May 9, 2001

MEMORANDUM TO: Samuel J. Collins, Director
Office of Nuclear Reactor Regulation

FROM: Loren R. Plisco, Chairman **/RA/ John Monninger for**
Initial Implementation Evaluation Panel

SUBJECT: SUMMARY OF THE INITIAL IMPLEMENTATION EVALUATION PANEL MEETING OF APRIL 25, 2001

The Reactor Oversight Process (ROP) Initial Implementation Evaluation Panel (IIEP) met for its sixth meeting on April 25, 2001, at the NRC Headquarters facility in Rockville, MD. The IIEP was formed in response to Commission direction in the Staff Requirements Memorandum from SECY-00-049, "Results of the Revised Reactor Oversight Process Pilot Program." The IIEP functions as a cross-disciplinary oversight group to independently monitor and evaluate the results of the first year of initial implementation of the ROP. The meeting was open to the public and was transcribed. A copy of the meeting agenda is provided as Attachment 1. The list of attendees is provided as Attachment 2. All IIEP panel members attended the meeting, with the exception of Jim Moorman of NRC Region IV, Ed Scherer of Southern California Edison, and Jim Setser of the Georgia Department of Natural Resources. In addition to the panel members, five NRC employees and one external stakeholder attended the meeting. For background information, the April 2-3, 2001, IIEP meeting summary (ADAMS ML011140396) was provided to the panel members and public in attendance.

The purpose of the meeting was to finalize the panel's report. In advance of the meeting, a draft version (Attachment 3) of the final IIEP report was provided to all panel members via email on April 23, 2001. During the meeting, significant progress was made in finalizing the report. As such, the panel members believed that any further final review and approval period could be done electronically after the meeting via email. The comments received during the meeting were incorporated into another version of the draft final report, which was then re-issued to the panel members on April 27, 2001 for final review and approval. The panel agreed during the meeting that comments submitted subsequent to this meeting, as part of the final review and approval process, would be incorporated into this meeting summary to ensure they were incorporated into the record of the panel's activities.

With respect to the April 27, 2001 version of the report, many panel members provided their final approval with no additional comments; whereas, some panel members provided additional comments for consideration for incorporation into the final report. These additional comments are provided in Attachments 4 through 12.

Time was allotted during the meeting for other members of the public to address the panel; however, no comments were received. As previously stated, the IIEP meeting was transcribed

and a copy of the transcript is provided as Attachment 13 (ADAMS ML011210473). The panel expects to issue its final report by the second week of May.

Attachments:
1 - Agenda for April 25, 2001
2 - Attendees on April 25, 2001
3 - Draft Final IIEP Report (April 23, 2001 Version)
4 - Blough Comments on Draft Report (May 4, 2001)
5 - Ferdig Comments on Draft Report (May 3, 2001)
6 - Floyd Comments on Draft Report (May 3, 2001)
7 - Garchow Comments on SDP Issues and Panel Recommendations (April 11, 2001)
8 - Garchow Comments on Draft Report (April 29, 2001)
9 - Moorman Comments on SDP Issues (April 23, 2001)
10 - Moorman Comments on Draft Report (May 3, 2001)
11 - Shadis Comments on Draft Report (April 27, 2001)
12 - Trapp Comments on Draft Report (May 2, 2001)
13 - Transcript from April 25, 2001 (ADAMS ML011210473)

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OFC:	NRR/ADIP		Region II			
NAME:	JMonninger		LPlisco via Email			
DATE:	05/08/01		05/09/01			

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Attachment 1

REACTOR OVERSIGHT PROCESS
INITIAL IMPLEMENTATION EVALUATION PANEL MEETING

Date & Time:

Wednesday, April 25, 2001, 8:00 am - 5:00 pm

Location:

U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, MD 20852
Room: TWFN-2B3 (ACRS Conference Room)
301-415-3495

Agenda:

Wednesday, April 25, 2001	
8:00 - 8:30	- Introduction / Meeting Objectives and Goals - Review of Meeting Minutes and Items from April 2-3, 2001 Meeting
8:30 - 12:00	Discussion on Draft Panel Report
12:00 - 1:00	Lunch
1:00 - 4:00	Discussion on Draft Panel Report
4:00 - 5:00	Public Comments / General Discussion / Agenda Planning
5:00	Adjourn

Attachment 2

REACTOR OVERSIGHT PROCESS INITIAL IMPLEMENTATION PANEL MEETING ATTENDEES

Wednesday, April 25, 2001

IIEP MEMBERS	AFFILIATION
Randy Blough	NRC/Region I
Ken Brockman	NRC/Region IV
Mary Ferdig	Ferdig, Inc. & Benedictine University
Steve Floyd	Nuclear Energy Institute
Dave Garchow	PSEG Nuclear
Richard Hill	Southern Nuclear Operating Company
Rod Krich	Exelon Corporation
Robert Laurie	California Energy Commission
Loren Plisco	NRC/Region II
Steve Reynolds	NRC/Region III
Ray Shadis	New England Coalition on Nuclear Pollution
Jim Trapp	NRC/Region I

OTHER ATTENDEES	AFFILIATION
Chip Cameron	NRC/OGC
Dave Horn	NRC/OIG
Roger Huston	Licensing Support Services
John Monninger	NRC/NRR
Bob Moody	NRC/OIG
Chris Nolan	NRC/OE

Attachment 3

April 23, 2001 Version

DRAFT FINAL IIEP REPORT

Cover Page

MEMORANDUM TO: Samuel J. Collins, Director
Office of Nuclear Reactor Regulation

FROM: Loren R. Plisco, Chairman
Initial Implementation Evaluation Panel

SUBJECT: FINAL REPORT OF THE REACTOR OVERSIGHT PROCESS INITIAL IMPLEMENTATION EVALUATION PANEL

The Initial Implementation Evaluation Panel (IIEP) has completed its evaluation of the first year's implementation of the reactor oversight process. The panel's final report is attached.

In its report, the panel provides an overall conclusion that the reactor oversight process is a notable improvement over the previous licensee performance assessment program, and it should be continued. The reactor oversight process has made progress toward achieving the agency's four performance goals. The panel recommends, however, that the staff take certain actions to ensure they achieve the agency performance goals in the long-term, and consider other actions to improve the process.

As part of its evaluation, the panel reviewed the staff's self-assessment process and performance measures for the reactor oversight process. The panel concluded that the self-assessment process has the elements to collect sufficient information to evaluate the program against the agency's goals, but the panel could not reach any overall conclusion regarding the effectiveness of the process because the assessment of the first year's data was not yet available. Despite the unavailability of the final self-assessment results, the panel found that, for the most part, the staff had also identified the same program issues identified by the panel during its review.

The panel consisted of members with diverse interests and views. The panel discussed many concerns, views and opinions at length during this evaluation. The exchange of individual perspectives by panel members brought out many divergent opinions. The attached report reflects those issues where the panel reached a consensus. While we reached a consensus on the conclusions and recommendations, the bases for each member's agreement were frequently different.

The objectives prescribed in the IIEP charter presented to the Congress have been completed. Unless directed otherwise, the panel will end its activities on July 31, 2001, as specified in the charter.

Attachment: As stated

REACTOR OVERSIGHT PROCESS

INITIAL IMPLEMENTATION EVALUATION PANEL

FINAL REPORT

MAY 2001

Table of Contents

Executive Summary

On May 17, 2000, the Commission directed the NRC staff to convene a panel under the Federal Advisory Committee Act, to evaluate the first year's implementation of the reactor oversight process. The Initial Implementation Evaluation Panel (IIEP) charter was issued on October 17, 2000, and the panel met six times between November 2000 and April 2001 to evaluate the results of the first year's implementation of the reactor oversight process.

The IIEP concluded that the reactor oversight process is a notable improvement over the previous licensee performance assessment program, and it should be continued. The reactor oversight process has made progress toward achieving the agency's four performance goals. The panel recommends, however, that the staff take certain actions to ensure they achieve the agency performance goals in the long-term, and consider other actions to improve the process. The specific issues that the panel determined needed to be addressed and the associated recommendations are included in the following report.

The IIEP had the benefit of information obtained during nationwide implementation of the reactor oversight process for a year. During the year, the oversight process elements were fully exercised and many experiences that exemplified concerns and issues were available for the panel's considerations.

The NRC and the nuclear industry expended substantive time and effort in training their respective staff members about the process changes and paradigm shifts embodied in the revised reactor oversight process. Although the change management tools used to communicate and carry out the change were generally successful, the panel noted that the staff must overcome three hurdles before they can achieve further progress toward meeting the agency's goals. These three hurdles are the underlying contributing causes to many specific issues discussed in the panel's report.

Maintain Safety: One presumption in the NRC's strategic plan is that the nuclear power industry's performance has improved substantially over the past ten years and nuclear reactors, collectively, are operating above acceptable safety levels consistent with the agency's Safety Goal Policy. The staff designed the reactor oversight process to assure the current level of safety is maintained. They have structured the program to take action to improve safety performance before it falls below acceptable levels, and not to continually improve the safety margins that currently exist. The presumption that current nuclear industry performance is sufficient to assure public health and safety, versus regulating for excellence, however, is an unwelcome message to some external stakeholders and will limit increased public confidence in the program.

Risk-informed: There is a conflict between being risk-informed and compliance-based when considering the current status of the regulatory requirements. The reactor oversight process, in many ways, is further ahead of the other regulatory processes in using risk insights. This puts the inspector in a difficult situation. The reactor oversight process directs the inspector to focus on risk significant issues, but the associated regulatory requirements are often not risk-informed. Additionally, they cannot condone a noncompliance, whatever the safety significance of the issue. It is this conflict that has contributed to many the issues discussed in this report,

such as the use of no color findings. In the long term, continued efforts to risk inform the regulations are needed to close the gap between the regulatory framework and the oversight process.

Indicative: The previous performance assessment process focused on identifying declining performance trends by using low-level performance issues in an attempt at being predictive. The reactor oversight process, by using performance indicator thresholds and the significance determination process, is an indicative process. The presumption is that the licensee's corrective action program best handles low-level performance trends and regulatory response is not required until a threshold is crossed. There is a related assumption, however, that a licensee will not normally directly pass from Green to Red, allowing the NRC time to respond before plant risk is unacceptable. The staff intended this to be the predictive component of the new assessment process. Many concerns raised about crosscutting issues and inspection report thresholds come from discomfort with this presumption.

An ancillary common concern raised by the panel members when reviewing all of the specific issues discussed in the report is the continuing need for sufficient resources to maintain the formal processes and infrastructure for the reactor oversight process. NRC resources continue to be needed to evaluate, pilot, communicate, and implement future program enhancements. Although a full year of implementation has provided many lessons learned, and the staff has already made many process changes, many issues remain to be resolved and other issues remain to be uncovered as the program continues to be assessed.

The panel observed that the staff has actively solicited stakeholder opinion throughout initial implementation, as they did during development of the reactor oversight process. The level of stakeholder involvement has been unprecedented for an NRC process change. The use of public workshops, public meetings near all facilities, surveys, and formal internal feedback processes provided valuable input to the staff so they could further improve and refine the process. In addition, we saw the deliberative process by which this panel pursued its charter as highly supportive of ensuring the agency's performance goals and promoted public understanding of and confidence in the NRC's regulatory oversight process.

FINAL REPORT OF THE INITIAL IMPLEMENTATION EVALUATION PANEL

Introduction

The NRC implemented, nationwide, a revised reactor oversight process (ROP) for commercial nuclear power plant licensees on April 2, 2001. Background information on the development of the ROP and the results of the pilot program is contained in Commission papers SECY-99-007, "Recommendations for Reactor Oversight Process Improvements," dated January 8, 1999, SECY-99-007A, "Recommendations for Reactor Oversight Process Improvements (Follow-up to SECY-99-007)," dated March 22, 1999, and SECY-00-049, "Results of the Revised Reactor Oversight Process Pilot Program," dated February 24, 2000. These Commission papers described the scope and content of performance indicator reporting, a new risk-informed baseline inspection program, a new assessment process, and revisions to the enforcement policy. Commission paper SECY-00-049 also described the results from the Pilot Program Evaluation Panel (PPEP), including a recommendation from the panel to proceed with initial implementation of the ROP at all power reactor facilities. On March 28, 2000, the Commission approved initial implementation of the ROP.

On May 17, 2000, in Staff Requirements Memorandum SECY-00-049, the Commission directed the NRC staff to convene another evaluation panel under the Federal Advisory Committee Act (FACA), to evaluate the first year's implementation of the ROP. The Initial Implementation Evaluation Panel (IIEP) charter was filed with Congress on October 17, 2000, establishing a cross-disciplinary oversight panel to independently monitor and evaluate the results of the first year's implementation of the ROP and provide advice and recommendations to the Director of the Office of Nuclear Reactor Regulation on reforming and revising the ROP (See Attachment 1). The panel was made up of a cross section of stakeholders similar to those who participated in the PPEP, with the addition of an NRC senior resident inspector and senior reactor analyst, in response to the Commission's directions. The NRC selected the panel members to represent the views of diverse groups that had an expressed interest in the changes to the reactor oversight program (See Attachment 2).

Approach and Objectives

The IIEP conducted six meetings during the first year's implementation of the reactor oversight process. All meetings were open to the public with all meeting material being placed in the NRC's public document room (PDR). Additionally, the meeting notices, summaries, and transcripts were placed on the NRC's ROP web page. Attachment 3 provides a bibliography of the significant documents regarding the panel's activities.

The IIEP worked as a management level cross-disciplinary oversight group of experts to evaluate whether the new regulatory oversight can be effectively carried out and how the program compared in its execution to its overall objectives. The panel obtained additional views, to supplement the members' personal insights, from representatives of four states (New Jersey, Pennsylvania, Illinois, and Vermont), the Union of Concerned Scientists, the Nuclear Energy Institute, NRC resident inspectors, NRC senior reactor analysts, NRC Office of Public Affairs, and McGraw-Hill (See Attachment 4). The NRC staff members directly involved in the program development provided the status of the initial implementation and responded to questions and comments.

During the IIEP meetings, the panel discussed and generally agreed to the following objectives in carrying out its charter:

(1) Determine whether the Reactor Oversight Process is achieving the following goals:
- Is it maintaining safety?
- Is it increasing effectiveness and efficiency?
- Is it increasing public confidence?
- Is it reducing unnecessary regulatory burden?
- Is it objective?
- Is it risk-informed?
- Is it predictable?
- Is it understandable?

(2) Determine whether the more significant problem areas associated with the Reactor Oversight Process have been identified.

(3) Determine whether the NRC has developed a sound self-assessment process for the ROP and, if so, does it include mechanisms for self-correction.

Panel Conclusions and Recommendations

We asked each panel member to provide a list of comments and issues regarding implementation of the ROP. We compiled and sorted these issues and other issues raised during panel meetings according to ROP program elements. During the panel meetings, with the assistance of a facilitator, the panel considered these issues, developed a consensus list of issues and recommendations, assigned a priority to each issue, and determined the primary goals affected by the issue. The issues were placed into one of two priorities. Priority 1 issues were areas that need to be addressed to ensure the staff achieves the agency's performance goals in the long-term. The Priority 2 issues were actions that the staff should consider to improve the process. During this review process, the staff addressed some issues identified by the panel, and we have not included these issues in the report.

In developing its recommendations, the panel attempted to not specify how to resolve the issues identified in this report. The panel believed that additional time and information was necessary to fully evaluate solutions and the impact of any proposed changes.

Though the panel focused its efforts on discussing areas needing improvement, they noted many positive attributes and outcomes. We have included some key positive comments in the introductory comments associated with each program element.

The following five sections provide the consensus conclusions and recommendations of the IIEP with respect to each reactor oversight program element. Working comments from the panel members provided during the panel discussions are available in the PDR.

Overall Reactor Oversight Process

The reactor oversight process is a notable improvement over the previous licensee performance assessment program and it should be continued. The reactor oversight process

has made progress toward achieving the agency's performance goals. The program framework provides a more objective, risk-informed, predictable, and understandable approach to the oversight of commercial nuclear reactor facilities.

Issue: (O-1) Process improvements and stakeholder feedback
Priority: 1
Primary Program Goals: Public Confidence/Efficiency and Effectiveness

Issue Description: As with any process, it is important that a formal infrastructure be established to allow for stakeholder feedback, comments, and questions. In addition, the infrastructure should ensure timely review of feedback and implementation of process improvements. The frequently asked questions process used for the performance indicator program was a positive mechanism to raise and resolve licensee and inspector issues. This process provided for the open exchange of information and establishment of uniform and consistent guidance. The other elements of the reactor oversight process, such as the significance determination process, would benefit from a similar approach. This process should also include a mechanism for the public to retrieve information on past questions and answers, and ensure lessons learned and feedback information is shared across regional boundaries.

The PPEP recommended the need for continued feedback from inspectors and ongoing modification of procedures throughout industry-wide implementation to assure that the procedures are clear and appropriately address the cornerstones.

Panel Recommendation: Establish a formal program and assign sufficient resources to continue open communication to enhance the reactor oversight process. The process should accumulate lessons learned, pursue multiple avenues for all stakeholders to provide feedback, give stakeholders feedback as to the resolution of their questions, and include an infrastructure to make timely program changes.

Issue: (O-2) Public access to timely and clear reactor oversight information
Priority: 1
Primary Program Goals: Public Confidence/Understandable

Issue Description: The staff made significant improvements to the public's access to plant performance information during the initial implementation period. They established a substantial web site that displayed information about the reactor oversight process to the public and response to the web site was generally very positive.

However, much remains to be done to make the reactor oversight process understandable and accessible to external stakeholders. Early on, it appeared that the public and media based their perception of the new process solely on the performance indicators because of how the indicators were highlighted on the web page. This perception caused a few stakeholders to believe that the NRC had abandoned the resident inspector program. Most stakeholders did not understand how insights from both performance indicators and inspection findings were used in consonance to make an assessment of overall performance.

The staff has made improvements to the structure and format of the web pages to address this perceptual problem to enhance public confidence in the process. The web page needs

additional improvements, however, and progress could be made by something as simple as starting with overview information and providing layered access to more detailed information. For example, the public information could be organized by an overview of each plant's performance based on the action matrix outcomes, with all of the site-related documents linked to the individual site pages. This page could include a status board posting the status of enforcement items and inspections so that the public does not have to conduct exhaustive searches to understand the status of important issues at the plant in their locale. The timely posting of information is also important to enhancing public confidence.

Panel Recommendation: Evaluate additional improvements to the reactor oversight information on the web page to improve and simplify public access to the information. Engage the NRC's Office of Public Affairs to identify methods for improving public communication outreach efforts. Revise the reactor oversight process communications plan, as appropriate, and dedicate the appropriate resources to meeting these outreach goals.

Issue: (O-3) Long-term program effectiveness
Priority: 1
Primary Program Goals: Maintain Safety/Efficiency and Effectiveness/Public Confidence

Issue Description: The panel recognizes and agrees with the concern that members and stakeholders have shared that there are limits to what we may learn from a one year test of the reactor oversight process. The staff should evaluate the long-term effectiveness of the program to decide if the performance indicators and inspection findings will identify plants with poor performance. The reactor oversight process was based on certain presumptions and assumptions (e.g., licensee corrective action programs are mature and support the basis for the licensee response band concept; degraded performance will reveal itself by ever increasing significant issues and tripped performance indicator thresholds; all violations of NRC regulations do not require specific follow-up by the NRC). As sufficient information and experience is attained premises will either be confirmed or refuted. Whatever the answer is, there must be a validation process. In addition, unintended consequences will likely result from the program elements, such as seen with some performance indicators (See P-1). The final oversight process must be focused on the preclusion of any potential for false negatives, while striving to minimize the number of false positives.

The PPEP recommended that the staff continue to monitor industry-wide implementation such that when a risk-significant event occurs, the event-specific response requires reevaluation of the performance indicators and inspection results to address the question of whether they missed a crosscutting or common-mode failure issue. They also concluded those program assumptions had not been tested sufficiently.

Panel Recommendation: Establish a structured ongoing process to evaluate long-term program effectiveness and to test program assumptions. This would include integrating, as a minimum, the insights of the reactor oversight process self-assessment process and the overall assessment of industry performance. The staff should also consider engaging, on a periodic basis, both internal and external stakeholders to provide an independent assessment of the reactor oversight process.

Issue: (O-4) Crosscutting issues

Priority: 1
Primary Program Goals: Maintain Safety/Public Confidence

Issue Description: During the development of the reactor oversight process, and during its initial implementation, some inspectors were concerned about the identification and disposition of crosscutting issues. The concern was that licensee performance in the crosscutting areas of human performance, safety conscious work environment, and problem identification and resolution, could become degraded without being detected by the baseline inspection program and performance indicators. The reactor oversight process addresses crosscutting issues by highlighting them in inspection reports when they are notable contributors to inspection findings or if an appreciable trend or pattern has emerged. The staff further amplifies these concerns in assessment letters to the licensee when they constitute a substantive issue.

The current process does not have sufficient criteria, thresholds, and definitions of crosscutting issues to ensure consistency in dispositioning these issues. In addition, there is no predefined NRC action if the inspection program identifies a deficient corrective action program. The reactor oversight process does not allow for additional NRC engagement on crosscutting issues unless they are contributing causes to performance indicators or inspection findings that they have characterized as White or greater. Some inspectors are also concerned about the lack of a process to handle low level human performance trends when it appears that NRC actions could prevent a significant performance issue from occurring. The industry believes the reactor oversight process should focus on performance outcomes, of which crosscutting issues are but one possible cause.

One premise of the reactor oversight process was that either performance indicators or inspection findings would detect degradation in the crosscutting areas in a sufficiently pro-active time to allow for agency action to protect public health and safety. Early data obtained from initial implementation suggests that there is a correlation between crosscutting issues and crossed thresholds consistent with the premise of the program (e.g., the number of crosscutting issue findings per plant appears to increase as you move to the right in the action matrix).

The PPEP final report highlighted the divergent views on the identification and disposition of crosscutting issues.

Panel Recommendation: Continue the efforts of the crosscutting issues task force and clarify the program guidance regarding identification and disposition of crosscutting issues.

Issue: (O-5) Basis of Green-to-White Thresholds
Priority: 1
Primary Program Goals: Public Confidence/Understandable

Issue Description: The bases for the performance indicator Green/White thresholds are not risk-informed. The thresholds were selected to identify the 95 percent performance level (i.e., industry outliers). Since NRC action is the same for both White performance indicators and White inspection findings, which are risk informed, several problems have resulted. First, there is a difference between the NRC's and the licensee's perception regarding the impact and importance of White issues. Second, it is difficult to communicate to external stakeholders that a White performance indicator may not be risk-significant when the NRC increases its

regulatory response according to the action matrix. This directly undermines public confidence in the NRC as a fair and competent regulator.

Panel Recommendation: Evaluate lessons learned from initial implementation to achieve parity in the treatment of risk-significant inspection findings and crossed performance indicator thresholds and to ensure that the significance of the outcomes from the performance indicators and inspection findings accurately reflect the significance of the specific issues. The staff should consider addressing this issue by adjusting the Green/White thresholds or modifying the columns of the action matrix.

Performance Indicators

The integration of Performance Indicators (PI) into the NRC's reactor oversight process has provided objective measures by which the NRC can assess licensee performance. Additionally, performance indicators have shown themselves to be data that licensees can accurately report without an excessive burden, and the public can easily understand the performance data. The initial implementation period has verified that the performance indicators can focus both licensee and NRC attention on issues that are either risk significant or relevant to promoting desired performance. The panel has confirmed at least one unintended consequence associated with performance indicators, specifically the misunderstanding that can occur because the Green-White threshold for performance indicators is not related to risk, as with inspection findings.

Issue: (P-1) Unintended negative consequences of performance indicators
Priority: 1
Primary Program Goals: Maintain Safety/Unnecessary Regulatory Burden

Issue Description: The use of performance indicators creates the potential for an unintended negative consequence when the performance indicator measures both desirable actions and performance issues. This practice could lead to non-conservative decisions by licensees. In addition, there may be unnecessary regulatory burdens imposed when the NRC takes action based, in part, on licensee actions that are desirable and appropriate.

The staff has noted some examples where licensees have altered normal operating and maintenance practices solely to reduce situations that may lead to crossing a performance indicator threshold. For example, the Unplanned Power Change performance indicator may cause a licensee to delay needed equipment repairs for 72 hours to avoid counting a power reduction. In contrast, a plant that conducts equipment repairs in a well-planned manner, but less than 72 hours, may be perceived as a poor performer by taking the appropriate action. Another example is the Safety System Unavailability performance indicator, which includes unavailability time for planned preventive maintenance as well as unplanned corrective maintenance and equipment failures. A licensee may consider delaying discretionary maintenance if they are getting near the performance indicator threshold. Despite these concerns, there have not been any known instances, to date, of any unsafe actions by a licensee because of the performance indicators.

Panel Recommendation: The staff's reactor oversight process self-assessment process should continuously identify and evaluate any instances of unintended consequences or unnecessary regulatory burdens caused by the performance indicators and make program adjustments where appropriate.

Issue: (P-2) New performance indicators
Priority: 2
Primary Program Goals: Maintain Safety/Risk-informed

Issue Description: Some current performance indicators and associated thresholds do not directly correlate with risk. This situation causes the application of the action matrix to sometimes appear inconsistent and calls into question the value of some performance

indicators as an input to performance assessment. For example, some emergency preparedness and physical security performance indicators do not directly correlate to risk to public health and safety, but are rather intended to identify weaknesses in licensee programs. The staff specifically avoids the identification of such weaknesses in the more risk-focused cornerstone areas.

Panel Recommendation: Continue the efforts to identify and evaluate improvements to performance indicators. The staff should thoroughly evaluate any significant changes to the performance indicators following the structured process in draft Inspection Manual Chapter 0608, "Performance Indicator Program." Further, they should evaluate any significant changes in the scope of information provided by performance indicators for its associated impact on the action matrix, the breadth and scope of the baseline inspection program, and any additional costs and benefits.

Note: The panel cautions the staff not to eliminate a performance indicator solely because it does not provide risk-informed information. The performance indicator may provide information useful for enhancing public confidence. In this case, they may need to adjust the threshold.

Issue: (P-3) Safety System Unavailability performance indicators
Priority: 1
Primary Program Goals: Maintain Safety/Risk-informed/Understandable

Issue Description: The largest percentage of performance indicator frequently asked questions (FAQs) during initial implementation involved the safety system unavailability performance indicators. There are many issues and concerns regarding the definitions and guidance for these indicators. The performance indicator definition of what is considered equipment unavailability is different from that used by other NRC and industry programs that monitor or consider unavailability of safety equipment (e.g., maintenance rule; licensee's probabilistic risk assessment). The major hurdle to overcome in resolving this problem is determining whether the unavailability to be measured is against the design basis or the risk analyses (i.e., operable versus functional). For example, considerations for allowed operator recovery actions are limited in this indicator, but are allowed in other programs.

Other issues that have resulted in extensive discussion are how to treat fault exposure hours and what allowances should be made for planned overhaul maintenance when a quantitative risk assessment has been previously performed and approved by the NRC. The large number of generic and site-specific exceptions to what equipment unavailability is counted in these performance indicators has made them difficult to understand and may erode public confidence. Finally, these indicators also measure appropriate actions by the licensee, such as planned preventive maintenance, so there is a potential for negative unintended consequences (See P-1).

Panel Recommendation: Expedite the efforts to resolve the concerns regarding the consistency of the safety system unavailability performance indicators and implement any needed revisions to NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," to achieve consistency with other applications.

Issue: (P-4) Frequently Asked Questions

Priority: 2
Primary Program Goals: Understandable/Efficiency and Effectiveness

Issue Description: During initial implementation of the reactor oversight process, licensee and NRC staff members asked many questions regarding the performance indicator guidance. These questions were specifically documented, answered and posted on the NRC's reactor oversight process web site. Although this was a useful approach for clarifying and interpreting the guidance in NEI 99-02, the large number of questions made it difficult for the stakeholders to maintain a current understanding of the guidance for the performance indicators. In addition, the inspectors noted that some licensees would use site-specific answers to the questions out of context when applying it to their specific situation.

Panel Recommendation: Continue efforts to incorporate the answers to frequently asked questions into the performance indicator guidance document, NEI 99-02, and to make the answers more generic where possible.

Inspection

The new inspection process has been effective in focusing the NRC's inspection efforts. The combination of Baseline and Supplemental inspections provides sufficient coverage of the attributes of the seven safety cornerstones. The planning for both the overall inspection effort at a given site and for the selection of individual procedural samples has been more risk-informed. The improvements in procedural guidance have focused NRC resources on reviewing and assessing performance as opposed to providing subjective views of various licensee processes and programs. The new procedural guidance, being more objective and risk-informed, has also improved the consistency between the regions and the individual inspectors. Since the outcomes of the new inspection program are more risk-informed, the dialogue between the licensee and NRC is now primarily focused on safety. Licensees have also raised concerns with the physical protection cornerstone inspections of force-on-force drills.

Issue: (I-1) Appropriate level of baseline inspection
Priority: 2
Primary Program Goals: Efficiency and Effectiveness/Unnecessary Regulatory Burden

Issue Description: The inspection resource expenditures are not appreciably different between the reactor oversight process and the previous inspection program. The staff has noted wide ranges in actual resource expenditures, however, for certain procedures during the first year of implementation. Licensees have commented that specific cornerstones, such as occupational radiation exposure, appear to have too many resources applied when licensee performance trends and the previous inspection program are considered objectively (e.g., inspection resources have increased although overall occupational exposure has decreased).

The PPEP recommended that the resource levels required to plan and implement the baseline inspection program be evaluated during industry-wide implementation, but cautioned that program effectiveness not be measured solely based on increases or decreases in resource utilization. They also recommended that the appropriateness of the inspection frequency and scope continue to be assessed during industry-wide implementation.

Panel Recommendation: Evaluate inspection findings and performance indicator results for the first year's implementation and determine the appropriate level of effort to ensure risk-significant areas for each baseline inspection procedure are adequately assessed. Modify the program as appropriate.

Issue: (I-2) Inspection Report documentation threshold
Priority: 2
Primary Program Goals: Public Confidence/Efficiency and Effectiveness

Issue Description: The staff significantly revised the program guidance for documenting inspections for the reactor oversight process to provide a more structured process to decide the issues to be documented. NRC Inspection Manual Chapter 0610*, "Power Reactor Inspection Reports," raised the documentation threshold by eliminating discussions of positive performance attributes and the issues associated with minor violations, licensee identified findings, and non-regulatory issues (such as general weaknesses in programs or inspector

observations) from the reports. The staff implemented these documentation changes, in part, to address industry concerns that subjective performance observations and inspector opinions that had been in past reports that were not based on regulatory requirements and had not manifested themselves in any observable performance problems. In parallel with development of the reactor oversight process, the Office of Enforcement also developed improved guidance to clarify the threshold for minor violations. This guidance was incorporated into MC 0610*. With the higher threshold for issues discussed in the inspection reports, some stakeholders are concerned that they may receive less performance information than in the previous program. Contrarily, some stakeholders have noted that the more focused, albeit reduced, information in inspection reports allows for a more effective identification of significant regulatory and performance issues. Some inspectors are also concerned that they may miss low-level performance trends if they do not include them in the inspection reports. Stakeholders have also expressed a concern that the staff is not consistently implementing the new report documentation thresholds.

NRC Inspection Manual Chapter 2515, "Light Water Reactor Inspection Program - Operations Phase," endorses action by inspectors to provide licensees well-considered insights beyond those to be documented in the inspection report. Although the documentation threshold has changed, most licensees request that inspectors continue to share all of their non-regulatory observations at exit meetings. Since these observations do not meet the report documentation threshold, they do not provide them to the public. This practice creates the appearance that relevant performance information is being intentionally withheld from the public. Some external stakeholders have suggested that all exit meetings should be open to the public to address this concern.

Panel Recommendation: The new documentation threshold for issues that have a defined level of safety or regulatory significance is appropriate. Inspection observations and insights that do not meet the defined threshold should continue to be communicated verbally to licensees for their consideration. The staff should evaluate and revise guidance to inspectors as necessary to clarify and promote consistency. Continue conducting periodic audits of inspection reports to identify and correct inconsistencies.

Issue: (I-3) Physical protection cornerstone inspections
Priority: 1
Primary Program Goals: Objective/Unnecessary Regulatory Burden

Issue Description: Licensees have expressed concern regarding the NRC's approach to inspecting the licensee's response to contingency events (i.e., force-on-force drills) and the application of the physical protection significance determination process (See S-5). During initial implementation, the staff essentially removed the inspection of force-on-force exercises from the baseline inspection procedure. A limited continuation of the Operational Safeguards Response Evaluation (OSRE) inspections was directed, until a permanent resolution of how best to assess contingency event response was determined. The industry has proposed a pilot program for industry-conducted drills and exercises (SECY-01-0060). The industry has requested that self-assessment initiatives be considered as part of the inspection process similar to how the staff handles the evaluation of emergency drills in the emergency preparedness cornerstone.

Panel Recommendation: Reevaluate the inspection approach for the physical protection cornerstone and revise the inspection program, as necessary, following action on the pending safeguards performance assessment pilot program and physical security rulemaking.

Issue: (I-4) Event response
Priority: 2
Primary Program Goals: Efficiency and Effectiveness/Public Confidence/Predictable

Issue Description: During initial implementation of the reactor oversight process, the staff used draft Management Directive 8.3, "Incident Investigation Program," to make decisions regarding the agency's response to events and significant conditions. The draft MD revised the incident response guidance to include preliminary risk-insights in the decision-making process, but they retained the previous narrative criteria. The staff gained some experience during the first year and problems with the procedure were noted. For example, for the first several days following an event, the necessary facts needed to conduct a useful risk assessment are often not available. In several other cases, they identified significant plant conditions that were too complex for a quick risk assessment.

[consider deleting I-4 because MD 8.3 was issued on March 27]

Panel Recommendation: Update Management Directive 8.3 and supporting procedures to incorporate lessons learned from the first year and to clarify the decision-making considerations.

Issue: (I-5) Use of licensee self-assessment information
Priority: 2
Primary Program Goals: Unnecessary Regulatory Burden/Efficiency and Effectiveness/Public Confidence

Issue Description: In the previous inspection program, there were cases where the NRC did not conduct portions of specific team inspections if the licensee had conducted a rigorous self-assessment of the same area and placed the self-assessment in the public domain. The staff outlined this process in Inspection Procedure 40501, "Licensee Self-Assessments Related to Team Inspections." When NRC management approved the use of this procedure as an alternative to independent NRC inspection, the staff reviewed the scope and results of the licensee's self-assessment, the qualification of team members, and monitored ongoing portions of the licensee's review. The reactor oversight process has not provided this flexibility for regulatory burden reduction. While this approach did not save a significant amount of NRC inspection resources, it did provide a significant reduction of regulatory burden imposed on the licensees. Contrarily, it could reduce public confidence in the NRC as an independent regulator.

Panel Recommendation: Once sufficient experience has been attained with the reactor oversight process, review the results and evaluate the feasibility of allowing licensee self-assessments instead of certain aspects of the baseline team inspections under defined circumstances.

Significance Determination Process

The significance determination process (SDP) has shown that risk information can be used in a systematic, practical, and repeatable manner. It has given NRC inspectors an objective process for consistently characterizing inspection findings, and it has provided the NRC improved tools to assess in prioritizing emergent issues and selecting individual inspection samples. The SDP has focused both NRC and licensee attention on the risk associated with identified issues, as opposed to focusing attention and resources on the compliance implications. The benefits associated with using an SDP to place all inspection insights into a risk-informed context has also led to the greatest challenge posed by SDPs. The breadth of potential issues and the uniqueness of each plant's design and associated risk profile is leading to a highly complex and time-consuming process that is challenging public confidence as much as it is enhancing it.

Issue: (S-1) Process for evaluating and communicating SDP conclusions
Priority: 2
Primary Program Goals: Efficiency and Effectiveness/Understandable

Issue Description: Experience with implementation of the significance determination process during the first year was that the final risk characterizations are frequently untimely and the process is not always transparent to the licensees and external stakeholders.

Inherent to the significance determination process, is the fact that regional risk analysts and inspectors discuss technical information and risk analysis assumptions with the licensee's technical staff. These discussions are used to ensure the NRC's risk analysis is technically sound, but has given the perception to many stakeholders that the finding is being debated out of the public view. Several external stakeholders have expressed concern that "negotiations" occur between the NRC staff and licensees during the risk characterization process. Some stakeholders have suggested that all of the information used in the significance determination process, to include licensee probabilistic risk assessments, be docketed. Stakeholders have also observed that the communication of the basis for the final risk significance determination is not clear in all inspection reports, and does not provide sufficient information for any interested party to independently reconstruct the analysis.

The time and resource commitment to process individual potential non-Green issues has been higher than expected, and many final determinations have not met agency timeliness goals. Stakeholders have observed that excessive time is also spent resolving disagreements and appeals of Green inspection findings, which appears contrary to being risk-informed and efficient.

The PPEP noted that the staff needs to better align the timeliness of significance determination process evaluations and safety significance by shortening the turnaround time on Phase 3 evaluations. They also recommended that the process for interactions between the NRC and licensee during significance determination process evaluations be better defined, and that attention be focused on explaining the basis for color assignments.

Panel Recommendation: Use lessons learned from the initial implementation of the reactor oversight process to improve the process for evaluating and communicating significance determination process conclusions in a timely and open manner.

Issue: (S-2) Fire Protection SDP
Priority: 1
Primary Program Goals: Efficiency and Effectiveness/Understandable

Issue Description: Application of the fire protection significance determination process during the first year identified that it was excessively complex and subjective. This has limited its usefulness as a tool in evaluating some fire protection findings. Besides the complexity of the fire protection significance determination process, the resulting risk characterization of the findings did not seem consistent with findings in other cornerstone significance determinations.

Panel Recommendation: Review lessons learned from use of the fire protection significance determination process, and improve the risk characterization tool to make it more effective and efficient.

Issue: (S-3) Significance Determination Process Phase 2 Worksheets
Priority: 1
Primary Program Goals: Efficiency and Effectiveness/Regulatory Burden

Issue Description: The primary tools to be used by inspectors in determining the risk-significance of reactor safety cornerstone inspection findings, the Phase 2 worksheets, were not available to the inspectors during initial implementation. The draft Phase 2 worksheets did not accurately reflect the current site probabilistic risk assessments and equipment configurations. It was necessary for the regional risk analysts to perform more resource intensive Phase 3 analyses on all potential non-Green reactor safety issues to determine the risk significance of findings. The lack of adequate Phase 2 worksheets negatively affected the effectiveness and efficiency of the reactor oversight process during the first year.

The PPEP highlighted the importance of having plant specific significance determination process worksheets before industry-wide implementation.

Panel Recommendation: Validate and issue the revised reactor safety significance determination process Phase 2 worksheets.

Issue: (S-4) Quality of NRC PRA tools
Priority: 1
Primary Program Goals: Maintain Safety/Public Confidence

Issue Description: The reactor oversight process relies on the quality and consistency of the probabilistic tools used by the NRC risk analysts and inspectors as a basis for their risk characterizations and decisions. Currently, the NRC relies heavily on the individual plant probabilistic risk assessment developed by the licensees, but the quality of these tools vary. The lack of validated Phase 2 worksheets magnified this concern during initial implementation (See S-3). For some findings that reached the Phase 3 analysis stage, the licensees with state-of-the-art tools felt penalized when the staff used their more sophisticated results to

determine the risk significance of an issue. Their concern was based on the notion of predictability since the calculated risk-significance may have been less with a less sophisticated tool. The lack of defined standards for methods and models also hampers the staff's ability to have timely and consistent results when evaluating findings.

Panel Recommendation: Continue efforts to provide improved and standardized risk analysis tools to the reactor analysts.

Issue: (S-5) Physical Security SDP
Priority: 1
Primary Program Goals: Efficiency and Effectiveness/Risk-Informed

Issue Description: The physical security significance determination process was initially aligned to the reactor safety significance determination process. The staff showed that the use was problematic in several cases identified during initial implementation. The significance determination process results seemed inconsistent with the actual risk significance. The staff made interim revisions to the physical security significance determination process to incorporate direction contained in COMSECY-00-0036.

Panel Recommendation: Continue development of an improved significance determination process for the physical security cornerstone.

Issue: (S-6) Definition of a performance issue
Priority: 2
Primary Program Goals: Unnecessary Regulatory Burden/Efficiency and Effectiveness

Issue Description: Early in the implementation of the reactor oversight process, the staff developed guidance in NRC Inspection Manual Chapter 0609, "Significance Determination Process," that required inspectors to demonstrate a licensee performance deficiency before entering the significance determination process. This policy caused concern among some inspectors because it had the potential to appear that the NRC was not dispositioning risk-significant issues simply because they had not established a clear performance deficiency. In addition, the staff had difficulty developing a licensee performance deficiency if the licensee could not establish a root cause for an equipment failure. There is a potential to erode public confidence by giving the appearance that the NRC is not taking consistent actions on risk-significant issues.

Panel Recommendation: Use lessons learned during initial implementation to clarify the definition of a performance issue.

Issue: (S-7) Development of SDPs for other areas
Priority: 1
Primary Program Goals: Efficiency and Effectiveness/Predictable

Issue Description: During the first year of implementation, the established significance determination process did not provide an effective tool for evaluating all inspector findings in certain areas (e.g., the staff identified the need for effective significance determination tools concerning shutdown, containment, and external events). The staff cannot easily assess other

process-oriented inspection findings, such as those involving inadequate application of the maintenance rule, with the existing significance determination process unless there is a measurable impact on plant equipment.

Panel Recommendation: Evaluate the need for other significance determination tools. The staff should carefully evaluate any potential changes against agency goals. For example, a new significance determination process that may increase regulatory burden should have a corresponding improvement in public confidence or agency effectiveness.

Issue: (S-8) ALARA SDP
Priority: 1
Primary Program Goals: Efficiency and Effectiveness/Unnecessary Regulatory Burden

Issue Description: During initial implementation of the reactor oversight process, the staff experienced problems when using the ALARA significance determination process. The significance determination process screened out all issues identified at plants that had a three-year average collective dose equal to or below the screening criteria based on the median industry performance. The unintended consequence of this significance determination process structure is that the inspectors cannot document the individual occurrence of an ALARA failure at these better performers in the inspection report, but they document the identical finding at a plant above the screening criteria. In addition, the staff designed the significance determination process structure to evaluate the licensee's performance in ALARA on a per job basis, but they have not defined a job. Some stakeholders have commented that the significance determination process screening criteria are an inappropriate, de facto, definition of ALARA for occupational doses at nuclear power plants.

Panel Recommendation: Evaluate lessons learned from initial implementation and revise the ALARA significance determination process, as necessary.

Issue: (S-9) Evaluation of SDPs
Priority: 1
Primary Program Goals: Maintain Safety/Efficiency and Effectiveness

Issue Description: The significance determination process tools are a key element in ensuring the effectiveness of the reactor oversight process. The use of the significance determination process Phase 2 tools has been very limited because they were not available for much of initial implementation. Therefore, it is important that a process be put in place to periodically evaluate and identify improvements in the significance determination process tools. In addition, the evaluation process needs to include a sampling of the results from the significance determination process to help ensure it has not underestimated risk characterization determinations (i.e., false negatives).

Panel Recommendation: Establish a formal process to periodically review the effectiveness of the significance determination process.

[should S-9 be deleted and rolled up in O-1]

Assessment and Enforcement

The assessment process associated with the reactor oversight process has, effectively, eliminated the arbitrary and subjective commentary that was common to previous assessments (SALP). The use of a preconceived Action Matrix, which takes objective performance indicators and inspection findings placed into a risk-informed context, has made the determination and communication of NRC actions more streamlined and predictable. This has helped public confidence by providing a clear road map for understanding agency-licensee interactions and regulatory decisions. Enforcement actions are now performance-based, with an emphasis on placing the significance of the noncompliance into a safety context and ensuring that the licensee is taking corrective actions. Under the new assessment schema, the response of the NRC is initiated when they ascertain the significance of the performance problem, rather than waiting for the results of the cumbersome and subjective regulatory process, such as with the previous SALP and Senior Management Meetings. A clear challenge to the efficiency and effectiveness of the new process has been identified, however. The guidance concerning agency decisions is emphasizing risk-based criteria as opposed to risk-informed. This could encourage protracted "PRA battles" that will negate the timeliness of NRC actions and reduce the public's confidence in the new program's effectiveness at maintaining safety.

Issue: (A-1) Length of time inspection finding is included in action matrix
Priority: 1
Primary Program Goals: Unnecessary Regulatory Burden/Understandable

Issue Description: According to NRC Inspection Manual Chapter 0305, "Operating Reactor Assessment Program," a non-Green inspection finding is normally carried forward in the assessment process (i.e., action matrix) for a total of four calendar quarters. Performance indicators are recalculated quarterly. Licensees have proposed that there be a graded approach for how long findings remain active rather than the fixed one year. Considering the risk significance of the various findings, it may be beneficial to establish a graded approach as to when to reset of the inspection finding in the action matrix.

Panel Recommendation: Evaluate the feasibility of a graded approach as to when non-Green inspection findings should be reset as entry conditions into the action matrix.

Issue: (A-2) Purpose of the Regulatory Conference
Priority: 2
Primary Program Goals: Public Confidence/Efficiency and Effectiveness/Understandable

Issue Description: The purpose of a Regulatory Conference is to gain a complete understanding of the risk significance of an inspection finding and to obtain information pertinent to understanding any apparent violations. During initial implementation of the reactor oversight process, stakeholders noted that the objectives of the regulatory conferences were not clear. The structure of the regulatory conferences appeared to be very similar to that of the enforcement conferences in the previous program. The participation of enforcement staff and technical staff in the regulatory conferences sometimes focused the meeting discussion on enforcement and corrective actions rather than on the determination of the risk significance of the issue. Additionally, licensee and NRC managers have expressed discomfort with holding

meetings concerning a potentially risk-significant issue and not including all potential decision-makers.

Panel Recommendation: Clarify the guidance regarding the objectives and structure of the regulatory conferences and communicate this guidance to the external and internal stakeholders.

Issue: (A-3) "No color" inspection findings
Priority: 1
Primary Program Goals: Understandable/Public Confidence

Issue Description: The reactor oversight process has proceduralized the use of "no color" findings. The role of no color findings, however, is not clear and has contributed to program inconsistencies and confusion among many stakeholders. No color findings are associated with specific extenuating circumstances listed in NRC Inspection Manual Chapter 0610*. These findings typically address regulatory issues that are more than minor violations, but do not meet the threshold for entry into the existing cornerstone significance determination process. The staff intended these issues to be associated with traditional enforcement issues that are: actions that are willful or will impede the regulatory process; substantive crosscutting issues; issues of an agency-wide concern; or an open item from a Licensee Event Report. Early in the process, the staff guidance was nonspecific and the result was the appearance of a new finding classification.

Licensees are concerned that these findings may be inappropriately used to artificially inflate the significance of individual issues; likewise, they believe that many of the issues do not warrant inclusion in inspection reports. External stakeholders have noted that the staff has established a new undefined category of findings, which is exacerbated by the fact that they are colored blue on the NRC's web page, and that their role in the process is not understandable.

Panel Recommendation: Reevaluate and clarify the program guidance regarding the designation, definition, and use of what are presently termed no color findings, and develop a more appropriate term for these issues.

Issue: (A-4) Multiple related inspection findings
Priority: 2
Primary Program Goals: Unnecessary Regulatory Burden/Efficiency and Effectiveness

Issue Description: It is not clear how the NRC should disposition multiple inspection findings that are related to the same technical problem or root cause. For example, would it be appropriate to characterize an inspection finding involving five related issues (3 green, 1 white, 1 yellow) as one finding or five separate findings? If they are handled as separate findings, the NRC response, as determined by the action matrix will be different than if they are considered one finding. Experience has shown that significant events and conditions are often caused by multiple performance failures.

Panel Recommendation: Develop clear policy guidance regarding the handling of multiple related inspection findings, and communicate the guidance to all stakeholders.

ROP Self-Assessment Process

Through briefings to the IIEP by the NRC staff and review of the preliminary self-assessment metrics, the panel evaluated the ROP self-assessment program to determine whether the developed program was sound and whether it included mechanisms for self-correction. The staff developed the self-assessment program to determine whether the ROP is meeting its objectives (including the agency performance goals), to gather information relative to overall industry performance, and to develop information to support possible improvements. The self-assessment program includes over 75 metrics for measuring the success of the overall ROP process and how effectively it supports the four ROP program elements (performance indicators, inspection program, significance determination process, assessment program). The metrics are aligned to the ROP objectives (risk-informed, predictable, understandable, objective) and the agency's performance goals (maintain safety, increase public confidence, increase effectiveness and efficiency, reduce unnecessary regulatory burden). The metrics are evaluated on a periodic basis using information from various sources, including the inspection program, performance indicators, periodic audits, stakeholder surveys, and public comments.

Based on the timing of the panel's activities and the parallel collection and assessment of self-assessment data, limited data and results were available for the panel to review. The self-assessment program is best described as noteworthy work in progress, which may require further enhancements and refinement based upon the evaluation of the data collected. Although individual panel members provided comments to the staff for consideration in further defining and revising the individual metrics, the panel, as a whole, took no consensus position on the overall adequacy and acceptability of the metrics. They are, even now, continuing to be refined by the staff and the data for assessing their overall efficacy is not available. Nevertheless, the panel concluded that the self-assessment process appears to have the elements to collect sufficient information to evaluate the program against the agency's performance goals. The panel, however, could not reach any overall conclusion regarding the effectiveness of the process because the assessment of the first year's data was not yet available. Notwithstanding the unavailability of the self-assessment results, the panel found that, for the most part, the same program issues identified by the panel during the course of its review had also been identified by the staff.

Attachment 1

UNITED STATES NUCLEAR REGULATORY COMMISSION CHARTER
REACTOR OVERSIGHT PROCESS INITIAL IMPLEMENTATION EVALUATION PANEL

1. The Committee's official designation:

   Reactor Oversight Process Initial Implementation Evaluation Panel (IIEP)

2. The Committees objectives and the scope of its activity:

   The NRC has implemented a revised reactor oversight process (ROP) for commercial nuclear power plant licensees. The ROP is described in NRC Inspection Manual Chapter 2515. Background information on the development of the ROP is contained in Commission papers SECY-99-007, "Recommendations For Reactor Oversight Process Improvements," dated January 8, 1999, SECY-99-007A, "Recommendations For Reactor Oversight Process Improvements (Follow-up to SECY-99-007)," dated March 22, 1999, and SECY-00-049, "Results of the Revised Reactor Oversight Process Pilot Program," dated February 24, 2000. These Commission papers describe the scope and content of performance indicator reporting, a new risk-informed baseline inspection program, a new assessment process, and revisions to the enforcement policy. Commission paper SECY-00-049 also describes the results from the Pilot Program Evaluation Panel (a previous Federal Advisory Committees Act (FACA) panel), including a recommendation from the panel to proceed with initial implementation of the ROP at all power reactor facilities. On March 28, 2000, the Commission approved initial implementation of the ROP, and on May 17, 2000, the Commission directed the NRC staff to convene another evaluation panel under FACA to evaluate the first year of implementation of the ROP. The staff has established this IIEP in response to the Commission's directions.

   The IIEP will function as a cross-disciplinary oversight group to independently monitor and evaluate the results of the first year of initial implementation of the ROP and provide advice and recommendations to the Director of the Office of Nuclear Reactor Regulation on reforming and revising the ROP. IIEP meetings will be announced to the public in advance and (unless closed according to the provisions of FACA) open to the public. Subject to the Freedom of Information Act, all material made available to or prepared for or by the IIEP will be made available to the public. Meetings will be transcribed and meeting summaries will be prepared following each meeting to document the results of the meetings. The transcripts and meeting summaries will be publicly available.

   The IIEP will evaluate the ROP results against performance measures. The IIEP will provide a written report containing an overall evaluation of the ROP to the Director of the Office of Nuclear Reactor Regulation. This report will include the consensus views of the panel, or the majority and minority views when panel consensus cannot be achieved. The NRC staff will use the IIEP evaluation as a major input to its deliberative process to determine what modifications, if any, are needed to the ROP following initial implementation.

3. The period of time necessary for the Committee to carry out its purpose:

Nine months

4. The NRC official to whom this Committee will report:

   Committee Chairman
   Loren Plisco
   Director, Division of Reactor Projects
   Region II

5. The NRC office and individual responsible for providing support for the Committee:

   Office of Nuclear Reactor Regulation

   Designated Federal Official
   John Monninger
   Technical Assistant, Associate Director for Inspection & Programs
   Office of Nuclear Reactor Regulation

6. A description of the duties for which the Committee is responsible, and if such duties are not solely advisory, a specification of the authority for such functions:

   The panel will provide advice and recommendations only.

7. The estimated annual operating costs, in dollars* and staff years, for the Committee:

   a. $120,000 (*Includes travel and per diem)

   b. 0.50 FTE

8. The estimated number and frequency of the Committee meetings:

   Approximately 3 meetings will be held, on an as needed basis, during the period the panel is in existence.

9. Organization - The IIEP will create any subcommittees which may be necessary to fulfill the IIEP's mission. In addition, NRC and IIEP will establish such operating procedures as are required to support the group, consistent with the Federal Advisory Committee Act, as amended.

10. The Committee's termination date, if less than two years from the date of establishment:

    July 31, 2001

11. Charter Filing Date:

    October 17, 2000 **/RA/**

    Andrew L. Bates
    Advisory Committee Management Officer
    Office of the Secretary of the Commission

Attachment 2

INITIAL IMPLEMENTATION EVALUATION PANEL MEMBERS

In selecting members for the Initial Implementation Evaluation Panel, the NRC considered interested persons and groups with professional, technical, or personal qualifications or experience which would contribute to the functions and tasks to be performed. The NRC considered several factors in appointing IIEP members including: (1) the requirements in 10 CFR Part 7, "Advisory Committees", directing balance in advisory committee membership in terms of the points of views represented and the functions to be performed, (2) Commission direction in the Staff Requirements Memorandum for SECY-00-0049 for a panel with a cross section of stakeholders similar to those who participated in the original evaluation panel, and with the addition of at least one resident inspector and one senior reactor analyst, (3) a desire for independence from the NRC Office (Office of Nuclear Reactor Regulation) responsible for development and oversight of the Reactor Oversight Process and a focus on those stakeholders most affected by the Reactor Oversight Process, and (4) a desire to provide both continuity and new perspectives in terms of the individual panel members selected.

Loren Plisco - NRC, Region II (Chairman)

Randolph Blough - NRC, Region I
Kenneth Brockman - NRC, Region IV
Richard Borchardt - NRC, Office of Enforcement *
Mary Ferdig - Benedictine University; Ferdig, Inc.**
Steve Floyd - Nuclear Energy Institute
David Garchow - PSEG Nuclear
Richard Hill - Southern Nuclear Operating Company
Rod Krich - Exelon Corporation
Robert Laurie - California Energy Commission
David Lochbaum - Union of Concerned Scientists**
James Moorman - NRC, Region IV (Senior Resident Inspector)
Steven Reynolds - NRC, Region III
Edward Scherer - Southern California Edison
James Setser - Georgia Department of Natural Resources
Raymond Shadis - New England Coalition on Nuclear Pollution**
James Trapp - NRC, Region I (Senior Reactor Analyst)

* Richard Borchardt, NRC Office of Enforcement, was originally appointed to the panel and participated in all panel activities through the fourth meeting of February 26-27, 2001. Subsequently, Mr. Borchardt was appointed to the position of NRR Associate Director for Inspection and Programs and assumed those duties as of March 19, 2001. In recognition of the desire for independence in panel membership from NRR, Mr. Borchardt decided to recuse himself of panel activities effective April 2, 2001.

** David Lochbaum was originally appointed to the panel and participated in the first panel meeting on November 1-2, 2000. He resigned from the panel on November 6, 2000. On December 4, 2000, Mary Ferdig and Ray Shadis were appointed to the panel.

Attachment 3

BIBLIOGRAPHY OF INITIAL IMPLEMENTATION EVALUATION PANEL ACTIVITIES

1. Results of the Revised Reactor Oversight Process Pilot Program, SECY-00-049, February 24, 2000, ADAMS ML003683227

2. Staff Requirements Memorandum - SECY-00-0049 - Results of the Revised Reactor Oversight Process Pilot Program (Part 2), May 17, 2000, ADAMS ML003715823

3. IIEP Charter, October 17, 2000, ADAMS ML003760300

4. Letter to General Services Administration, October 17, 2000, ADAMS ML003760307

5. Letter to Library of Congress, October 17, 2000, ADAMS ML003760327

6. Letters to Congressional Oversight Committees, October 17, 2000, ADAMS ML003763800

7. First IIEP Meeting Summary and Transcript, November 1-2, 2000, ADAMS ML003774521

8. Second IIEP Meeting Summary and Transcript, December 11-12, 2000, ADAMS ML010090359 & ML010530300

9. Third IIEP Meeting Summary and Transcript, January 22-23, 2001, ADAMS ML010530104

10. Fourth IIEP Meeting Summary and Transcript, February 26-27, 2001, ADAMS ML010880350

11. Fifth IIEP Meeting Summary and Transcript, April 2-3, 2001, ADAMS ML?

12. Sixth IIEP Meeting Summary and Transcript, April 25, 2001, ADAMS ML?

13. Final IIEP Report, May ?, 2001, ADAMS ML?

Attachment 4

SOURCES OF IIEP INFORMATION

December 11-12, 2000
- Bill Sherman, Vermont Department of Public Service
- Gary Wright, Illinois Department of Nuclear Safety

January 22-23, 2001
- Joseph Brady, NRC Senior Resident Inspector
- Sonia Burgess, NRC Senior Reactor Analyst
- Stephen Campbell, NRC Senior Resident Inspector
- Jeffrey Clark, NRC Senior Resident Inspector
- Steven Jones, NRC Senior Resident Inspector
- William Jones, NRC Senior Reactor Analyst
- Jill Lipoti, New Jersey Department of Environmental Protection
- James Trapp, NRC Senior Reactor Analyst
- Dennis Zannoni, New Jersey Department of Environmental Protection

February 26-27, 2001
- Victor Dricks, NRC Office of Public Affairs
- Steve Floyd, Nuclear Energy Institute
- Rich Janati, Pennsylvania Department of Environmental Protection
- Judith Johnsrud, ECNP, Sierra Club
- Steve Kerekes, Nuclear Energy Institute
- David Lochbaum, Union of Concerned Scientists
- Jenny Weil, McGraw Hill's *Inside NRC*

Attachment 4

From: A. Randolph Blough
To: Loren Plisco
Date: 5/4/01 12:52PM
Subject: Re: Draft IIEP Report

my comments:
1. page ii: move all the SDP (S) recommendations up, listing them right after the "Overall" recs (O).
Basis: since there are so many SDP recs, this area should be highlighted a little more by putting the recs closer to the front.
2. page iii, exec summ: . "During the year, the oversight process elements were (fully) **extensively** exercised and many experiences... ." replace "fully" w/ "extensively." Basis: not everything has been exercised, e.g., no plants were in the "unacceptable" perf category; we haven't done the agency annual meeting, etc.
3. page3, risk inf vs deterministic:
"The reactor oversight process, in many ways, is (**further**) ahead of the other regulatory processes in using risk insights. There is a conflict in implementing an emerging risk-informed oversight process while in a deterministic regulatory framework. ..... The reactor oversight process focuses on risk significant issues, while compliance is still required with regulatory requirements that are not risk-informed. It is this conflict that has contributed to many of the issues discussed in this report, (**such as the use of no color findings).**..."
delete highlighted mat'l.
Bases: first, grammar. second, implies that most no color findings are insignificant, but i believe many no color findings simply confound the current SDP tools.
4. page 4, indicative vs predictive:
(**"The staff intended this to be the predictive component of the new assessment process."**). Delete the entire sentence.
Basis: It is confusing to suggest a predictive element of the new ROP. I believe the element described is meant to provide "early indication of decline", not a "prediction" of the extent of future decline. this may be semantic, but, I believe, an important semantic.
5. back to the exec summ: i believe we should work in, somewhere, a statement to the effect that, the large number of recommendations in the SDP area reflects the fact that this is the newest tools in NRC reactor oversight and therefore has the most work remaining to fully develop and refine it.
6. Re: the minority view: i do not believe the panel composition affected the outcome, but i do believe that, in the future, we should include more state reps and members of the public. Basis: these folks are more likely to have competing demands on their time, so we should account for the fact that some may not be able to be with us 100% of the time...

I think the report in excellent and I'm proud to have been on the panel.
randy
>>> Loren Plisco 04/27/01 05:36PM >>>
Attached is a Wordperfect and Word version of the draft IIEP report. We have incorporated the comments from Wednesday's meeting, included a minority view, and resorted the issues to put the Priority 1s first in each section.

Please review the document and provide any comments, proposed revisions, or editorial changes to John and I by next Thursday. After I incorporate the comments I plan to sign out

the report. However, if there are some significant comments or concerns that look like we need the full panel consensus, we will go thru one more review cycle.

I do plan on having a parallel review by a technical editor to help clean up our English.

Thanks again for your diligent efforts and the great insights provided during this process.

CC: John Monninger

Attachment 5

From: <Ferdiginc@aol.com>
To: <JDM@nrc.gov>, <LRP@nrc.gov>
Date: 5/3/01 6:25PM
Subject: Re: IIEP Draft Final Report

John and Loren,

Please find the attached report. I regret I was unable to spend more time with it prior to the deadline--given some unplanned demands on my schedule since our last meeting. The changes I've suggested are primarily writing style with a couple of notable exceptions.

I've also made a suggestion about how to better characterize the "issues" and will offer further assistance to reframe the remaining issues outlined in the executive overview if needed.

I'm comfortable with the minority views and do not have a need to counter Ray's comments.

You have both done an excellent job in formulating this report. I appreciate the opportunity to have worked with you. Good luck!

By the way, if you need a couple of IIEP panel members to be present during the Commissioners' meeting when the Staff Report is presented, give a holler.

Warm regards,
Mary

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April 27, 2001 version with Panel Comments

DRAFT FINAL IIEP REPORT

MEMORANDUM TO: Samuel J. Collins, Director
Office of Nuclear Reactor Regulation

FROM: Loren R. Plisco, Chairman
Initial Implementation Evaluation Panel

SUBJECT: FINAL REPORT OF THE REACTOR OVERSIGHT PROCESS INITIAL IMPLEMENTATION EVALUATION PANEL

The Reactor Oversight Process Initial Implementation Evaluation Panel (IIEP) has completed its evaluation of the first year's implementation of the reactor oversight process. The panel's final report is attached.

Loren and John: Below are some suggested style changes that do not (I believe) change the meaning or content of the message but perhaps enhances readability. The suggestions are a carry-over from my days as technical writing coach. I shall not be offended if you chose to ignore.

In ~~its~~ the attached report, the panel provides an overall conclusion that the reactor oversight process (ROP) is a notable improvement over the previous licensee performance assessment program, and it should be continued. The reactor oversight process has made progress toward achieving the agency's four performance goals: 1) maintain safety, 2) increase regulatory effectiveness and efficiency, 3) reduce unnecessary regulatory burden, and 4) to increase public confidence. However, after careful analysis, t~~T~~he panel recommends~~, however, that the~~ specific actions be taken by the staff ~~take certain actions~~ to ensure ~~they achieve the~~ agency performance goals are achieved in the long-term; and further suggests ~~, and consider other~~ actions for staff consideration ~~to improve~~ to improve the process going forward.

As part of its evaluation, the panel reviewed the staff's self-assessment process and performance measures for the reactor oversight process. The panel concluded that the self-assessment process ~~has the~~utilizes ~~sufficient~~ and appropriate information ~~elements to collect sufficient information~~ needed to~~o~~ evaluat~~e~~e the ~~program~~ ROP [or process] against the agency's goals; however, ~~, but~~ the panel could not reach any overall conclusion regarding the effectiveness of the process ~~because the~~given that ~~assessment of the first~~ first-year~~'s~~ assessment data ~~was~~ are not yet available. Despite the unavailability of the final self-assessment results, the panel found that, for the most part, the staff had ~~also~~ identified ~~the same~~ program issues similar to those identified by the panel during its review.

The panel ~~consisted~~ consisted of members ~~with~~ representing broadly diverse interests and points of view~~s~~. ~~The panel discussed many concerns, views and opinions at length during its evaluation.~~ The open and constructive exchange ~~of individual perspectives by~~among panel members ~~brought out~~uncovered ~~many~~ a broad array of divergent opinions as they collectively evaluated emerging issues. The attached report reflects those issues ~~where~~ in which the panel reached a consensus. It is interesting to note that w~~W~~hile ~~we~~ the panel reached ~~a~~ consensus on the conclusions and recommendations included in the report, the bases for each member's agreement were frequently

different.

The objectives prescribed in the IIEP charter presented to the Congress have been completed. Unless directed otherwise, the panel will end its activities on July 31, 2001, as specified in the charter.

Attachment: As stated

REACTOR OVERSIGHT PROCESS

INITIAL IMPLEMENTATION EVALUATION PANEL

FINAL REPORT

MAY ?, 2001

ADAMS ML?

Table of Contents

Executive Summary

On May 17, 2000, the Commission directed the NRC staff to convene a panel under the Federal Advisory Committee Act, to evaluate the first year's implementation of the reactor oversight process. The Initial Implementation Evaluation Panel (IIEP) charter was issued on October 17, 2000, and the panel met six times between November 2000 and April 2001 to evaluate the results of the first year's implementation of the reactor oversight process.

The IIEP concluded that the reactor oversight process is a notable improvement over the previous licensee performance assessment program, and it should be continued. The staff has made progress in achieving the eight reactor oversight process goals, which include the agency's four performance goals.

[I urge you to consider the changes suggested in the following paragraph.]
The NRC and the nuclear industry expended substantial time and effort in communicating with training their respective staff members about the process changes and paradigm shifts embodied in the reactor oversight process. Although the change management tools used to communicate and carry out theimplement changes were generally successful, the panel identified three areas of continuing tension inherent in the reactor oversight process continues as athat reflect result of three fundamental changes in regulatory philosophy. that are inherent in the reactor oversight process. These changes in regulatory philosophy include: a focus on: maintaining safety versus improving safety,—; risk-informed regulation versus deterministic regulation,—; and indicative measures of performance versus predictive measures of performance. To a large extent, these regulatory changes provide the common denominator for the various issues identified by the panel. The tension caused created by these changes underlying shifts in perspective and hasphilosophy has impacted the staff's ability to totally achievedegree to which the eight goals of the reactor oversight process can ever be fully achieved and resulted inaccording to varying stakeholdervarious stakeholders' perspectives on about what constitutes a successful the success of the reactor oversight process. Continued management attention is needed to be responsive to the tension resulting from these philosophical changes.

An ancillary common concern raised by the panel members when reviewing all of the specific issues discussed in the report is the continuing need for sufficient resources to maintain the formal processes and infrastructure for the reactor oversight process. Continued NRC resources continue to beare needed to evaluate, pilot, communicate, and implement future program enhancements. Although a full year of implementation has provided many lessons learned, and the staff has already made many numerous process changes, there are many issues remain to be resolved and still other issues remain to be uncovered as the program process continues to be assessed. Of the issues evaluated by Tthe panel, identified the following the following were considered to be high-priority issues:

- [Because these items begin with an action verb they technically don't qualify as "issues;" instead they suggest actions for addressing issues. As an alternative, the issue for this item could be characterized as] ***Continued*** **communication interaction among ROP stakeholders is seen to be essential and will require appropriate resources going forward:** Establish a formal program and assign sufficient resources to continue open communication to enhance the reactor oversight process. The process should accumulate lessons learned, pursue multiple avenues for all internal and external stakeholders to provide feedback, give stakeholders feedback as to the resolution of their questions, and include an infrastructure to make timely program changes. (O-1)

- **Less than fully adequate public outreach strategies and efforts to provide sufficient access to self-explanatory website information:** Revise the reactor oversight process

communications plan, as appropriate, and dedicate the appropriate resources to meeting these outreach goals and engaging and informing the public on the process and its relationship to the mission of the agency in ensuring adequate protection of public health and safety. Evaluate additional improvements to the reactor oversight process information on the web page to improve and simplify public access to the information. Identify methods utilizing stakeholder input for improving public communication outreach efforts. (O-2)

- **Need for built-in provisions for continued assessment:** Establish a structured ongoing process to evaluate long-term program effectiveness and to test program assumptions. This would include integrating, as a minimum, the insights of the reactor oversight process self-assessment process and the overall assessment of industry performance. The staff should also consider engaging, on a periodic basis, both internal and external stakeholders to provide an independent assessment of the reactor oversight process. (O-3)

- **Potential for ambiguity of crosscutting issues:** Continue the efforts of the crosscutting issues task force and clarify the program guidance regarding identification and disposition of crosscutting issues. (O-4)

- **Lack of parity of responses for risk-informed inspection findings and crossed performance indicator thresholds:** Evaluate lessons learned from initial implementation to achieve parity in the treatment of risk-significant inspection findings and crossed performance indicator thresholds. The evaluation should ensure that the significance of the outcomes from the performance indicators and inspection findings accurately reflect the significance of the specific issues. The staff should consider addressing this issue by adjusting the Green/White thresholds or modifying the columns of the action matrix. (O-5)

- […and so on. I'll be glad to assist with language for remaining issues if you agree with this suggestion.] The staff's reactor oversight process self-assessment process should continuously identify and evaluate any instances of unintended consequences or unnecessary regulatory burdens caused by the performance indicators and make program adjustments where appropriate. (P-1)

- Expedite the efforts to resolve the concerns regarding the consistency of the safety system unavailability performance indicators and implement any needed revisions to NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," to achieve consistency with other applications. (P-2)

- Reevaluate the inspection approach for the physical protection cornerstone and revise the inspection program, as necessary, following action on the pending safeguards performance assessment pilot program and physical security rulemaking. (I-1)

- Validate and issue the revised reactor safety significance determination process Phase 2 worksheets. (S-1)

- Continue efforts to provide improved and standardized risk analysis tools to the reactor analysts. (S-2)

- Review lessons learned from use of the fire protection significance determination process, and improve the risk characterization tool to make it more meaningful, effective and efficient. (S-3)

- Continue development of an improved significance determination process for the physical protection cornerstone. (S-4)

- Evaluate the need for other significance determination tools. The staff should carefully evaluate any potential changes against agency goals. For example, a new significance determination process that may increase regulatory burden should have a corresponding benefit in maintaining safety or improving agency effectiveness. (S-5)

- Evaluate lessons learned from initial implementation and revise the ALARA significance determination process, as necessary. (S-6)

- Evaluate the feasibility of a graded approach as to when non-Green inspection findings should be reset as entry conditions into the action matrix. (A-1)

- Reevaluate and clarify the program guidance regarding the designation, definition, and use of what are presently termed no color findings, and develop a more appropriate term for these issues. (A-2)

[repeat from cover memo] As part of its evaluation, the panel reviewed the staff's self-assessment process and performance measures for the reactor oversight process. The panel concluded that the self-assessment process has the elements to collect sufficient information to evaluate the program against the agency's goals, but the panel could not reach any overall conclusion regarding the effectiveness of the process because the assessment of the first year's data was not yet available. Despite the unavailability of the final self-assessment results, the panel found that, for the most part, the staff had also identified the same program issues identified by the panel during its review.

The IIEP had the benefit of information obtained during the first full year of nationwide implementation of the reactor oversight process ~~for a year~~.. During the year, the oversight process elements were fully exercised and many experiences that exemplified concerns and issues were available for the panel's considerations. The panel observed that the staff has actively solicited stakeholder opinion throughout initial implementation, as they did during development and pilot stages of the reactor oversight process. We believe the level of stakeholder involvement has been unprecedented for an NRC process change and is reflected in the quality of the process. ~~The use of~~P ~~-~~public workshops, public meetings near all facilities, surveys, and formal internal feedback processes provided opportunities for valuable input to the staff ~~so they could~~as they sought to further ~~improve and~~ refine the reactor oversight process.

FINAL REPORT OF THE REACTOR OVERSIGHT PROCESS
INITIAL IMPLEMENTATION EVALUATION PANEL

Introduction

The NRC implemented, nationwide, a revised reactor oversight process for commercial nuclear power plant licensees on April 2, 2001. Background information on the development of the reactor oversight process and the results of the pilot program is contained in Commission papers SECY-99-007, "Recommendations for Reactor Oversight Process Improvements," dated January 8, 1999, SECY-99-007A, "Recommendations for Reactor Oversight Process Improvements (Follow-up to SECY-99-007)," dated March 22, 1999, and SECY-00-049, "Results of the Revised Reactor Oversight Process Pilot Program," dated February 24, 2000. These Commission papers described the scope and content of performance indicator reporting, a new risk-informed baseline inspection program, a new assessment process, and revisions to the enforcement policy. Commission paper SECY-00-049 also described the results from the Pilot Program Evaluation Panel (PPEP), including a recommendation from the panel to proceed with initial implementation of the reactor oversight process at all power reactor facilities. On March 28, 2000, the Commission approved initial implementation of the reactor oversight process.

On May 17, 2000, in Staff Requirements Memorandum SECY-00-049, the Commission directed the NRC staff to convene another evaluation panel under the Federal Advisory Committee Act, to evaluate the first year's implementation of the reactor oversight process. The Initial Implementation Evaluation Panel (IIEP) charter was filed with Congress on October 17, 2000, establishing a cross-disciplinary oversight panel to independently monitor and evaluate the results of the first year's implementation of the reactor oversight process and provide advice and recommendations to the Director of the Office of Nuclear Reactor Regulation on reforming and revising the reactor oversight process (See Attachment 1). The panel was made up of a cross section of stakeholders similar to those who participated in the PPEP, with the addition of an NRC senior resident inspector and senior reactor analyst, in response to the Commission's directions. The NRC selected the panel members to represent the views of diverse groups that had an expressed interest in the changes to the reactor oversight program (See Attachment 2).

Approach and Objectives

The IIEP conducted six meetings during the first year's implementation of the reactor oversight process. All meetings were open to the public with all meeting material being placed in the NRC's public document room. Additionally, the meeting notices, summaries, and transcripts were placed on the NRC's reactor oversight process web page. Attachment 3 provides a bibliography of the significant documents regarding the panel's activities.

The IIEP worked as a management level cross-disciplinary oversight group of experts to evaluate whether the new regulatory oversight can be effectively carried out and how the program compared in its execution to its overall objectives. The panel solicited and obtained additional views, to supplement the members' personal insights, from representatives of four states (New Jersey, Pennsylvania, Illinois, and Vermont), the Union of Concerned Scientists, the Nuclear Energy Institute, NRC resident inspectors, NRC senior reactor analysts, NRC Office of Public Affairs, and McGraw-Hill (See Attachment 4). The NRC staff members directly involved in the program development provided the status of the initial implementation and responded to questions and comments.

During the IIEP meetings, the panel discussed and generally agreed to the following objectives in carrying out its charter:

(1) Determine whether the reactor oversight process is achieving the following goals [I like your questions, but they don't communicate "goals"]:

- ~~Is it m~~Maintaining safety~~?~~
- ~~Is it i~~Increasing effectiveness and efficiency~~?~~
- ~~Is it i~~Increasing public confidence~~?~~
- ~~Is it r~~Reducing unnecessary regulatory burden~~?~~
- ~~Is it o~~Objective~~?~~
- ~~Is it r~~Risk-informed~~?~~
- ~~Is it p~~Predictable~~?~~
- ~~Is it u~~Understandable~~?~~

(2) Determine whether the more significant problem areas associated with the reactor oversight process have been identified.

(3) Determine whether the NRC has developed a sound self-assessment process for the reactor oversight process and, if so, does it include mechanisms for self-correction.

To accomplish ~~this~~these objectives, panel members were requested to provide a list of issues regarding implementation of the reactor oversight process. Panel member issues were compiled, ~~and~~ categorized, and integrated ~~along~~ with other issues raised to the panel during meetings. The issues were categorized according to the reactor oversight process elements (i.e., performance indicators, inspection, significance determination process, and assessment and enforcement). Those ~~, with the exception that certain~~ issues that were identified as ~~being~~ pertinent to all elements of the reactor oversight process ~~and, as such, they~~ were placed into an "overall reactor oversight process" category.

~~During the panel meetings, w~~With ~~the assistance of~~ a facilitator's assistance, the panel ~~considered~~ collectively evaluated the list of issues and developed ~~a~~ group consensus ~~as to~~regarding the description of the issue, its priority, the primary reactor oversight process goals affected, and recommendations for evaluating the issue. Consensus was defined in the panel bylaws as a process by which ~~no~~ panel members could express ~~one panel member~~ dissenting opinions for everyone to hear and understand and after full discussion agreed they ~~from the position taken, while in practice, it was generally interpreted as whether a panel member~~ "could live with" the group position taken~~.~~ on the issue.

Each ~~The~~ issue~~s~~ was~~ere~~ placed into one of two priorities. Priority 1 issues were defined as those issues that should receive high priority attention. Priority 2 issues were defined as issues ~~for the~~to be taken under further staff~~'s~~ consideration. Although the panel prioritized the various issues, they ~~panel~~ did not ~~take a position as to the relative~~identify a timetable within which the issues should be resolved. The panel recognized the complexity involved in resolution of some issues, and the necessity for additional time and information to fully evaluate solutions and the impact of any proposed changes. Furthermore, the panel did not discount the importance of an issue, or give credit in the prioritization of issues, based on initiatives the staff had underway or planned. In developing its recommendations, the panel ~~attempted to~~did not specify how to resolve the issues identified in this report. ~~Prior to the completion of the panel's activities, t~~During the evaluation time period, the staff addressed some of issues identified by the panel early in the process; ~~and, as a result, we~~ those issues have not been included ~~these issues~~ in this report.

Panel Conclusions and Recommendations

The IIEP concluded that the reactor oversight process is a notable improvement over the previous licensee performance assessment program, and it should be continued. The staff has made progress in achieving the eight reactor oversight process goals, which include the agency's four

performance goals.

The NRC and the nuclear industry expended substantial time and effort in ~~training~~ communicating with their respective staff members about the process changes and paradigm shifts embodied in the reactor oversight process. [Cut/pasted from previous section.] Although the change management tools used to communicate and carry out the changes were generally successful, the panel identified three areas of continuing tension inherent in the reactor oversight process that reflect fundamental changes in regulatory philosophy. These changes include a focus on: maintaining safety versus improving safety; risk-informed regulation versus deterministic regulation; and indicative measures of performance versus predictive measures of performance. To a large extent, these regulatory changes provide the common denominator for the various issues identified by the panel. The tension created by these underlying shifts in perspective and philosophy has impacted the degree to which the eight goals of the reactor oversight process can ever be fully achieved according to various stakeholders' perspectives about what constitutes a successful reactor oversight process. Continued management attention is needed to be responsive to the tension resulting from these philosophical changes.. ~~Although the change management tools used to communicate and carry out the change were generally successful, tension continues as a result of three changes in regulatory philosophy that are inherent in the reactor oversight process. These changes in regulatory philosophy include: maintaining safety versus improving safety, risk-informed versus deterministic, and indicative versus predictive. To a large extent, these changes are a common denominator for the various the issues identified by the panel. The tension caused by these changes has impacted the staff's ability to totally achieve the eight goals of the reactor oversight process and resulted in varying stakeholder perspectives on the success of the reactor oversight process. Continued management attention is needed to be responsive to the tension resulting from these philosophical changes.~~

- **Maintaining Safety versus Improving Safety:** One premise in the NRC's strategic plan is that the nuclear power industry's performance has improved substantially over the past ten years and nuclear reactors, collectively, are operating above acceptable safety levels consistent with the agency's Safety Goal Policy. The staff designed the reactor oversight process to assure the current level of safety is maintained. They have structured the program to take action to improve safety performance before it falls below acceptable levels, and not to continually improve the safety margins that currently exist. The determination that current nuclear industry performance is sufficient to assure public health and safety, versus regulating for continual improvement, is not given credence by some stakeholders and could limit increased public confidence in the program.

- **Risk-informed Regulation versus Deterministic Regulation:** The reactor oversight process, in many ways, is further ahead of the other regulatory processes in using risk insights. There is a conflict in implementing an emerging risk-informed oversight process while in a deterministic regulatory framework. One example of this is the integration of the significance determination process as part of NRC assessment program. This puts the inspector and licensee in a difficult situation. The reactor oversight process focuses on risk significant issues, while compliance is still required with regulatory requirements that are not risk-informed. It is this conflict that has contributed to many of the issues discussed in this report, such as the use of no color findings. An additional concern of some stakeholders is the perceived over reliance on existing risk analyses tools for regulatory decision making. In the long term, continued efforts to risk inform the regulations are needed to close the gap between the regulatory framework and the oversight process.

- **Indicative Measures of Performance versus Predictive Measures of Performance:** The reactor oversight process, by using performance indicator thresholds and the significance determination process, is an indicative process, whereas, the previous performance assessment process focused on identifying declining performance trends by using low-level performance issues in an attempt at being predictive. The presumption within the reactor oversight process is that the licensee's corrective action program best handles low-level performance trends, and that regulatory response is not required until a threshold is crossed. There is a related assumption, however, that a licensee will not normally directly pass from the licensee response column to the unacceptable performance column of the action matrix, allowing the NRC time to respond before plant performance is unacceptable. The staff intended this to be the predictive component of the new assessment process. Many concerns raised about crosscutting issues and inspection report thresholds come from discomfort with this presumption.

Though the panel focused its efforts on discussing areas needing improvement, they noted many positive attributes and outcomes. We have included some key positive comments in the introductory comments associated with each program element.

A summary of the ~~The~~ panel's ~~developed the following~~ recommendations appears below:

[Consider sorting according to Recommendations for Priority I Issues and Recommendations for Priority II Issues]

- Establish a formal program and assign sufficient resources to continue open communication to enhance the reactor oversight process. The process should accumulate lessons learned, pursue multiple avenues for all internal and external stakeholders to provide feedback, give stakeholders feedback as to the resolution of their questions, and include an infrastructure to make timely program changes. (O-1)

- Revise the reactor oversight process communications plan, as appropriate, and dedicate the appropriate resources to meeting these outreach goals and engaging and informing the public on the process and its relationship to the mission of the agency in ensuring adequate protection of public health and safety. Evaluate additional improvements to the reactor oversight process information on the web page to improve and simplify public access to the information. Identify methods utilizing stakeholder input for improving public communication outreach efforts. (O-2)

- Establish a structured ongoing process to evaluate long-term program effectiveness and to test program assumptions. This would include integrating, as a minimum, the insights of the reactor oversight process self-assessment process and the overall assessment of industry performance. The staff should also consider engaging, on a periodic basis, both internal and external stakeholders to provide an independent assessment of the reactor oversight process. (O-3)

- Continue the efforts of the crosscutting issues task force and clarify the program guidance regarding identification and disposition of crosscutting issues. (O-4)

- Evaluate lessons learned from initial implementation to achieve parity in the treatment of risk-significant inspection findings and crossed performance indicator thresholds. The evaluation should ensure that the significance of the outcomes from the performance indicators and inspection findings accurately reflect the significance of the specific

issues. The staff should consider addressing this issue by adjusting the Green/White thresholds or modifying the columns of the action matrix. (O-5)

- The staff's reactor oversight process self-assessment process should continuously identify and evaluate any instances of unintended consequences or unnecessary regulatory burdens caused by the performance indicators and make program adjustments where appropriate. (P-1)

- Expedite the efforts to resolve the concerns regarding the consistency of the safety system unavailability performance indicators and implement any needed revisions to NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," to achieve consistency with other applications. (P-2)

- Continue the efforts to identify and evaluate improvements to performance indicators. The staff should thoroughly evaluate any significant changes to the performance indicators following the structured process in draft Inspection Manual Chapter 0608, "Performance Indicator Program." Further, they should evaluate any significant changes in the scope of information provided by performance indicators for its associated impact on the action matrix, the breadth and scope of the baseline inspection program, and any additional costs and benefits. (P-3)

- Continue efforts to incorporate the answers to frequently asked questions into the performance indicator guidance document, NEI 99-02, and to make the answers more generic where possible. (P-4)

- Reevaluate the inspection approach for the physical protection cornerstone and revise the inspection program, as necessary, following action on the pending safeguards performance assessment pilot program and physical security rulemaking. (I-1)

- The new documentation threshold for issues that have a defined level of safety or regulatory significance is appropriate. Inspection observations and insights that do not meet the defined threshold should continue to be communicated verbally to licensees for their consideration. The staff should evaluate and revise guidance to inspectors as necessary to clarify and promote consistency. Continue conducting periodic audits of inspection reports to identify and correct inconsistencies. (I-2)

- Evaluate inspection findings and performance indicator results for the first year's implementation and determine the appropriate level of effort to ensure that risk-significant areas for baseline inspections are adequately assessed. Modify the program as appropriate. (I-3)

- Once sufficient experience has been attained with the reactor oversight process, review the results and evaluate the feasibility of allowing licensee self-assessments instead of certain aspects of the baseline team inspections under defined circumstances. (I-4)

- Validate and issue the revised reactor safety significance determination process Phase 2 worksheets. (S-1)

- Continue efforts to provide improved and standardized risk analysis tools to the reactor analysts. (S-2)

- Review lessons learned from use of the fire protection significance determination process, and improve the risk characterization tool to make it more meaningful, effective and efficient. (S-3)

- Continue development of an improved significance determination process for the physical protection cornerstone. (S-4)

- Evaluate the need for other significance determination tools. The staff should carefully evaluate any potential changes against agency goals. For example, a new significance determination process that may increase regulatory burden should have a corresponding benefit in maintaining safety or improving agency effectiveness. (S-5)

- Evaluate lessons learned from initial implementation and revise the ALARA significance determination process, as necessary. (S-6)

- Use lessons learned from the initial implementation of the reactor oversight process to improve the process for determining the risk characterization of an issue so that it is expedient, scrutable, and understandable to all stakeholders. (S-7)

- Use lessons learned during initial implementation to clarify the definition of a performance deficiency. (S-8)

- Evaluate the feasibility of a graded approach as to when non-Green inspection findings should be reset as entry conditions into the action matrix. (A-1)

- Reevaluate and clarify the program guidance regarding the designation, definition, and use of what are presently termed no color findings, and develop a more appropriate term for these issues. (A-2)

- Clarify the guidance regarding the objectives and structure of the regulatory conferences and communicate this guidance to the external and internal stakeholders. (A-3)

- Develop clear policy guidance regarding the handling of multiple related inspection findings, and communicate the guidance to all stakeholders. (A-4)

The following five sections provide the consensus of the panel with respect to the description of the issues, the priority, the primary program goals impacted, and resulting panel recommendations. ~~In addition, where~~ Where appropriate, we have made reference to the recommendations provided by the Pilot Program Evaluation Panel ~~where~~ when there are similarities in the issues and recommendations identified by the two panels.

There were two minority views raised by the panel members:

1. The initial implementation does not appear to demonstrate that the reactor oversight process has improved identification of design basis issues or validated recent initiatives to scope design basis issues. NUREG-1275, Volume 14, "Causes and Significance of Design-Basis Issues at U.S. Nuclear Power Plants," draws a clear connection between the number of engineering (and design) inspection hours expended and the number of design basis issues discovered. However, information regarding the number of engineering inspection hours in the first year's implementation has not yet been compiled, indicating to some observers that the staff is not focused on design basis issues under the new process. Public confidence will not be enhanced unless there is

assurance that plants are properly designed, built as designed, modified only with proper analysis, and properly maintained including sufficient attention to "aging" phenomena. Uncertainties regarding design basis issues serve to undermine confidence in Probabilistic Risk Assessments and the concept of "maintaining" safety. In an October, 17, 1996 All Employees NRC meeting, Chairman Shirley Jackson opined that one reason for the events at Millstone was that "..we stopped doing design basis inspections too early, and relied on industry .... without maintaining an appropriate regulatory focus to assess whether in fact they were dealing with the issue in a timely manner."

2. The IIEP make-up was weighted with regulators and industry to the extent that common interest in moving the reactor oversight process forward, and other commonalties, may have limited the panel's perspective. Given the common working culture, it is not surprising that the IIEP critique was quite similar to the staff review group critique. Future panels might benefit from inclusion of some additional individuals from outside of the NRC-licensee set, for example, attorneys with nuclear specialties or academics. Panel builders might also add to the quality of deliberation by a more even gender mix. While it enriches dialogue and broadens perspective to add members from public interest groups, adding only one or two with views likely to be quite alien to the remainder of the group on some issues is problematic in terms of free and meaningful consensus building.

Overall Reactor Oversight Process

The reactor oversight process is a notable improvement over the previous licensee performance assessment program and it should be continued. The reactor oversight process has made progress toward achieving the agency's performance goals. The program framework provides a more objective, risk-informed, predictable, and understandable approach to the oversight of commercial nuclear reactor facilities. However, the panel identified the following issues that should be addressed:

Issue: (O-1) Process improvements and stakeholder feedback
Priority: 1
Primary Program Goals: Public Confidence/Efficiency and Effectiveness

Issue Description: As with any process, it is important that a formal infrastructure be established to allow for stakeholder feedback, comments, and questions. In addition, the infrastructure should ensure timely review of feedback and implementation of process improvements. The frequently asked questions process used for the performance indicator program was a positive mechanism to raise and resolve licensee and inspector issues. This process provided for the open exchange of information and establishment of uniform and consistent guidance. The other elements of the reactor oversight process, such as the significance determination process, would benefit from a similar approach. This process should also include a mechanism for the public to retrieve information on past questions and answers, and ensure lessons learned and feedback information is shared across regional boundaries.

The PPEP recommended the need for continued feedback from inspectors and ongoing modification of procedures throughout industry-wide implementation to assure that the procedures are clear and appropriately address the cornerstones.

Panel Recommendation: Establish a formal program and assign sufficient resources to continue open communication to enhance the reactor oversight process. The process should accumulate lessons learned, pursue multiple avenues for all internal and external stakeholders to provide feedback, give stakeholders feedback as to the resolution of their questions, and include an infrastructure to make timely program changes.

Issue: (O-2) Public access to reactor oversight process information
Priority: 1
Primary Program Goals: Public Confidence/Understandable

Issue Description: It is important that the public have confidence that the reactor oversight process provides the regulator a means for accurately assessing the safety of plants and taking action where necessary and that the process and actions be effectively communicated to the public. Likewise, it is essential that the public have clear unfettered access to accurate and meaningful information to be able to reach its own conclusions.

The staff made significant improvements to the public's access to plant performance information during the initial implementation period. They established a substantial web site that displayed information about the reactor oversight process to the public and response to the web site was generally very positive. (Discussion of public meetings and workshops and results.)

However, much remains to be done to make the reactor oversight process understandable and accessible to public stakeholders. Early on, it appeared that the public and media based their perception of the new process solely on the performance indicators because of how the indicators were highlighted on the web page. This perception caused a few public stakeholders to believe

that the NRC had abandoned the resident inspector program. Most stakeholders did not understand how insights from both performance indicators and inspection findings were used in consonance to make an assessment of overall performance.

The staff has made improvements to the structure and format of the web pages to address this perceptual problem to enhance public confidence in the process. The web page needs additional improvements, however, and progress could be made by something as simple as starting with overview information and providing layered access to more detailed information. For example, the public information could be organized by an overview of each plant's performance based on the action matrix outcomes, with all of the site-related documents linked to the individual site pages. This page could include a status board posting the status of enforcement items and inspections. These changes would enable the public to understand, without conducting exhaustive research, the status of important issues at the plant in their locale. A high level summary would also provide a means to differentiate the performance of one plant from another. The timely posting of information is also important to enhancing public confidence.

Panel Recommendation: Revise the reactor oversight process communications plan, as appropriate, and dedicate the appropriate resources to meeting these outreach goals and engaging and informing the public on the process and its relationship to the mission of the agency in ensuring adequate protection of public health and safety. Evaluate additional improvements to the reactor oversight process information on the web page to improve and simplify public access to the information. Identify methods utilizing stakeholder input for improving public communication outreach efforts.

Issue: (O-3) Long-term program effectiveness
Priority: 1
Primary Program Goals: Maintain Safety/Efficiency and Effectiveness/Public Confidence

Issue Description: The panel recognizes and agrees with the concern that members and stakeholders have shared that there are limits to what we may learn from a one year test of the reactor oversight process. The staff should evaluate the long-term effectiveness of the program to decide if the performance indicators and inspection findings will identify plants with poor performance. In addition, the significance determination process tools are a key element in ensuring the effectiveness of the reactor oversight process. The use of the significance determination process Phase 2 tools has been limited because they were not available for much of initial implementation. The reactor oversight process was based on certain presumptions and assumptions (e.g., licensee corrective action programs are mature and support the basis for the licensee response band concept; degraded performance will reveal itself by ever increasing significant issues and tripped performance indicator thresholds; all violations of NRC regulations do not require specific follow-up by the NRC). As sufficient information and experience is obtained, premises will either be confirmed or refuted. Whatever the answer is, there must be a validation process. In addition, unintended consequences will likely result from the program elements, such as seen with some performance indicators (See P-1). The final oversight process must be focused on the preclusion of any potential for not identifying issues of safety significance or underestimating risk characterization determinations (i.e., false negatives), while striving to minimize the times that issues are overstated (false positives).

The PPEP recommended that the staff continue to monitor industry-wide implementation such that when a risk-significant event occurs, the event-specific response requires reevaluation of the performance indicators and inspection results to address the question of whether they missed a crosscutting or common-mode failure issue. They also concluded those program assumptions had not been tested sufficiently.

Panel Recommendation: Establish a structured ongoing process to evaluate long-term program effectiveness and to test program assumptions. This would include integrating, as a minimum, the insights of the reactor oversight process self-assessment process and the overall assessment of industry performance. The staff should also consider engaging, on a periodic basis, both internal and external stakeholders to provide an independent assessment of the reactor oversight process.

Issue: (O-4) Crosscutting issues
Priority: 1
Primary Program Goals: Maintain Safety/Public Confidence

Issue Description: During the development of the reactor oversight process, and during its initial implementation, some inspectors were concerned about the identification and disposition of crosscutting issues. The concern was that licensee performance in the crosscutting areas of human performance, safety conscious work environment, and problem identification and resolution, could become degraded without being detected by the baseline inspection program and performance indicators. The reactor oversight process addresses crosscutting issues by highlighting them in inspection reports when they are notable contributors to inspection findings or if an appreciable trend or pattern has emerged. The staff further amplifies these concerns in assessment letters to the licensee when they constitute a substantive issue.

The current process does not have sufficient criteria, thresholds, and definitions of crosscutting issues to ensure consistency in handling these issues. In addition, there is no predefined NRC action if the inspection program identifies a deficient corrective action program. The reactor oversight process does not allow for additional NRC engagement on crosscutting issues unless they are contributing causes to performance indicators or inspection findings that they have characterized as White or greater. Some inspectors are also concerned about the lack of a process to handle low level human performance trends when it appears that NRC actions could prevent a significant performance issue from occurring. The industry believes the reactor oversight process should focus on performance outcomes, of which crosscutting issues are but one possible cause.

One premise of the reactor oversight process was that either performance indicators or inspection findings would detect degradation in the crosscutting areas in a sufficiently pro-active time to allow for agency action to protect public health and safety. Early data obtained from initial implementation suggests that there is a correlation between crosscutting issues and crossed thresholds consistent with the premise of the program (e.g., the number of crosscutting issue findings per plant appears to increase as you move to the right in the action matrix).

The PPEP final report highlighted the divergent views on the identification and disposition of crosscutting issues.

Panel Recommendation: Continue the efforts of the crosscutting issues task force and clarify the program guidance regarding identification and disposition of crosscutting issues.

Issue: (O-5) Basis of Green-to-White Thresholds
Priority: 1
Primary Program Goals: Public Confidence/Understandable

Issue Description: The bases for the performance indicator Green/White thresholds are not risk-informed. The thresholds were selected to identify the 95 percent performance level (i.e., industry outliers). Since NRC action is the same for both White performance indicators and White inspection findings, which are risk informed, several problems have resulted. First, there is a difference between the NRC's and the licensee's perception regarding the impact and importance

of White issues. Second, it is difficult to communicate to public stakeholders that a White performance indicator may not be risk-significant when the NRC increases its regulatory response according to the action matrix. This could impact public confidence in the NRC.

Panel Recommendation: Evaluate lessons learned from initial implementation to achieve parity in the treatment of risk-significant inspection findings and crossed performance indicator thresholds. The evaluation should ensure that the significance of the outcomes from the performance indicators and inspection findings accurately reflect the significance of the specific issues. The staff should consider addressing this issue by adjusting the Green/White thresholds or modifying the columns of the action matrix.

Performance Indicators

The integration of Performance Indicators (PI) into the NRC's reactor oversight process has provided objective measures by which the NRC can assess licensee performance. Additionally, performance indicators have shown themselves to be data that licensees can accurately report without an excessive burden, and the public can easily understand the performance data. The initial implementation period has verified that the performance indicators can focus both licensee and NRC attention on issues that are either risk significant or relevant to promoting desired performance. However, the panel identified the following issues that should be addressed:

Issue: (P-1) Unintended negative consequences of performance indicators
Priority: 1
Primary Program Goals: Maintain Safety/Unnecessary Regulatory Burden

Issue Description: The use of performance indicators creates the potential for an unintended negative consequence when the performance indicator measures both desirable actions and performance issues. This practice could lead to non-conservative decisions by licensees. In addition, there may be unnecessary regulatory burdens imposed when the NRC takes action based, in part, on licensee actions that are desirable and appropriate.

The staff has noted some examples where licensees have altered normal operating and maintenance practices solely to reduce situations that may lead to crossing a performance indicator threshold. For example, the Unplanned Power Change performance indicator may cause a licensee to delay needed equipment repairs for 72 hours to avoid counting a power reduction. In contrast, a plant that conducts equipment repairs in a well-planned manner, but with less than 72 hours planning, may be perceived as a poor performer by taking the appropriate action. Another example is the Safety System Unavailability performance indicator, which includes unavailability time for planned preventive maintenance as well as unplanned corrective maintenance and equipment failures. A licensee may consider delaying discretionary maintenance if they are getting near the performance indicator threshold. Despite these concerns, there have not been any known instances, to date, of any unsafe actions by a licensee because of the performance indicators.

Panel Recommendation: The staff's reactor oversight process self-assessment process should continuously identify and evaluate any instances of unintended consequences or unnecessary regulatory burdens caused by the performance indicators and make program adjustments where appropriate.

Issue: (P-2) Safety System Unavailability performance indicators
Priority: 1
Primary Program Goals: Maintain Safety/Risk-informed/Understandable

Issue Description: The largest percentage of performance indicator frequently asked questions (FAQs) during initial implementation involved the safety system unavailability performance indicators. There are many issues and concerns regarding the definitions and guidance for these indicators. The performance indicator definition of what is considered equipment unavailability is different from that used by other NRC and industry programs that monitor or consider unavailability of safety equipment (e.g., maintenance rule; licensee's probabilistic risk assessment). The major hurdle to overcome in resolving this problem is determining whether the unavailability to be measured is against the design basis or the risk analyses (i.e., operable versus functional). For example, considerations for allowed operator recovery actions are limited in this indicator, but are allowed in other programs.

Other issues that have resulted in extensive discussion are how to treat fault exposure hours and

what allowances should be made for planned overhaul maintenance when a quantitative risk assessment has been previously performed and approved by the NRC. The large number of generic and site-specific exceptions to what equipment unavailability is counted in these performance indicators has made them difficult to understand and may erode public confidence. Finally, these indicators also measure appropriate actions by the licensee, such as planned preventive maintenance, so there is a potential for negative unintended consequences (See P-1).

Panel Recommendation: Expedite the efforts to resolve the concerns regarding the consistency of the safety system unavailability performance indicators and implement any needed revisions to NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," to achieve consistency with other applications.

Issue: (P-3) New performance indicators
Priority: 2
Primary Program Goals: Maintain Safety/Risk-informed

Issue Description: Some current performance indicators and associated thresholds do not directly correlate with risk. In addition, the panel has confirmed at least one unintended consequence associated with performance indicators, specifically the misunderstanding that can occur because the Green-White threshold for performance indicators is not related to risk, as with inspection findings (see O-5). This situation causes the application of the action matrix to sometimes appear inconsistent and calls into question the value of some performance indicators as an input to performance assessment. For example, some emergency preparedness and physical security performance indicators do not directly correlate to risk to public health and safety, but are rather intended to identify weaknesses in licensee programs. The staff specifically avoids the identification of such weaknesses in the more risk-focused cornerstone areas.

Panel Recommendation: Continue the efforts to identify and evaluate improvements to performance indicators. The staff should thoroughly evaluate any significant changes to the performance indicators following the structured process in draft Inspection Manual Chapter 0608, "Performance Indicator Program." Further, they should evaluate any significant changes in the scope of information provided by performance indicators for its associated impact on the action matrix, the breadth and scope of the baseline inspection program, and any additional costs and benefits.

Note: The panel cautions the staff not to eliminate a performance indicator solely because it does not provide risk-informed information. The performance indicator may provide information useful for other purposes (e.g., public confidence, identifying programmatic issues). In this case, they may need to adjust the threshold.

Issue: (P-4) Frequently Asked Questions
Priority: 2
Primary Program Goals: Understandable/Efficiency and Effectiveness

Issue Description: During initial implementation of the reactor oversight process, licensee and NRC staff members asked many questions regarding the performance indicator guidance. These questions were specifically documented, answered and posted on the NRC's reactor oversight process web site. Although this was a useful approach for clarifying and interpreting the guidance in NEI 99-02, the large number of questions made it difficult for the stakeholders to maintain a current understanding of the guidance for the performance indicators. In addition, the inspectors noted that some licensees would use site-specific answers to the questions out of context when applying it to their specific situation.

Panel Recommendation: Continue efforts to incorporate the answers to frequently asked

questions into the performance indicator guidance document, NEI 99-02, and to make the answers more generic where possible.

Inspection

The new inspection process has been effective in focusing the NRC's inspection efforts on areas more important to risk and safety. The combination of Baseline and Supplemental inspections provides sufficient coverage of the attributes of the seven safety cornerstones. The planning for both the overall inspection effort at a given site and for the selection of individual procedural samples has been more risk-informed. The improvements in procedural guidance have focused NRC resources on reviewing and assessing performance as opposed to providing subjective views of various licensee processes and programs. The new procedural guidance, being more objective and risk-informed, has also improved the consistency between the regions and the individual inspectors. Since the outcomes of the new inspection program are more risk-informed, the dialogue between the licensee and NRC is now primarily focused on safety. However, the panel identified the following issues that should be addressed:

Issue: (I-1) Physical protection cornerstone inspections
Priority: 1
Primary Program Goals: Objective/Unnecessary Regulatory Burden

Issue Description: Licensees have expressed concern regarding the NRC's approach to inspecting the licensee's response to contingency events (i.e., force-on-force drills) and the application of the physical protection significance determination process (See S-4). During initial implementation, the staff essentially removed the inspection of force-on-force exercises from the baseline inspection procedure. A limited continuation of the Operational Safeguards Response Evaluation (OSRE) inspections was directed, until a permanent resolution of how best to assess contingency event response was determined. The industry has proposed a pilot program for industry-conducted drills and exercises (SECY-01-0060). The industry has requested that self-assessment initiatives be considered as part of the inspection process similar to how the staff handles the evaluation of emergency drills in the emergency preparedness cornerstone.

Panel Recommendation: Reevaluate the inspection approach for the physical protection cornerstone and revise the inspection program, as necessary, following action on the pending safeguards performance assessment pilot program and physical security rulemaking.

Issue: (I-2) Inspection Report documentation threshold
Priority: 2
Primary Program Goals: Public Confidence/Efficiency and Effectiveness

Issue Description: The staff significantly revised the program guidance for documenting inspections for the reactor oversight process to provide a more structured process to decide the issues to be documented. NRC Inspection Manual Chapter 0610*, "Power Reactor Inspection Reports," changed the documentation threshold by eliminating discussions of positive performance attributes and the issues associated with minor violations, licensee identified findings, and non-regulatory issues (such as general weaknesses in programs or inspector observations) from the reports. The staff implemented these documentation changes, in part, to address industry concerns that subjective performance observations and inspector opinions that had been in past reports that were not based on regulatory requirements and had not manifested themselves in any observable performance problems. In parallel with development of the reactor oversight process, the Office of Enforcement also developed improved guidance to clarify the threshold for minor violations. This guidance was incorporated into MC 0610*. With the higher threshold for issues discussed in the inspection reports, some public stakeholders are concerned that they may receive less performance information than in the previous program. Contrarily, some stakeholders have noted that the more focused, albeit reduced, information in inspection reports allows for a more effective identification of significant regulatory and performance issues. Some inspectors are also

concerned that they may miss low-level performance trends if they do not include them in the inspection reports. Stakeholders have also expressed a concern that the staff is not consistently implementing the new report documentation thresholds.

NRC Inspection Manual Chapter 2515, "Light Water Reactor Inspection Program - Operations Phase," endorses action by inspectors to provide licensees well-considered insights beyond those to be documented in the inspection report. Although the documentation threshold has changed, most licensees request that inspectors continue to share all of their observations at exit meetings. Since these observations do not meet the report documentation threshold, they do not provide them to the public. This practice creates the appearance that relevant performance information is being intentionally withheld from the public. Some public stakeholders have suggested that all exit meetings should be open to the public to address this concern.

Panel Recommendation: The new documentation threshold for issues that have a defined level of safety or regulatory significance is appropriate. Inspection observations and insights that do not meet the defined threshold should continue to be communicated verbally to licensees for their consideration. The staff should evaluate and revise guidance to inspectors as necessary to clarify and promote consistency. Continue conducting periodic audits of inspection reports to identify and correct inconsistencies.

Issue: (I-3) Appropriate level of baseline inspection
Priority: 2
Primary Program Goals: Efficiency and Effectiveness/Unnecessary Regulatory Burden

Issue Description: The inspection resource expenditures are not appreciably different between the reactor oversight process and the previous inspection program. The staff has noted wide ranges in actual resource expenditures, however, for certain procedures during the first year of implementation. Licensees have commented that specific cornerstones, such as occupational radiation exposure, appear to have too many resources applied when licensee performance trends and the previous inspection program are considered objectively (e.g., inspection resources have increased although overall occupational exposure has decreased).

The PPEP recommended that the resource levels required to plan and implement the baseline inspection program be evaluated during industry-wide implementation, but cautioned that program effectiveness not be measured solely based on increases or decreases in resource utilization. They also recommended that the appropriateness of the inspection frequency and scope continue to be assessed during industry-wide implementation.

Panel Recommendation: Evaluate inspection findings and performance indicator results for the first year's implementation and determine the appropriate level of effort to ensure that risk-significant areas for baseline inspections are adequately assessed. Modify the program as appropriate.

Issue: (I-4) Use of licensee self-assessment information
Priority: 2
Primary Program Goals: Unnecessary Regulatory Burden/Efficiency and Effectiveness/Public Confidence

Issue Description: In the previous inspection program, there were cases where the NRC did not conduct portions of specific team inspections if the licensee had conducted a rigorous self-assessment of the same area and placed the self-assessment in the public domain. The staff outlined this process in Inspection Procedure 40501, "Licensee Self-Assessments Related to Team

Inspections." When NRC management approved the use of this procedure as an alternative to independent NRC inspection, the staff reviewed the scope and results of the licensee's self-assessment, the qualification of team members, and monitored ongoing portions of the licensee's review. The reactor oversight process has not provided this flexibility for regulatory burden reduction. While this approach did not save a significant amount of NRC inspection resources, it did provide a significant reduction of regulatory burden imposed on the licensees. Contrarily, it could reduce public confidence in the NRC as an independent regulator.

Panel Recommendation: Once sufficient experience has been attained with the reactor oversight process, review the results and evaluate the feasibility of allowing licensee self-assessments instead of certain aspects of the baseline team inspections under defined circumstances.

Significance Determination Process

The significance determination process (SDP) has shown that risk information can be used in a systematic, practical, and repeatable manner. It has given NRC inspectors an objective process for consistently characterizing inspection findings, and it has provided the NRC improved tools to assess in prioritizing emergent issues and selecting individual inspection samples. The SDP has focused both NRC and licensee attention on the risk associated with identified issues, as opposed to focusing attention and resources on the compliance implications. However, the panel identified the following issues that should be addressed:

Issue: (S-1) Significance Determination Process Phase 2 Worksheets
Priority: 1
Primary Program Goals: Efficiency and Effectiveness/Regulatory Burden

Issue Description: The primary tools to be used by inspectors in determining the risk-significance of reactor safety cornerstone inspection findings, the Phase 2 worksheets, were not available to the inspectors during initial implementation. The draft Phase 2 worksheets did not accurately reflect the current site probabilistic risk assessments and equipment configurations. It was necessary for the regional risk analysts to perform more resource intensive Phase 3 analyses on all potential non-Green reactor safety issues to determine the risk significance of findings. The lack of adequate Phase 2 worksheets negatively affected the effectiveness and efficiency of the reactor oversight process during the first year.

The PPEP highlighted the importance of having plant specific significance determination process worksheets before industry-wide implementation.

Panel Recommendation: Validate and issue the revised reactor safety significance determination process Phase 2 worksheets.

Issue: (S-2) Quality of NRC PRA tools
Priority: 1
Primary Program Goals: Maintain Safety/Public Confidence

Issue Description: The reactor oversight process relies on the quality and consistency of the probabilistic tools used by the NRC risk analysts and inspectors as a basis for their risk characterizations and decisions. Currently, the NRC relies heavily on the individual plant probabilistic risk assessment developed by the licensees, but the quality of these tools vary. The lack of validated Phase 2 worksheets magnified this concern during initial implementation (See S-2). For some findings that reached the Phase 3 analysis stage, the licensees with state-of-the-art tools felt penalized when the staff used their less sophisticated results to determine the risk significance of an issue. Their concern was based on the notion of predictability since the calculated risk-significance may have been more with a less sophisticated tool. The lack of defined standards for methods and models also hampers the staff's ability to have timely and consistent results when evaluating findings.

Panel Recommendation: Continue efforts to provide improved and standardized risk analysis tools to the reactor analysts.

Issue: (S-3) Fire Protection SDP
Priority: 1
Primary Program Goals: Efficiency and Effectiveness/Understandable

Issue Description: Application of the fire protection significance determination process during the

first year identified that it was excessively complex and subjective. This has limited its usefulness as a tool in evaluating some fire protection findings. Besides the complexity of the fire protection significance determination process, the resulting risk characterization of the findings did not seem consistent with findings in other cornerstone significance determinations.

Panel Recommendation: Review lessons learned from use of the fire protection significance determination process, and improve the risk characterization tool to make it more meaningful, effective and efficient.

Issue: (S-4) Physical Protection SDP
Priority: 1
Primary Program Goals: Efficiency and Effectiveness/Risk-Informed

Issue Description: The physical protection significance determination process was initially aligned to the reactor safety significance determination process. The staff showed that the use was problematic in several cases identified during initial implementation. The significance determination process results seemed inconsistent with the actual risk significance. The staff made interim revisions to the physical protection significance determination process to incorporate direction contained in COMSECY-00-0036.

Panel Recommendation: Continue development of an improved significance determination process for the physical protection cornerstone.

Issue: (S-5) Development of SDPs for other areas
Priority: 1
Primary Program Goals: Efficiency and Effectiveness/Predictable

Issue Description: Substantial work is needed to complete the suite of SDP tools. During the first year of implementation, the established significance determination process did not provide an effective tool for evaluating all inspector findings in certain areas (e.g., the staff identified the need for effective significance determination tools concerning shutdown, containment, and external events). The staff cannot easily assess other process-oriented inspection findings, such as those involving inadequate application of the maintenance rule, with the existing significance determination process unless there is a measurable impact on plant equipment.

Panel Recommendation: Evaluate the need for other significance determination tools. The staff should carefully evaluate any potential changes against agency goals. For example, a new significance determination process that may increase regulatory burden should have a corresponding benefit in maintaining safety or improving agency effectiveness.

Issue: (S-6) ALARA SDP
Priority: 1
Primary Program Goals: Efficiency and Effectiveness/Unnecessary Regulatory Burden
Issue Description: During initial implementation of the reactor oversight process, the staff experienced problems when using the ALARA significance determination process. The significance determination process screened out all issues identified at plants that had a three-year average collective dose equal to or below the screening criteria based on the median industry performance. The unintended consequence of this significance determination process structure is that the inspectors cannot document the individual occurrence of an ALARA failure at these better performers in the inspection report, but they document the identical finding at a plant above the screening criteria. In addition, the staff designed the significance determination process structure to evaluate the licensee's performance in ALARA on a per job basis, but they have not defined a job. Another potential unintended consequence is that it may cause some licensees to

estimate exposure in a very conservative manner during ALARA planning. Some stakeholders have commented that the significance determination process screening criteria are an inappropriate, de facto, definition of ALARA for occupational doses at nuclear power plants.

Panel Recommendation: Evaluate lessons learned from initial implementation and revise the ALARA significance determination process, as necessary.

Issue: (S-7) Process for evaluating and communicating SDP conclusions
Priority: 2
Primary Program Goals: Efficiency and Effectiveness/Understandable/Public Confidence

Issue Description: The benefits associated with using an SDP to place all inspection insights into a risk-informed context has also led to the greatest challenge posed by SDPs. The breadth of potential issues and the uniqueness of each plant's design and associated risk profile is leading to a highly complex and time-consuming process that is challenging public confidence as much as it is enhancing it. Experience with implementation of the significance determination process during the first year was that the final risk characterizations are frequently untimely and the process is not always transparent to the licensees and external stakeholders.

Inherent to the significance determination process, is the fact that regional risk analysts and inspectors discuss technical information and risk analysis assumptions with the licensee's technical staff. These discussions are used to ensure the NRC's risk analysis is technically sound, but has given the perception to many stakeholders that the finding is being debated out of the public view. Several external stakeholders have expressed concern that "negotiations" occur between the NRC staff and licensees during the risk characterization process. Some stakeholders have suggested that all of the information used in the significance determination process, including licensee probabilistic risk assessments, be docketed. Stakeholders have also observed that the communication of the basis for the final risk significance determination is not clear in all inspection reports, and does not always provide sufficient information for any interested party to independently reconstruct the analysis.

The time and resource commitment to process individual potential non-Green issues has been higher than expected, and many final determinations have not met agency timeliness goals. The guidance concerning agency decisions emphasizes risk-based criteria as opposed to risk-informed. This could encourage protracted "PRA battles" that will negate the timeliness of NRC actions and could reduce the public's confidence in the new program's effectiveness and efficiency. Stakeholders have observed that excessive time is also spent resolving disagreements regarding Green inspection findings, which appears contrary to being risk-informed and efficient.

The PPEP noted that the staff needs to better align the timeliness of significance determination process evaluations and safety significance by shortening the turnaround time on Phase 3 evaluations. They also recommended that the process for interactions between the NRC and licensee during significance determination process evaluations be better defined, and that attention be focused on explaining the basis for color assignments.

Panel Recommendation: Use lessons learned from the initial implementation of the reactor oversight process to improve the process for determining the risk characterization of an issue so that it is expedient, scrutable, and understandable to all stakeholders.

Issue: (S-8) Definition of a performance deficiency
Priority: 2
Primary Program Goals: Public Confidence/Maintain Safety

Issue Description: Early in the implementation of the reactor oversight process, the staff developed guidance in NRC Inspection Manual Chapter 0609, “Significance Determination Process,” that required inspectors to demonstrate a licensee performance deficiency before entering the significance determination process. This policy caused concern among some inspectors because it had the potential to appear that the NRC was not dealing with risk-significant issues simply because they had not established a clear performance deficiency. In addition, the staff had difficulty developing a licensee performance deficiency if the licensee could not establish a root cause for an equipment failure. There is a potential to erode public confidence by giving the appearance that the NRC is not taking consistent actions on risk-significant issues.

Panel Recommendation: Use lessons learned during initial implementation to clarify the definition of a performance deficiency.

Assessment and Enforcement

The assessment process associated with the reactor oversight process has, effectively, reduced the subjectivity within the previous assessment process (SALP). The use of a preconceived Action Matrix, which takes objective performance indicators and inspection findings placed into a risk-informed context, has made the determination and communication of NRC actions more streamlined and predictable. This has helped public confidence by providing a clear road map for understanding agency-licensee interactions and regulatory decisions. Enforcement actions are now performance-based, with an emphasis on placing the significance of the noncompliance into a safety context and ensuring that the licensee is taking corrective actions. Under the new assessment scheme, the response of the agency is more timely than the previous process. However, the panel identified the following issues that should be addressed:

Issue: (A-1) Length of time inspection finding is included in action matrix
Priority: 1
Primary Program Goals: Unnecessary Regulatory Burden/Understandable

Issue Description: According to NRC Inspection Manual Chapter 0305, "Operating Reactor Assessment Program," a non-Green inspection finding is normally carried forward in the assessment process (i.e., action matrix) for a total of four calendar quarters. Performance indicators are recalculated quarterly. Licensees have proposed that there be a graded approach for how long findings remain active rather than the fixed one year. Considering the risk significance of the various findings, it may be beneficial to establish a graded approach as to when to reset of the inspection finding in the action matrix.

Panel Recommendation: Evaluate the feasibility of a graded approach as to when non-Green inspection findings should be reset as entry conditions into the action matrix.

Issue: (A-2) "No color" inspection findings
Priority: 1
Primary Program Goals: Understandable/Public Confidence

Issue Description: The reactor oversight process has proceduralized the use of "no color" findings. The role of no color findings, however, is not clear and has contributed to program inconsistencies and confusion among many stakeholders. No color findings are associated with specific extenuating circumstances listed in NRC Inspection Manual Chapter 0610*. These findings typically address regulatory issues that are more than minor violations, but do not meet the threshold for entry into the existing cornerstone significance determination process. The staff intended these issues to be associated with traditional enforcement issues that are: actions that are willful or will impede the regulatory process; substantive crosscutting issues; issues of an agency-wide concern; or an open item from a Licensee Event Report. Early in the process, the staff guidance was nonspecific and the result was the appearance of a new finding classification.

Licensees are concerned that these findings may be inappropriately used to artificially inflate the significance of individual issues; likewise, they believe that many of the issues do not warrant inclusion in inspection reports. External stakeholders have noted that the staff has established a new undefined category of findings, which is exacerbated by the fact that the no color findings are colored blue on the NRC's web page, and that their role in the process is not understandable.

Panel Recommendation: Reevaluate and clarify the program guidance regarding the designation, definition, and use of what are presently termed no color findings, and develop a more appropriate term for these issues.

Issue: (A-3) Purpose of the Regulatory Conference
Priority: 2
Primary Program Goals: Public Confidence/Efficiency and Effectiveness/Understandable

Issue Description: The purpose of a Regulatory Conference is to gain a complete understanding of the risk significance of an inspection finding and to obtain information pertinent to understanding any apparent violations. During initial implementation of the reactor oversight process, stakeholders noted that the objectives of the regulatory conferences were not clear. The structure of the regulatory conferences appeared to be very similar to that of the enforcement conferences in the previous program. The participation of enforcement staff and technical staff in the regulatory conferences sometimes focused the meeting discussion on enforcement and corrective actions rather than on the determination of the risk significance of the issue. Additionally, licensee and NRC managers have expressed discomfort with holding public meetings concerning a potentially risk-significant issue and not including all potential decision-makers.

Panel Recommendation: Clarify the guidance regarding the objectives and structure of the regulatory conferences and communicate this guidance to the external and internal stakeholders.

Issue: (A-4) Multiple related inspection findings
Priority: 2
Primary Program Goals: Unnecessary Regulatory Burden/Efficiency and Effectiveness

Issue Description: It is not clear how the NRC should disposition multiple inspection findings that are related to the same technical problem or root cause. For example, would it be appropriate to characterize an inspection finding involving five related issues (3 green, 1 white, 1 yellow) as one finding or five separate findings? If they are handled as separate findings, the NRC response, as determined by the action matrix will be different than if they are considered one finding. Experience has shown that significant events and conditions are often caused by multiple performance failures.

Panel Recommendation: Develop clear policy guidance regarding the handling of multiple related inspection findings, and communicate the guidance to all stakeholders.

ROP Self-Assessment Process

Through briefings to the IIEP by the NRC staff and review of the preliminary self-assessment metrics, the panel evaluated the ROP self-assessment program to determine whether the developed program was sound and whether it included mechanisms for self-correction. The staff developed the self-assessment program to determine whether the ROP is meeting its objectives (including the agency performance goals), to gather information relative to overall industry performance, and to develop information to support possible improvements. The self-assessment program includes over 75 metrics for measuring the success of the overall ROP process and how effectively it supports the four ROP program elements (performance indicators, inspection program, significance determination process, assessment program). The metrics are aligned to the ROP objectives (risk-informed, predictable, understandable, objective) and the agency's performance goals (maintain safety, increase public confidence, increase effectiveness and efficiency, reduce unnecessary regulatory burden). The metrics are evaluated on a periodic basis using information from various sources, including the inspection program, performance indicators, periodic audits, stakeholder surveys, and public comments.

Based on the timing of the panel's activities and the parallel collection and assessment of self-assessment data, limited data and results were available for the panel to review. Although the panel acknowledges the significant efforts devoted by the staff in developing the self-assessment program, it is best described as noteworthy work in progress, which may require further enhancements and refinement based upon the evaluation of the data collected. Although individual panel members provided comments to the staff for consideration in further defining and revising the individual metrics, the panel, as a whole, took no consensus position on the overall adequacy and acceptability of the metrics. They are, even now, continuing to be refined by the staff and the data for assessing their overall efficacy is not available. Nevertheless, the panel concluded that the self-assessment process appears to have the elements to collect sufficient information to evaluate the program against the agency's performance goals. The panel, however, could not reach any overall conclusion regarding the effectiveness of the process because the assessment of the first year's data was not yet available. Notwithstanding the unavailability of the self-assessment results, the panel was encouraged by the fact that, for the most part, the same program issues identified by the panel during the course of its review had also been identified by the staff.

Attachment 1

UNITED STATES NUCLEAR REGULATORY COMMISSION CHARTER
REACTOR OVERSIGHT PROCESS INITIAL IMPLEMENTATION EVALUATION PANEL

1. The Committee's official designation:

   Reactor Oversight Process Initial Implementation Evaluation Panel (IIEP)

2. The Committees objectives and the scope of its activity:

   The NRC has implemented a revised reactor oversight process (ROP) for commercial nuclear power plant licensees. The ROP is described in NRC Inspection Manual Chapter 2515. Background information on the development of the ROP is contained in Commission papers SECY-99-007, "Recommendations For Reactor Oversight Process Improvements," dated January 8, 1999, SECY-99-007A, "Recommendations For Reactor Oversight Process Improvements (Follow-up to SECY-99-007)," dated March 22, 1999, and SECY-00-049, "Results of the Revised Reactor Oversight Process Pilot Program," dated February 24, 2000. These Commission papers describe the scope and content of performance indicator reporting, a new risk-informed baseline inspection program, a new assessment process, and revisions to the enforcement policy. Commission paper SECY-00-049 also describes the results from the Pilot Program Evaluation Panel (a previous Federal Advisory Committees Act (FACA) panel), including a recommendation from the panel to proceed with initial implementation of the ROP at all power reactor facilities. On March 28, 2000, the Commission approved initial implementation of the ROP, and on May 17, 2000, the Commission directed the NRC staff to convene another evaluation panel under FACA to evaluate the first year of implementation of the ROP. The staff has established this IIEP in response to the Commission's directions.

   The IIEP will function as a cross-disciplinary oversight group to independently monitor and evaluate the results of the first year of initial implementation of the ROP and provide advice and recommendations to the Director of the Office of Nuclear Reactor Regulation on reforming and revising the ROP. IIEP meetings will be announced to the public in advance and (unless closed according to the provisions of FACA) open to the public. Subject to the Freedom of Information Act, all material made available to or prepared for or by the IIEP will be made available to the public. Meetings will be transcribed and meeting summaries will be prepared following each meeting to document the results of the meetings. The transcripts and meeting summaries will be publicly available.

   The IIEP will evaluate the ROP results against performance measures. The IIEP will provide a written report containing an overall evaluation of the ROP to the Director of the Office of Nuclear Reactor Regulation. This report will include the consensus views of the panel, or the majority and minority views when panel consensus cannot be achieved. The NRC staff will use the IIEP evaluation as a major input to its deliberative process to determine what modifications, if any, are needed to the ROP following initial implementation.

3. The period of time necessary for the Committee to carry out its purpose:

   Nine months

4. The NRC official to whom this Committee will report:

   Committee Chairman

Loren Plisco
Director, Division of Reactor Projects
Region II

5. The NRC office and individual responsible for providing support for the Committee:

   Office of Nuclear Reactor Regulation

   Designated Federal Official
   John Monninger
   Technical Assistant, Associate Director for Inspection & Programs
   Office of Nuclear Reactor Regulation

6. A description of the duties for which the Committee is responsible, and if such duties are not solely advisory, a specification of the authority for such functions:

   The panel will provide advice and recommendations only.

7. The estimated annual operating costs, in dollars* and staff years, for the Committee:

   a. $120,000 (*Includes travel and per diem)

   b. 0.50 FTE

8. The estimated number and frequency of the Committee meetings:

   Approximately 3 meetings will be held, on an as needed basis, during the period the panel is in existence.

9. Organization - The IIEP will create any subcommittees which may be necessary to fulfill the IIEP's mission. In addition, NRC and IIEP will establish such operating procedures as are required to support the group, consistent with the Federal Advisory Committee Act, as amended.

10. The Committee's termination date, if less than two years from the date of establishment:

    July 31, 2001

11. Charter Filing Date:

    October 17, 2000 **/RA/**

    _____
    Andrew L. Bates
    Advisory Committee Management Officer
    Office of the Secretary of the Commission

Attachment 2

INITIAL IMPLEMENTATION EVALUATION PANEL MEMBERS

In selecting members for the Initial Implementation Evaluation Panel, the NRC considered interested persons and groups with professional, technical, or personal qualifications or experience which would contribute to the functions and tasks to be performed. The NRC considered several factors in appointing IIEP members including: (1) the requirements in 10 CFR Part 7, "Advisory Committees", directing balance in advisory committee membership in terms of the points of views represented and the functions to be performed, (2) Commission direction in the Staff Requirements Memorandum for SECY-00-0049 for a panel with a cross section of stakeholders similar to those who participated in the original evaluation panel, and with the addition of at least one resident inspector and one senior reactor analyst, (3) a desire for independence from the NRC Office (Office of Nuclear Reactor Regulation) responsible for development and oversight of the Reactor Oversight Process and a focus on those stakeholders most affected by the Reactor Oversight Process, and (4) a desire to provide both continuity and new perspectives in terms of the individual panel members selected.

Panel Members

Loren Plisco - NRC, Region II (Chairman)
Randolph Blough - NRC, Region I
Kenneth Brockman - NRC, Region IV
Richard Borchardt - NRC, Office of Enforcement *
Mary Ferdig - Benedictine University; Ferdig, Inc.**
Steve Floyd - Nuclear Energy Institute
David Garchow - PSEG Nuclear
Richard Hill - Southern Nuclear Operating Company
Rod Krich - Exelon Corporation
Robert Laurie - California Energy Commission
David Lochbaum - Union of Concerned Scientists**
James Moorman - NRC, Region IV (Senior Resident Inspector)
Steven Reynolds - NRC, Region III
Edward Scherer - Southern California Edison
James Setser - Georgia Department of Natural Resources
Raymond Shadis - New England Coalition on Nuclear Pollution**
James Trapp - NRC, Region I (Senior Reactor Analyst)

Support to the Panel

Facilitator: Francis X. Cameron - NRC, Office of the General Counsel
Designated Federal Official: John D. Monninger - NRC, Office of Nuclear Reactor Regulation

* Richard Borchardt was originally appointed to the panel and participated in all panel activities through the fourth meeting of February 26-27, 2001. Subsequently, he was appointed to the position of NRR Associate Director for Inspection and Programs and assumed those duties as of March 19, 2001. In recognition of the desire for independence in panel membership from NRR, Mr. Borchardt decided to recuse himself of panel activities effective April 2, 2001.

** David Lochbaum was originally appointed to the panel and participated in the first panel meeting on November 1-2, 2000. He resigned from the panel on November 6, 2000. On December 4, 2000, Mary Ferdig and Ray Shadis were appointed to the panel.

Attachment 3

BIBLIOGRAPHY OF INITIAL IMPLEMENTATION EVALUATION PANEL ACTIVITIES

1. Results of the Revised Reactor Oversight Process Pilot Program, SECY-00-049, February 24, 2000, ADAMS ML003683227

1. Staff Requirements Memorandum - SECY-00-0049 - Results of the Revised Reactor Oversight Process Pilot Program (Part 2), May 17, 2000, ADAMS ML003715823

1. IIEP Charter, October 17, 2000, ADAMS ML003760300

1. Letter to General Services Administration, October 17, 2000, ADAMS ML003760307

1. Letter to Library of Congress, October 17, 2000, ADAMS ML003760327

1. Letters to Congressional Oversight Committees, October 17, 2000, ADAMS ML003763800

1. First IIEP Meeting Summary and Transcript, November 1-2, 2000, ADAMS ML003774521

1. Second IIEP Meeting Summary and Transcript, December 11-12, 2000, ADAMS ML010090359 & ML010530300

1. Third IIEP Meeting Summary and Transcript, January 22-23, 2001, ADAMS ML010530104

1. Fourth IIEP Meeting Summary and Transcript, February 26-27, 2001, ADAMS ML010880350

1. Fifth IIEP Meeting Summary and Transcript, April 2-3, 2001, ADAMS ML011140513

1. Sixth IIEP Meeting Summary and Transcript, April 25, 2001, ADAMS ML?

1. Final IIEP Report, May ?, 2001, ADAMS ML?

Attachment 4

SOURCES OF IIEP INFORMATION

December 11-12, 2000
- Bill Sherman, Vermont Department of Public Service
- Gary Wright, Illinois Department of Nuclear Safety

January 22-23, 2001
- Joseph Brady, NRC Senior Resident Inspector
- Sonia Burgess, NRC Senior Reactor Analyst
- Stephen Campbell, NRC Senior Resident Inspector
- Jeffrey Clark, NRC Senior Resident Inspector
- Steven Jones, NRC Senior Resident Inspector
- William Jones, NRC Senior Reactor Analyst
- Jill Lipoti, New Jersey Department of Environmental Protection
- James Trapp, NRC Senior Reactor Analyst
- Dennis Zannoni, New Jersey Department of Environmental Protection

February 26-27, 2001
- Victor Dricks, NRC Office of Public Affairs
- Steve Floyd, Nuclear Energy Institute
- Rich Janati, Pennsylvania Department of Environmental Protection
- Judith Johnsrud, ECNP, Sierra Club
- Steve Kerekes, Nuclear Energy Institute
- David Lochbaum, Union of Concerned Scientists
- Jenny Weil, McGraw Hill's *Inside NRC*

Attachment 6

From: "FLOYD, Steve" <sdf@nei.org>
To: "'Loren Plisco"' <LRP@nrc.gov>
Date: 5/3/01 11:14AM
Subject: RE: Draft IIEP Report

Loren, John,

A few minor comments.

1. Executive Summary, page i, paragraph 4, second sentence: On the NRC resource reasons suggest adding "and ensure regional consistency"

2. Main Report, page 3, Indicative vs Predictive, first sentence: suggest changing the words "low level performance issues" to "performance issues of low safety significance". The rest of the report talks about issues in terms of safety significance -- not levels.

The rest of the report is fine with me. I disagree with Ray's minority opinions but I do not want to draw additional attention to them by rebutting them.

I enjoyed being on the panel and getting a chance to know everyone a little better. I thought overall the group worked very effectively together and were very professional in accommodating differing views.

Steve Floyd

-----Original Message-----
From: Loren Plisco [mailto:LRP@nrc.gov]
Sent: Friday, April 27, 2001 5:36 PM
To: ferdiginc@aol.com; MDAgosti@energy.state.ca.us; shadis@ime.net; Jim_Setser@mail.dnr.state.ga.us; sdf@nei.org; A. Randolph Blough; James Moorman; James Trapp; Ken Brockman; Loren Plisco; Richard Borchardt; Steven Reynolds; david.garchow@pseg.com; schereae@songs.sce.com; ridhill@southernco.com; rod.krich@ucm.com
Cc: Francis Cameron; John Monninger
Subject: Draft IIEP Report

Attached is a Wordperfect and Word version of the draft IIEP report. We have incorporated the comments from Wednesday's meeting, included a minority view, and resorted the issues to put the Priority 1s first in each section.

Please review the document and provide any comments, proposed revisions, or editorial changes to John and I by next Thursday. After I incorporate the comments I plan to sign out the report. However, if there are some significant comments or concerns that look like we need the full panel

consensus, we will go thru one more review cycle.

I do plan on having a parallel review by a technical editor to help clean up our English.

Thanks again for your diligent efforts and the great insights provided during this process.

CC: "'JDM@nrc.gov'" <JDM@nrc.gov>

Attachment 7

From: "Garchow, David F." <David.Garchow@pseg.com>
To: "'LRP@nrc.gov'" <LRP@nrc.gov>
Date: 4/11/01 6:43AM
Subject: Comments on SDP IIEP Issues/Panel Recommendations

Loren,

The following are my comments on the SDP Issues per the agreement we made at the conclusion of the last IEEP meeting. I also included some overall "themes" I think should be woven into the cover letter forthe report. I will see you at the 4/25/01 meeting. I am assuming for travel purposes that the meeting will be at the NRC Headquarters as opposed to another hotel with meeting room facilities. If this is not your plans, please let me know as soon as possible.

On an unrelated note, it might be a good exercise to rune the Tiawan Blackout event of last week through the SDP process. There were numerous equipment and huamn performance issues described in the preliminary write up which was distributed last week.

See you in a few weeks

David Garchow
VP Nuclear Operations
PSEG Nuclear LLC

Issue S-1 Evaluation and Communication of SDP Conclusions

The tone of the issue is not consistent with the priority 2 assignment

What is the "issue"? The text is a collection of feedback but does not describe a problem. I suggest:
The resolution of Phase 2 and Phase 3 SDP evaluations is untimely and contributes to a public perception issue that "negotiations" are occurring outside of the public view. Additionally, resolution of some SDPs are causing inappropriate expenditure of NRC and Licensee resources based on the risk significance of the issues"

Issue S2 FIre Protection SDP

I disagree with the issue tone. I believe that for a large population of fire protection deficiencies the SDP adequate reviews avaiable defense in depth to asssign a risk basis for the finding. I also believe that there are some deficiencies in which the SDP does not work well. The findings at Hatch relative to potentially unqualified fire abarriers in numerous fire

zones caused the entire SDP to be called into question. Both Salem and Hope Creek have had the insection and the SDP was utilized to characterize a White finding at Salem.

S3 Significance Detemination Process Phase 2 Worksheets

No issues

S4 Quality of NRC PSA Tool

We need to comment on the impact of the variabilty of individual Licensee PSAs on the process. I believe that the impact to this process is low if the NRC provides improved indvidual plant worksheets tothe inspectors (based on the risk analysts presentation tothe panel)

S5 Physical Security

Need to reference the effort that has occurred to resolve and ensure that the Commision and staff continue the effort to resolve issue

S6 Determination of Performance Issue

I do not understand the concern. If the inspector can not describe the performance deficiency or the issue with sufficient clarity to assign it to a cornerstone and at least show a compliance with regulation shortfall or an actual event which had risk significance, then the inspector should not be entering the SDP process. This appears to be a change management issue with the inspectors which should work itself out over time

S7 SDPs for Other Areas

I believe that we need to state that there are many potential changes that COULD be made to the process but caution and careful review needs to occur prior to any changes such that we do not increase regulatory burden without a clear tie to risk significance. The solution is to risk inform the regulation, not create SDPs to force needless evaluations on all regulatory compliance issues

S8 ALARA SDP

No issues other than we may need to explain the unintended consequence. I m not sure whether the current SDP measures my ability to control dose or estimate accurately based on the criteria. THe SDP also allows for potential gaming which is a public confidence issue

S9 Evaluation of SDPS

No issue. This could be rolled up into the coverletter relative to a formal self assessment and review process on a continual basis to look at all

aspects of the program.

OVERALL THEMES FOR COVERLETTER

* Process was successfully implemented across the industry with no major issues which threaten the basis of program or safety of the commercial nuclear plants in the USA
* Improvements continue to be made based on feedback from stakeholders
* A integrated formal process needs to be documented and communicated relative to how future enhancements will be evaluated, piloted, communicated, and implemented across all of the plants. Caution should be applied to major changes or additions to requirements to ensure that negative adverse consequences can be avoided
* Routine formal assessments of the program need to be documented and communicated to stakeholders
* The efforts to risk inform the regulations needs to continue to close the gap caused by having risk informed oversight but a largely deterministic regulatory compliance framework

Attachment 8

From: "Garchow, David F." <David.Garchow@pseg.com>
To: "'Loren Plisco'" <LRP@nrc.gov>
Date: 4/29/01 9:27AM
Subject: RE: Draft IIEP Report

Loren
I reviewed the report in detail and have no substantive comments to add. I found several obvious grammatical issues that I will trust the editor to correct. I know that Steve Floyd is writing an industry minority position relative to Design Bases inspection adequacy.

In summary, I can live with the words as written and subject to another panel member causing a conscensus issue, I am prepared to sign. I suggest that if there is a substantial issue raised by a panel member at this late date, they could write a minority position to avoid calling the panel back together.

EMAIL is an excellent method to comunicate with me. Keep me appraised of the progress towards your final submittal to Sam Collins

Thanks

Dave Garchow
Vice President Nuclear Operations
PSEG Nuclear
-----Original Message-----
From: Loren Plisco [mailto:LRP@nrc.gov]
Sent: Friday, April 27, 2001 5:36 PM
To: ferdiginc@aol.com; MDAgosti@energy.state.ca.us; shadis@ime.net; Jim_Setser@mail.dnr.state.ga.us; sdf@nei.org; A. Randolph Blough; James Moorman; James Trapp; Ken Brockman; Loren Plisco; Richard Borchardt; Steven Reynolds; david.garchow@pseg.com; schereae@songs.sce.com; ridhill@southernco.com; rod.krich@ucm.com
Cc: Francis Cameron; John Monninger
Subject: Draft IIEP Report

Attached is a Wordperfect and Word version of the draft IIEP report. We have incorporated the comments from Wednesday's meeting, included a minority view, and resorted the issues to put the Priority 1s first in each section.

Please review the document and provide any comments, proposed revisions, or editorial changes to John and I by next Thursday. After I incorporate the comments I plan to sign out the report. However, if there are some significant comments or concerns that look like we need the full panel consensus, we will go thru one more review cycle.
I do plan on having a parallel review by a technical editor to help clean up our English.

Thanks again for your diligent efforts and the great insights provided during this process.

Attachment 9

From: James Moorman
To: John Monninger
Date: 4/23/01 6:49PM
Subject: Re: IIEP Draft Final Report

John,

As a reminder, due to a previous commitment, I will not be able to attend the meeting this Wednesday. However, I have one comment that I would like the panel to consider.

My wording for the panel recommendation for issue S-1, Process for evaluating and communicating SDP conclusions:

"Use lessons learned from the initial implementation of the reactor oversight program to improve the process for determining the risk characterization of an issue so that it is expedient, scrutable, and understandable to all stakeholders."

thanks...jim

>>> John Monninger 04/23 6:54 AM >>>
The attached files (one in Word and one in Wordperfect) contain the draft final report for the Reactor Oversight Process Initial Implementation Evaluation Panel. We will focus on finalizing this report at our meeting this Wednesday, April 25, 2001. If you develop comments on the report prior to the meeting, please forward them to me such that they could be incorporated into the report prior to the meeting.

Thanks,
John Monninger
jdm@nrc.gov
301-415-3495

Attachment 10

From: James Moorman
To: John Monninger
Date: 5/3/01 12:09AM
Subject: comments on IIEP report

John,

You did a great job on the report. Thanks for all your help. I concur with the report as written, but have two editorial comments:

1. on page "i" of the ececutive summary, third paragraph, second sentence "Although the change-management tools...." I believe that change-management should be hyphenated because words combined to form a unit modifier immediately preceeding the word modified are usually hyphenated. GPO Style manual, section 6.15.

2. on page 2 of the final report, the paragraph after item (3), first sentence. "To accomplish this, panel member**s"** - members needs an "s"

I enjoyed working with you...let me know if you need anything else...jim

New England Coalition on Nuclear Pollution
VT . NH . ME . MA . RI . CT . NY
POST OFFICE BOX 545, BRATTLEBORO, VERMONT o5302

April 27, 2001 *by e-mail*

John D. Monninger
OWFN 5E7
U.S Nuclear Regulatory Commission
Washington, DC 20555

Dear John,

In keeping with the discussion at the last meeting of the Reactor Oversight Process Initial Implementation Evaluation Panel, I am submitting the following strongly held (minority) views which were not reflected in the draft consensus report. I'm hoping that the panel will sit fit to permit their inclusion as a minority view and characterized or introduced in whatever way the panel finds appropriate. Please feel free to edit for length and clarity.

14. The initial implementation does not appear to demonstrate that the ROP has improved identification of design basis issues [DBI] or that the ROP validates recent initiatives to scope DBI. NUREG SR 1275 draws a clear connection between the number of engineering (and design) inspection hours expended and the number of DBI discovered. However, information regarding the number of engineering inspection hours in the first year of the ROP has not been compiled, indicating to some observers that the staff is not focused on DBI under the ROP. Public confidence will not be enhanced unless there is assurance that plants are properly designed, built as designed, modified only with proper analysis, and properly maintained including sufficient attention to "aging" phenomena. Uncertainties regarding DBI serve undermine confidence in Probabilistic Risk Assessments and the concept of "maintaining" safety.
    In an October, 17, 1996 All Employees NRC meeting, Chairman Shirley Jackson opined that one reason for the events at Millstone was that "..we stopped doing design basis inspections too early, and relied on industry …without maintaining an appropriate regulatory focus to assess whether in fact they were dealing with the issue in a timely manner."

15. The IIEP make-up was weighted with regulators and industry to the extent that common interest in moving the ROP forward, and other commonalties, may have limited the panel's perspective. Given the common working culture, it is not surprising that the IIEP critique

was quite similar to the staff review group critique. Future panels might benefit from inclusion of some additional individuals from outside of the NRC-licensee set, for example, attorneys with nuclear specialties or academics. Panel builders might also add to the quality of deliberation by a more even gender mix. While it enriches dialogue and broadens perspective to add members from public interest groups, adding only one or two with views likely to be quite alien to the remainder of the group on some issues is problematic in terms of free and meaningful consensus building.

(That said, I must add that I was edified by the thoughtful consideration, civility, and productivity exhibited by the entire panel.)

Thanks for your patience and attention (everyone). I will try to reach you, John, by phone Monday or Tuesday to find out f there are any questions.

Ray

Raymond Shadis - Post Office Box 76, Edgecomb, Maine 04556
(207) 882 – 7801 shadis@ime.net

From: James Trapp
To: John Monninger
Date: Wed, May 2, 2001 8:13 AM
Subject: Re: Fwd: Summary of the Initial Implementation Evaluation Panel Meeting of April 2-3, 2001

John: I just faxed you 8 pages of comments to the FAX # you provided. All my comments fall into the word smithing (enhancement) category! Please implement as you see fit! No need to get back to me on any comment you or Loren feel are inappropriate.

Appreciated working with you! Best of Luck ! Jim

1. Page i of Executive Summary - Revise the description of the issue O-2 recommendation to "Revise the ROP communication plan to include outreach activities to improve the understandability and accessibility of the ROP for public stakeholders. Appropriate resources should be provided to revise and implement the communication plan. Furthermore, evaluate additional improvements to the ..."

2. Page 1 - Change "April 2, 2001" to "April 2, 2000"

3. Page 4 - Insert "higher" in the following sentence: "The presumption within the reactor oversight process is that the licensee's corrective action program best handles low-level performance trends, and that regulatory response is not required until a "higher" threshold is crossed."

4. Page 4 - Change "discomfort" to "skepticism" in the following sentence: "Many concerns raised about crosscutting issues and inspection report thresholds come from discomfort with this presumption."

5. Page 4 - Revise the description of the issue O-2 recommendation to reflect changes in comment 1 above.

6. Page 5 - Change "process" to "program" in the following sentence: "The staff's reactor oversight process self-assessment process should continuously identify and evaluate any instances of unintended consequences or unnecessary regulatory burdens caused by the performance indicators and make program adjustments where appropriate. (P-1)"

7. Page 9 - Revise the description of the issue O-2 recommendation to reflect changes in comment 1 above.

8. Page 10 - Revise the second sentence in the panel recommendation for issue O-3 to read as follows: "As a minimum, this would include integrating the insights of the reactor oversight process self-assessment process and the overall assessment of industry performance."

9. Page 10 - Revise the third sentence in the panel recommendation for issue O-3 to read as follows: “The staff should also consider periodically engaging both internal and external stakeholders to provide an independent assessment of the reactor oversight process.

10. Page 20 - Delete the phrase “as much as it is enhancing it” in the following sentence: “The breadth of potential issues and the uniqueness of each plant’s design and associated risk profile is leading to a highly complex and time-consuming process that is challenging public confidence as much as it is enhancing it.”

11. Page 20 - Change “frequently” to “sometimes” in the following sentence: “Experience with implementation of the significance determination process during the first year was that the final risk characterizations are frequently untimely and the process is not always transparent to the licensees and external stakeholders.”