months used for the statistical comparison are September 1999, December 2000, November 2001, November 2002, and November 2003. Median values were used to make the comparisons.

The demographic analysis consists of five distinct data sets, including (1) "NRC time," (2) "total resident time," (3) "qualified total resident time," (4) "current site time," and (5) "relevant non-NRC experience." These data sets align with the PR1 through PR5 metrics in Inspection Manual Chapter (IMC) 0307, "Reactor Oversight Process Self-Assessment Program," as discussed in Attachment 3 to this paper. "NRC time" is the total number of years the individual has accumulated as an employee of the U.S. Nuclear Regulatory Commission (NRC); "total resident time" is the total number of years the individual has accumulated as an RI or SRI; "qualified total resident time" is the time the individual has been assigned to an RI or SRI position after completing the reactor operations inspector qualification requirements of IMC 1245, "Inspector Qualification Program for the Office of Nuclear Reactor Regulation Inspection Program;" and "current site time" is the total number of years spent as an RI or SRI at the current site. "Relevant non-NRC experience" is nuclear power experience acquired outside of the NRC. Examples of relevant non-NRC experience are operation, engineering, maintenance, or construction experience with commercial nuclear power plants, naval shipyards, Department of Energy facilities, and/or the U.S. Navy's nuclear power program.

Analysis of 2003 RI Groups

Resident inspector demographic data for 2003 (see Table 1 and Figure 1) indicate that with the exception of relevant non-NRC experience, all categories experienced a decline in both average and median experience levels. The decline is driven by the fact that the NRC hired about twice as many new RIs in 2003 compared to the average number of new RIs hired over the previous 3 years (see Table 2). The slight increase in relevant non-NRC experience indicates that the regions successfully recruited individuals with relevant non-NRC experience into the RI program. Of 74 resident inspector positions, 27 vacancies needed to be filled in calendar year (CY) 2003, primarily as a result of promotion of experienced RIs into SRI or other positions. These vacancies were generally filled by persons who had not yet achieved full inspector qualifications, but were basic inspector certified under IMC 1245. This is indicative of a general practice of retaining new hires in the regional offices and certifying them to the basic level before assigning them to a site. Of the 27 filled vacancies, 19 of the new resident inspectors had more than 3 years of relevant non-NRC experience, indicating that a large number of experienced engineers entered the program.

Table 1. Summary of RI Group Experience Levels (in years)						
		Sept. 1999	Dec. 2000	Nov. 2001	Nov. 2002	Nov. 2003
NRC time	average	5.70	6.26	6.21	6.39	5.34
	median	5.11	4.83	5.13	5.61	4.13
Total resident time	average	3.28	3.84	3.84	3.90	3.28
	median	2.43	3.41	3.87	3.77	1.99
Qualified total resident time	average	2.53	3.15	3.11	3.14	2.50
	median	1.61	2.54	2.92	3.14	0.96
Current site time	average	2.23	2.54	2.74	2.86	1.64
	median	2.16	2.68	3.18	2.30	1.00
Relevant non-NRC experience	average	7.74	8.07	8.80	9.68	10.26
	median	7.50	7.83	8.00	9.29	10.00

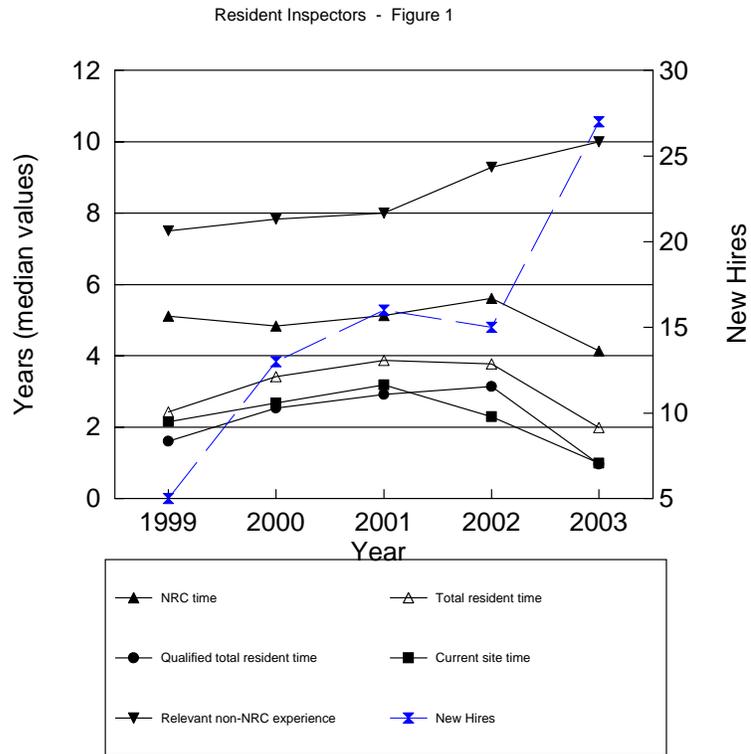


Figure 1 illustrates the correlation of experience levels with the number of new hires. In 2003, experience levels were down, with the exception of relevant non-NRC experience, principally as a result of the hiring of new inspectors.

Trend Analysis of Relevant Non-NRC Experience for Personnel Entering the RI Program

The 2003 data indicate that many experienced engineers entered the program as RIs. On average, the 27 new RIs had about 9 years of relevant non-NRC experience, compared to an average of 12 years in 2002.

Table 2 shows the percentage of new RIs with less than 3 years of relevant non-NRC experience from 1996 through 2003. The turnover rate in the RI population was about 36 percent in 2003. This was based on 74 available RI positions and 27 inspectors entering the RI program during 2003. The increase from 2002 to 2003 resulted from the effort to hire more entry level staff.

Table 2. Percentage of New RIs With Less Than 3 Years of Relevant Non-NRC Experience

1996	1997	1998	1999	2000	2001	2002	2003
0% (0/14)	6% (1/18)	12% (2/17)	0% (0/5)	31% (4/13)	6% (1/16)	20% (3/15)	30% (8/27)

The percentages in this table represent the ratio of those RIs hired in that particular year who had fewer than 3 years of relevant non-NRC experience to the total number of RIs hired.

Projected Transfers

The transfer rate projections previously reported in this analysis have been based solely on the expectation of completing a 7-year assignment. In reality, inspectors frequently leave before the end of this period for a variety of reasons, including promotions (especially from RI to SRI), transfers to regional offices and headquarters, and relocations to other sites. Therefore, the projected RI and SRI transfers have not been reliable and will no longer be included as part of the annual RI demographic analysis.

Analysis of 2003 SRI Groups

The NRC experience levels for the SRI group decreased from the previous year in all areas, but to a lesser extent than those of the RI group, and with a slight increase in relevant non-NRC experience (see Table 4 and Figure 2). This was attributable to movement of experienced RIs into SRI positions. The median qualified total resident time of the SRI group was about the same as the previous year. The “relevant non-NRC experience” for both groups continues to increase.

During 2003, 20 SRI positions were filled, compared to five SRI positions in 2002 (see Table 3). Region I filled 5 of these positions, Region II filled 9, Region III filled 3, and Region IV filled 3. Filling these positions created vacancies in the RI program, as evidenced by the hiring of 27 RIs in 2003. Regions I and II each filled 7 of the RI positions, Region III filled 8, and Region IV filled 5 (see Table 3). Of particular note is that during 2003, only one RI left the NRC, and that was due to retirement. This indicates that RIs are not leaving the program but instead are being promoted to SRI, region-based, and/or headquarter positions. Specifically, approximately one-

third of the RI population was promoted to SRI or other positions in regional offices and headquarters.

Fourteen SRIs left the program during this period (see Table 3). Seven of these SRIs received promotions, 6 received lateral reassignments, and 1 retired. Regions I, II, and IV each promoted 1 SRI, while Region III promoted 3 SRIs; all of these promotions were within the respective regions. In addition, a Region I SRI received a promotion in headquarters, and another Region I SRI retired. The six SRIs who left the program transferred to other positions in either the regional offices (5) or headquarters (1).

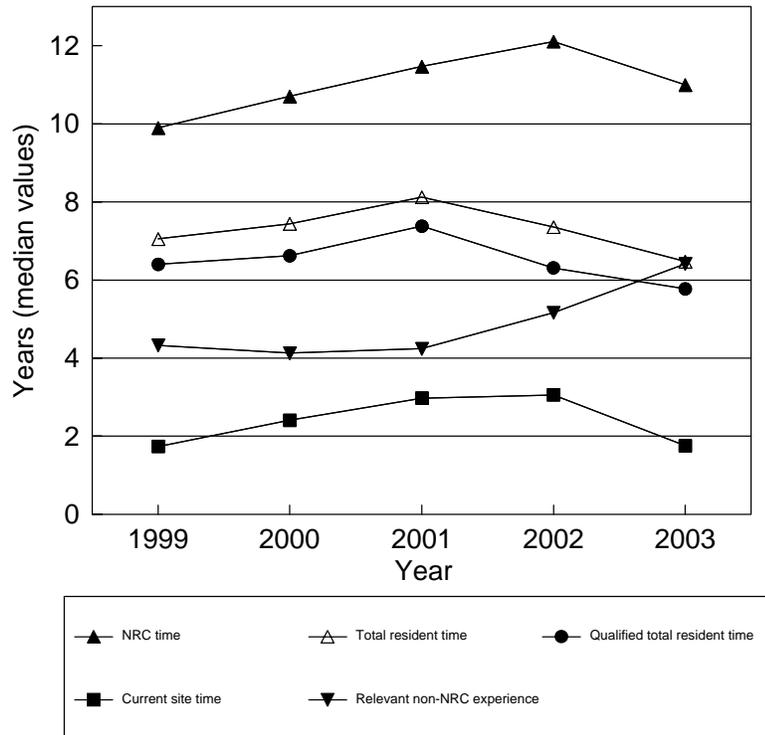
Table 3. RI and SRI Activity During 2003

Activity	RI	RII	RIII	RIV	Total
SRI positions filled	5	9	3	3	20
RI positions filled	7	7	8	5	27
SRI Movement					
SRIs promotions to GG-15	2*	1	3	1	7
SRI lateral reassignments	2	2	1	1	6
SRI retirement	1				1
*SRI received promotion in Headquarters.					

NOTE: The number of positions filled does not necessarily equal the number of positions vacated during a given period because of the time involved in the recruitment process.

Table 4. Summary of SRI Group Experience Levels (in years)						
		Sept. 1999	Dec. 2000	Nov. 2001	Nov. 2002	Nov. 2003
NRC time	average	10.44	11.18	12.03	11.85	11.30
	median	9.90	10.70	11.47	12.11	11.00
Total resident time	average	7.60	8.07	8.66	8.17	8.22
	median	7.06	7.44	8.12	7.36	6.82
Qualified total resident time	average	6.62	7.27	7.94	7.36	7.40
	median	6.41	6.63	7.38	6.31	5.95
Current site time	average	2.03	2.84	2.96	2.90	2.44
	median	1.74	2.41	2.98	3.06	1.76
Relevant non-NRC experience	average	5.61	5.62	6.07	7.26	8.37
	median	4.33	4.13	4.25	5.17	6.42

Senior Resident Inspectors
(Program Total) - Figure 2



Conclusions

The 2003 RI demographics for “NRC time”, “total resident time,” “qualified total resident time,” and “current site time” are below their 1999 values, reflecting an RI population with reduced NRC experience primarily as a result of an influx of new hires. The SRI demographics have remained relatively stable in all areas since 1999, with the exception of relevant non-NRC experience which has increased by 48 percent since 1999.

In 2003 we made progress in addressing the 2002 challenge regarding how to minimize the length in resident inspector site coverage gaps caused by resident inspector transfers. The RI policy was revised to allow double encumbering of new resident and senior resident inspectors to a site. The new policy allows the regional administrator to assign a permanent RI up to 12 months before the planned departure of the incumbent and to assign SRIs up to 6 months before the planned departure of the incumbent. The regions have successfully used this policy at least once for an RI and SRI in 2003, and plan to implement the policy several more times in the upcoming months. This will help minimize site coverage gaps when residents stay for the entire 7-year rotation. However, resident vacancies frequently occur with little notice; therefore, regions can not make use of the early reassignment of residents to address resident gaps in these situations.

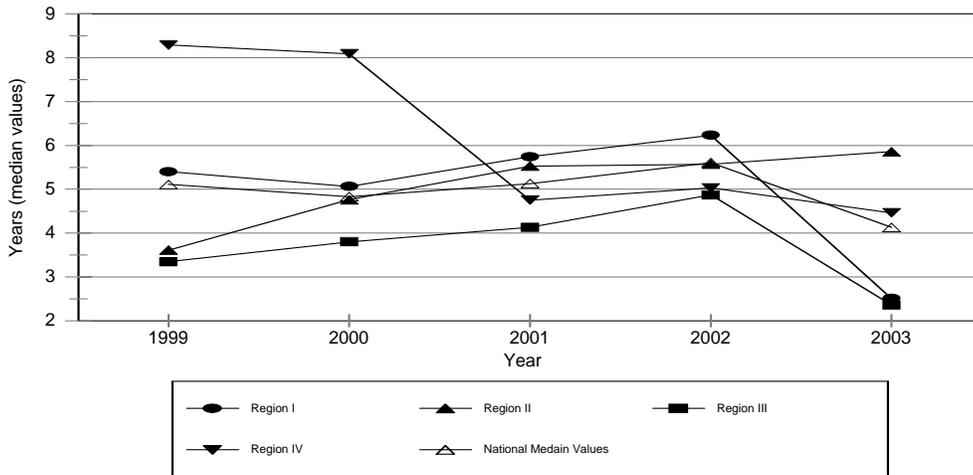
The turnover rate in SRIs during this period led to a number of new RIs entering the program as existing RIs moved up to fill the SRI positions. This indicates that SRIs are well qualified for various jobs throughout the agency. Also, as indicated during this period by the departure of only one RI and one SRI, both due to retirement, inspectors are not leaving the program, but instead are being promoted or reassigned to positions within the agency/regions, thereby retaining this expertise (mostly within the regions). However, it is important to recognize the human capital impact of 27 new RIs and 20 new SRIs into the resident program during 2003. The movement of inspectors between sites, between regions and to headquarters creates a “domino” effect in filling vacancies and impacts the effectiveness and efficiency of work completed. For each vacancy filled there are associated costs that may impact program accomplishments due to lost time at the site.

In conclusion, the program continues to attract and retain quality staff. Therefore, no resident inspector program changes are warranted at this time. The staff will continue to monitor the program.

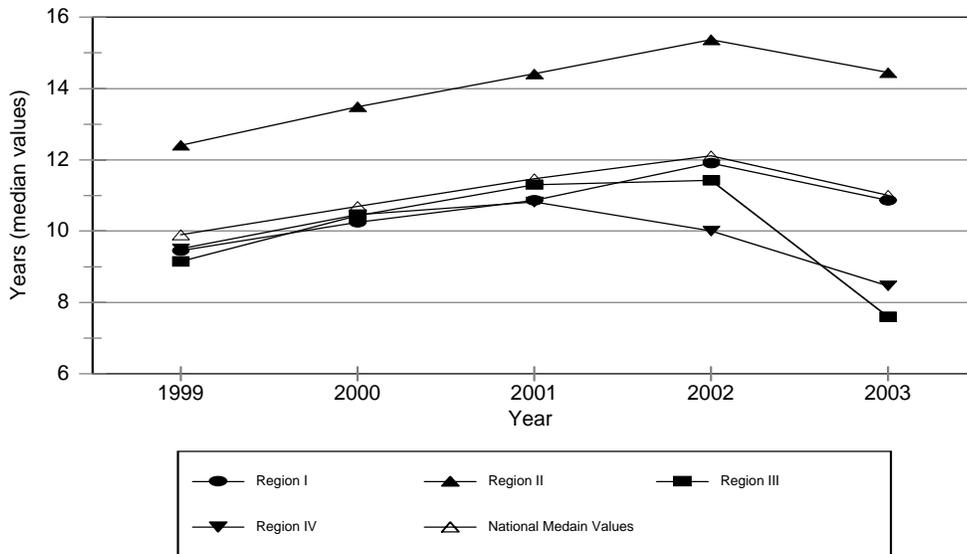
NRC Time

NRC time for RIs decreased in all regions except Region II. NRC time for SRIs decreased in all regions. Region III has the least amount of total NRC time, while Region II continues to have the greatest amount of NRC time for both populations. Region II SRIs continue to have the most experience in the agency, while Region III SRIs have the least.

NRC Time (RIs) - Figure 3



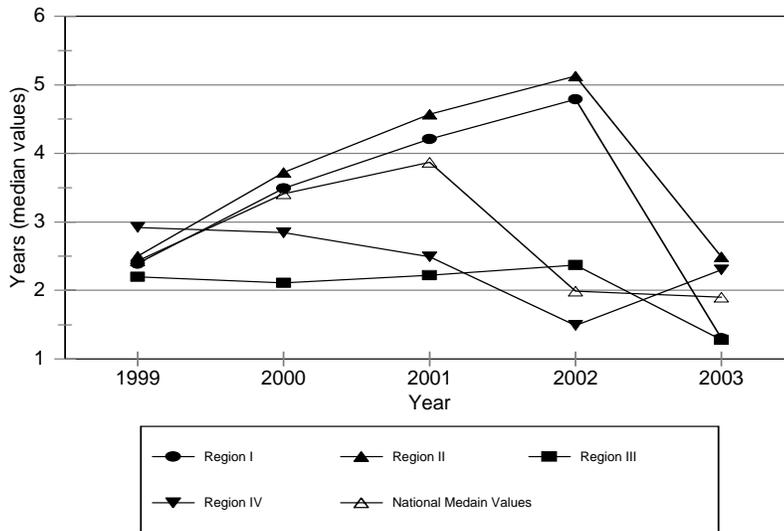
NRC Time (SRIs) - Figure 4



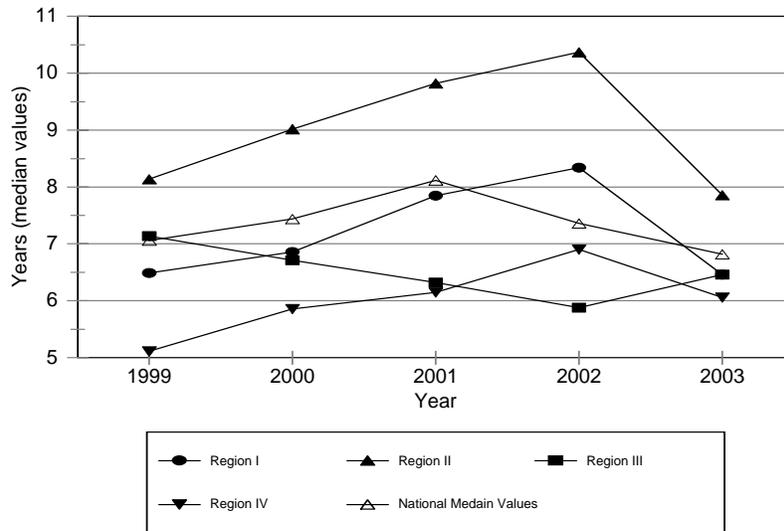
Total Resident Time

With the exception of Region IV, all of the regions reflect a decline in resident time for RIs. Region II has the greatest amount of total RI time, while Regions I and III have the least. Regions II and IV were above the national median values. Twenty-seven new RIs entered the program, and 20 SRI positions were filled in 2003. With the exception of a slight increase for Region III, all of the regions reflect a decline in the total resident time for SRIs.

Total Resident Time (RIs) - Figure 5



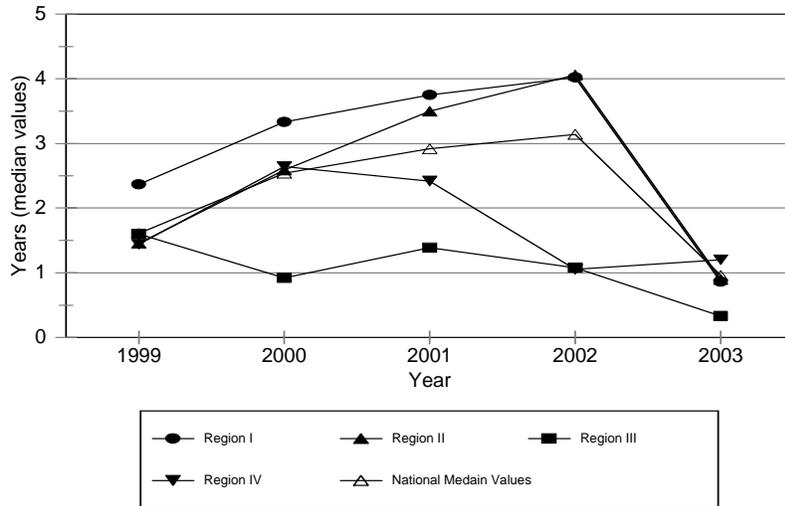
Total Resident Time (SRIs) - Figure 6



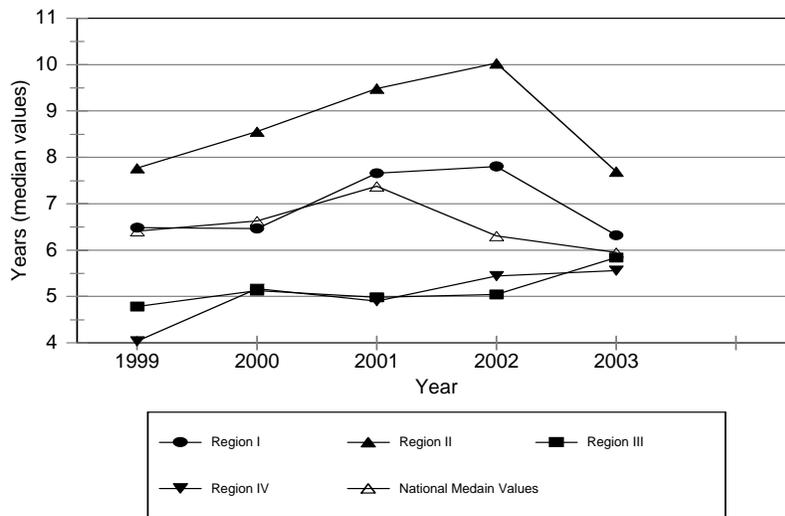
Qualified Total Resident Time

With the exception of Region IV, all of the regions experienced a decrease in the experience level of qualified RIs. New hires may have contributed to this decline. For total resident time, all of the regions except Region II were below the national median. Regions I and II showed a decline in SRI qualified time, while Regions III and IV showed a slight increase.

Qualified Total Resident Time (RIs)
Figure 7



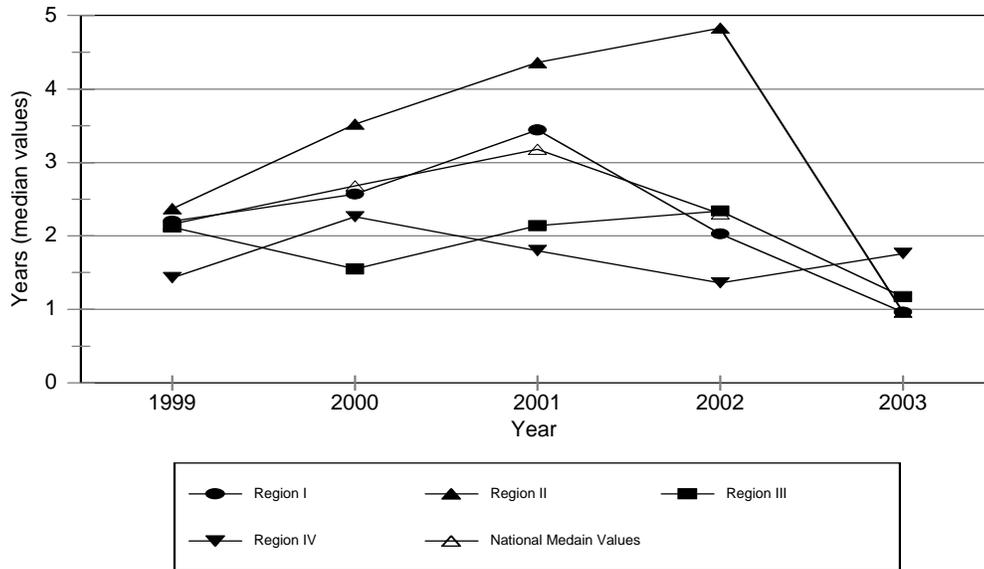
Qualified Total Resident Time (SRIs)
Figure 8



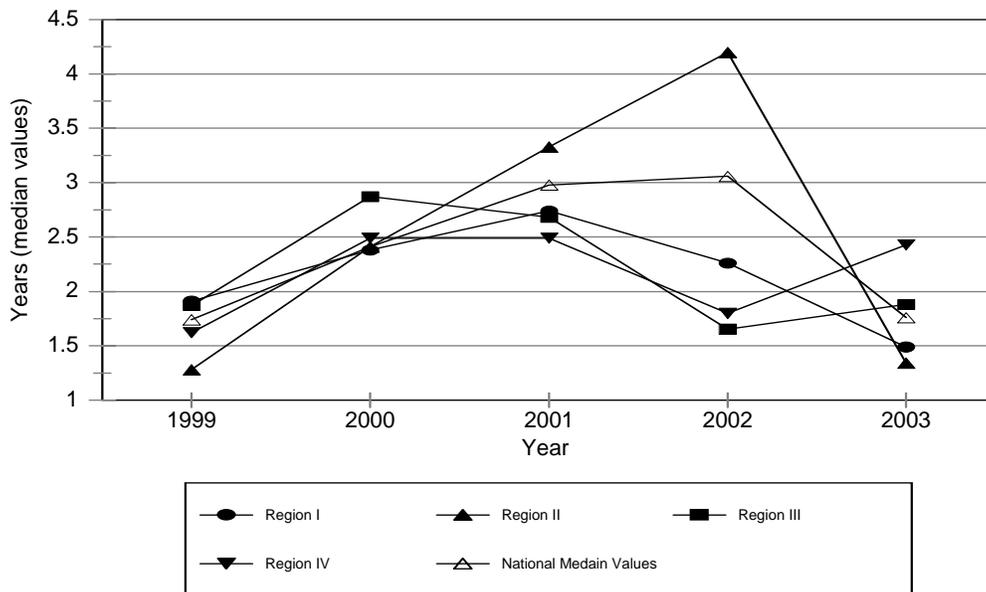
Current Site Time

The SRI metrics for Regions I, II, and III were lower than those for Region IV, which experienced a slight increase in both RI and SRI positions during 2003. Total site time for Region II decreased substantially during 2003. For RIs, all regions were close to the national median.

Current Site Time (RIs) - Figure 9



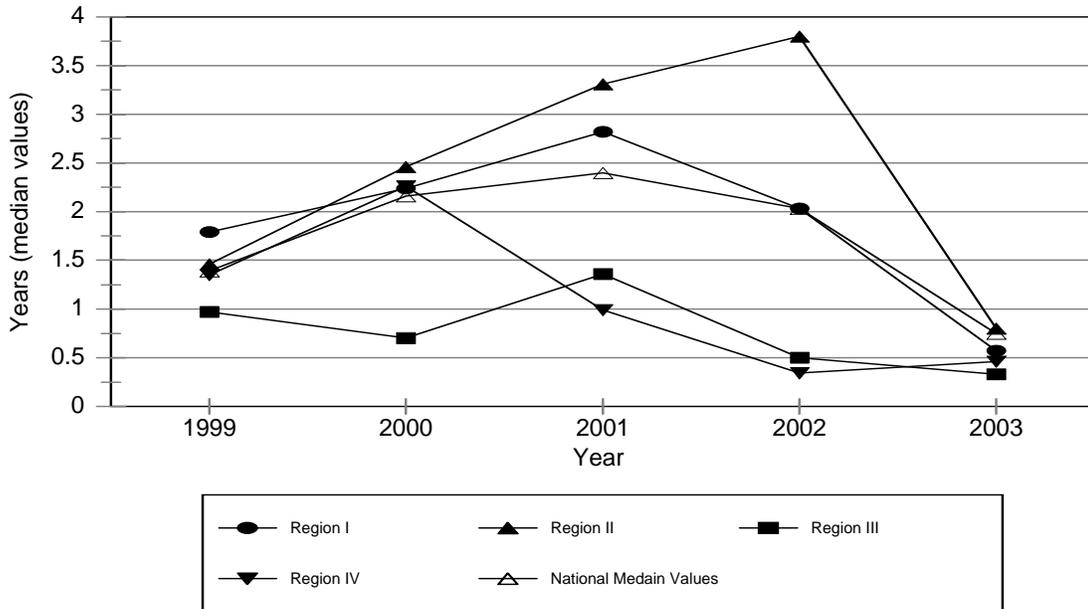
Current Site Time (SRIs) - Figure 10



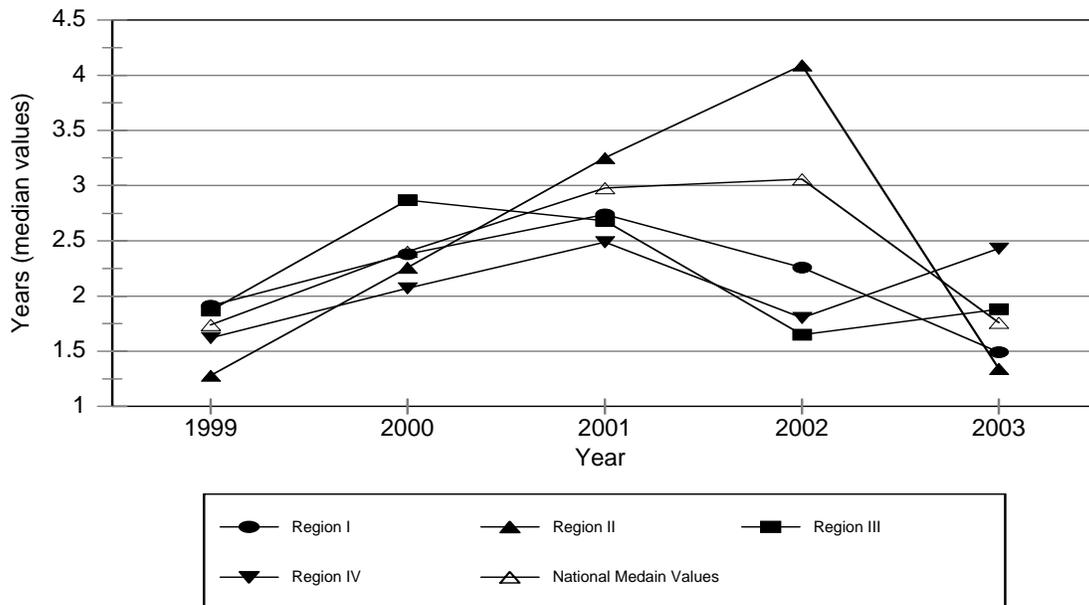
Qualified Current Site Time

The RI metrics for Regions I, III, and IV were slightly lower than those for Region II. Region I and II metrics for SRI qualified current site time were lower than the previous year and lower than the national median.

Qualified Current Site Time (RIs)
Figure 11



Qualified Current Site Time (SRIs)
Figure 12



Relevant Non-NRC Experience

Region III metrics for RIs increased significantly during 2003. The other regions remained fairly stable. All of the regions experienced an increase in relevant non-NRC time for SRIs.

