March 22, 1999 SECY-99-007A

FOR: The Commissioners

FROM: William D. Travers /s/
Executive Director for Operations

SUBJECT: RECOMMENDATIONS FOR REACTOR OVERSIGHT PROCESS IMPROVEMENTS (FOLLOW-UP TO SECY-99-007)

PURPOSE:

This Commission paper forwards additional information and noteworthy changes to the staff recommendations for improving the regulatory oversight process initially provided by SECY-99-007, "Recommendations for Reactor Oversight Process Improvements."

This Commission paper also responds to the Commission's comments from the January 20, 1999, briefing on SECY-99-007 and provides the staff's responses to public comments.

Finally, this paper presents a pilot plan for implementing the new reactor oversight process including success criteria. The staff is asking the Commission for final approval on the scope and concepts of the recommended changes to the regulatory oversight process, and to approve its continued development and full implementation. The pilot program is intended to identify implementation issues and resolve them in a timely manner in order to support full implementation of the new process beginning in January 2000. Additionally, resource issues will be identified and addressed during the implementation of the pilot program.

BACKGROUND:

On January 8, 1999, the staff issued SECY-99-007, forwarding the staff's recommendations for a new reactor oversight process. On January 20, 1999, the staff briefed the Commission on the

Contact:
Alan L. Madison, NRR
301-415-8498

staff's proposal described in SECY-99-007. The following issues represent a brief summary of the concepts presented in SECY-99-007.

Over the last 10 years, commercial nuclear power plants have been operated safely and overall plant performance has improved. This improvement in plant performance can be attributed, in part, to successful regulatory oversight. Despite this success, the agency has noted that the current reactor oversight process (1) is at times not clearly focused on the most safety important issues, (2) consists of redundant actions and outputs, and (3) is frequently subjective, with NRC action taken in a manner that is at times neither scrutable nor predictable.

In the new regulatory oversight process--

- There will be a risk-informed baseline inspection program that establishes the minimum direct inspection effort for all licensees.

- The NRC will retain its ability to take immediate action as delineated in the action matrix to address a significant decline in licensee performance.

- Thresholds will be established for licensee safety performance, below which increased NRC interaction would be warranted.

- Adequate assurance of licensee performance will require assessment of both performance indicators (PIs) and inspection findings.

- Inspection findings will be evaluated for significance and integrated with PIs in a timely manner to support overall assessment of licensee performance.

- Both PIs and inspection findings will be evaluated against risk-informed thresholds, where feasible.

- Crossing a PI threshold and an inspection threshold will have the same meaning with respect to safety significance and required NRC interaction.

- The baseline inspection program will cover those risk-significant attributes of licensee performance not adequately covered by PIs.

- The baseline inspection program will also verify the accuracy of PI data collection and analysis and provide for event response, as appropriate.

- Enforcement actions will be focused on issues that are risk significant.

- Guidelines will be established for identifying and responding to unacceptable licensee performance.

The following discussion provides additional process details, including a summary of public comments, a tool to aid in assessing the significance of inspection findings and the associated feasibility review results, enforcement strategy, a summary of noteworthy revisions to recommendations in SECY-99-007, and a pilot program plan with associated success criteria. An Office of Public Affairs summary of the new reactor oversight process and a communications plan are also included. These issues are discussed in detail in Attachments 1 through 8 to this paper.

DISCUSSION

Summary of Public Comments

On January 22, 1999, the staff issued a *Federal Register* notice soliciting public comments on the scope and content of the recommendations described in SECY-99-007. The comment period was limited to 30 days to support issuance of this Commission paper and the overall transition schedule. The staff received 28 responses from diverse organizations including licensees, the Nuclear Energy Institute (NEI), the Institute of Nuclear Power Operators, an owners group, public advocacy groups, State regulatory organizations, and a member of the general public.

The staff is using a three-pronged approach to address stakeholder comments: (1) high-level policy issues and comments are addressed below and in Attachment 1 to this paper, (2) detailed comments are being addressed during the development of program documents (e.g., performance indicator manual, inspection procedures, assessment procedures, enforcement guidance), and (3) some comments will be addressed during the pilot application of the new reactor oversight process (i.e., if a methodology being piloted is unsuccessful, an alternative offered by a commentor may be considered).

The high-level policy issues and the staff's approach in addressing them are as follows:

- Issue: Stakeholders are not being given a reasonable amount of time and opportunity to comment on the proposed changes to the reactor oversight process.

  Approach: The staff agrees that the aggressive schedule for piloting and implementing the new reactor oversight process makes it more difficult to seek, review, and incorporate stakeholder comments. However, the staff is making an earnest effort to address this issue. The staff will seek stakeholder comments on this paper and on oversight program policy documents. The staff will also hold several public workshops and issue press releases, when appropriate, to communicate with the general public. These activities are described in the communication plan, Attachment 8 to this paper.

- Issue: Several significant components of the new reactor oversight process remain to be developed, including the methodology for assigning significance to inspection findings and the revised enforcement policy. In addition, stakeholders would like the opportunity to comment on these components.

  Approach: These process components are addressed in Attachments 2, 3, and 4 to this paper. The staff will seek stakeholder comment on these components in parallel with the Commission's review of this paper. Comments will be considered during the development of guidance documents for the pilot program.

- Issue: Feasibility of the new reactor oversight process for full implementation needs to be clearly shown. In particular, how does the process deal with licensees that experience numerous problems and degradations of low safety significance, which may be precursors of future significant problems, but where there are few, if any, problems that trip a PI threshold?

Approach: The feasibility review described in Attachment 3 to this paper concluded that the new process is feasible to pilot. The pilot program and associated success criteria are designed to measure whether the new process is ready for full implementation in January 2000. It is expected that problems that arise during the pilot program can be addressed before full implementation.

Attachment 2 to this paper describes how degradations in plant performance will be reviewed. Currently, the staff intends to review issues or groups of coexistent issues for their risk significance. In addition, the Office of Nuclear Regulatory Research (RES) is evaluating the feasibility of designing a system to analyze the risk significance of numerous small problems of low safety significance, which in the aggregate could be significant. If this process proves feasible, the staff would appropriately incorporate it into the new reactor oversight process.

- Issue: Historically, subjectivity appears to creep into the NRC reactor oversight process through inspection findings focused on processes and outputs versus outcomes. How is the NRC addressing this concern?

  Approach: Both the risk-informed baseline inspection program and the inspection finding risk characterization process are designed to focus NRC attention on risk significant issues. In addition, the enhanced use of PIs provides additional objectivity to the overall process. Finally, the staff will continue to regularly solicit regulatory impact information from stakeholders.

Attachment 1 to this paper provides additional staff approaches for addressing high-level comments related to specific topics such as the use and suitability of PIs.

<u>Additional Reactor Oversight Process Details</u>

Inspection Finding Risk Characterization Process (IFRCP)

In SECY-99-007, the staff highlighted the need to develop a method for risk characterizing inspection program findings. The staff developed a process, described in detail in Attachment 2 to this paper, to elevate potentially risk-significant issues, screen out issues that have minimal or no risk significance, and to trigger more detailed analysis of issues when warranted. The current process only focuses on inspection findings associated with the cornerstones for initiating events, mitigation systems, and barrier integrity. The staff is performing additional work to develop the process for issues associated with emergency preparedness, radiation safety, safeguards, shutdown risk, and fire protection. The staff will complete these efforts in time to support implementation of the pilot program.

Note: Subsequent to the feasibility review discussed below, the staff renamed this process the Significance Determination Process (SDP) to more accurately and succinctly describe the process.

The staff performed a limited-scope feasibility review using PIs and the process for characterizing risk significance of inspection program findings to determine if the new regulatory oversight process was feasible to pilot. The staff reviewed the performance data for four sites, as described in Attachment 3 to this paper, and determined that the process was feasible to pilot, as long as the following issues were addressed:

- Issue: The risk-informed baseline inspection program should provide increased focus on the area of design engineering, compared to that provided by the current core inspection program.

  Approach: The transition task force personnel responsible for developing the baseline inspection program have been tasked with enhancing the focus on the area of design engineering.

- Issue: The additional development work on the process, described above and in Attachment 2, needs to progress to the point that it can be tested during the pilot program. In some areas, it may be more feasible to use agency risk analysts to review inspection findings, until the process is fully developed. The impact of this approach on the alignment of staff resources is being reviewed.

  Approach: The staff responsible for these technical areas are working diligently to complete these activities before commencement of the pilot program.

- Issue: The pilot program should be designed to record performance data in a conservative manner. Specifically, the staff should continue to document those issues with some risk significance, which do not trip an inspection finding significance threshold.

  Approach: The staff will continue to record and trend information that does not rise to the white threshold (described in Attachment 2 to this paper). As noted above, RES is working to develop a process to analyze the risk significance of numerous, low safety-significant issues, which in the aggregate could be significant.

Enforcement Strategy

In SECY-99-007, the staff highlighted the need to further develop options for improving the enforcement policy. The Office of Enforcement developed a new enforcement strategy for the new reactor oversight process that will be tested during the pilot program. The proposed enforcement approach is designed to complement the assessment process--

- For violations that are evaluated under the action matrix and SDP:

  1 Notices of violation will be issued for safety-significant violations; a written response from the licensee will be required. Severity levels will not normally be used, nor will civil penalties normally be issued. The action matrix rather than severity levels and civil penalties will be used to provide incentives to improve performance.

2 Noncited violations will usually be issued for less safety-significant violations; correcting these issues will be tracked under the licensee's corrective action program.

- The traditional enforcement process (including the use of civil penalties) will be reserved for:

  1 situations in which there are actual safety consequences (such as an overexposure to the public or plant personnel or a substantial release of radioactive material),

  2 violations related to willfulness including discrimination, or

  3 violations that may impact the NRC's ability for oversight of licensed activities.

- The Commission will reserve its authority to issue civil penalties for particularly significant violations such as safety limit violations and accidental criticality.

Specific details and limitations are discussed in Attachment 4 to this paper. Following Commission approval of the changes to the enforcement process, the staff intends to submit an Interim Enforcement Policy for publication in the *Federal Register* and for Commission approval.

A strong communication outreach effort that emphasizes that the NRC is continuing to focus on compliance as part of the agency's effort to become more risk-informed and performance-based will be used to provide accurate and timely information to NRC stakeholders and the public. As knowledge is gained regarding how the inspection, assessment, and enforcement processes fit together, the consistent agency approach should be recognized. This approach will continue to cause increased regulatory action in response to risk-significant performance degradations (as defined by the action matrix) and should result in deterring poor performance that the agency's enforcement policy was intended to provide in the past. A process that is more predictable, objective, and understandable, should increase public confidence that the agency is satisfying its mission. The staff will closely monitor the pilot program to ensure that enforcement policy changes are clearly communicated and consistently implemented.

Changes from SECY-99-007

Attachment 5 to this paper contains program guidance which has been revised from that originally presented in SECY-99-007. Of note is that the staff revised the performance assessment process action matrix and performance indicator table in response to Commission and stakeholder comments.

Pilot Plan

As discussed in SECY-99-007, the staff will pilot the new reactor oversight process during a 6-month period beginning June 1, 1999. Details of the pilot program are discussed in Attachment 6 to this paper. The purpose of the pilot program is to exercise the new processes (PI data reporting, inspection, assessment, and enforcement), to identify process and procedure problems and make appropriate changes, and, to the extent possible, evaluate the effectiveness of the new process. Full implementation of the new oversight process will commence pending successful completion of the pilot program, as measured against preestablished success criteria. A notable feature of the pilot program is the use of a Pilot Program Evaluation Panel, consisting of NRC, NEI, industry, public, and State representatives, to aid in evaluating the effectiveness of the pilot program.

OPA issued a press release on February 22, 1999, announcing the eight pilot plant sites (consisting of nine plants) and licensees. The list of pilot plants is also contained in Attachment 6 to this paper, along with the pilot plant selection criteria.

Communication and Training Plans

In response to the Commission's comments on SECY-99-007, OPA prepared a plain language summary of SECY-99-007: NUREG-1649, "New NRC Reactor Inspection and Oversight Program (Attachment 7 to this paper)." OPA also posted this document on the NRC Web page to enhance availability to the general public. This document will be revised periodically as progress is made on the new reactor oversight process.

The staff also developed a communication plan, Attachment 8 to this paper, to coordinate the extensive efforts required to properly communicate plans, activities, and results to our stakeholders before, during, and after the transition to the new reactor oversight process. Activities of note include public workshops, press releases, and presentations to NRC personnel, representatives of the industry, and the public.

Currently, the staff is developing training activities and materials for the NRC and licensee personnel associated with the pilot plants. The staff is also developing a longer term training plan to support full implementation of the new oversight process. The longer term training will commence early in Fiscal Year (FY) 2000.

RESOURCES

As described in SECY-99-007, considerable resources will be required in the short term to develop and implement these changes. Required full-time equivalent positions are within the currently budgeted resources in FY 1999 and FY 2000 for developing and implementing changes to the inspection and assessment programs.

Although overall resource savings are expected in the long term, it would be premature to make any resource reduction decisions at this time beyond those already documented in the FY 2000 budget submittal. The staff will be able to further quantify these resources changes after experience is gained through the pilot program and early phases of full implementation.

COMMISSION COMMENTS

During the January 20, 1999, briefing on SECY-99-007, several Commissioners identified areas of interest. While the SRM for this paper has yet to be issued, this paper addresses many of the high level comments received during the briefing. The staff will address detailed comments during the development of program guidance for the new reactor oversight process.

The Commission also asked the staff to estimate the impact of the new reactor oversight process on licensee resources. The staff believes that after the initial start-up period, the overall impact on licensee resources may be less than the current process. Factors that would result in less direct effort are (1) the baseline inspection program and regional initiative inspection, as currently envisioned, will require less direct inspection hours than the current inspection program, (2) the streamlined assessment process is expected to require fewer NRC staff resources than the current Systematic Assessment of Licensee Performance and Senior Management Meeting processes, and (3) the new enforcement policy will treat low safety-significant issues more efficiently by allowing licensees to incorporate these issues within their corrective action programs, as opposed to requiring formal responses to the NRC. However, the impact of the staff's efforts to assess the risk significance of inspection findings and possible adjustments to inspector roles and responsibilities not associated with direct inspection may require greater effort. Clearly, the staff needs experience through the pilot program and early phases of full implementation to make informed judgements about resource implications. The staff developed success criteria for the pilot program related to the reduction in unnecessary regulatory burden and intends to survey licensees on this issue following the first full year of implementation.

COORDINATION:

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

The Office of the Chief Information Officer has reviewed this Commission paper for information technology and information management implications and has no objections.

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

RECOMMENDATIONS: That the Commission:

1. Approve the scope and concepts of the recommended changes to the regulatory oversight process, and its continued development and full implementation.

2. Note that unless directed otherwise, the staff will continue with development efforts.

William D. Travers
Executive Director
for Operations

Attachments:

1. SECY-99-007 Public Comment
2. Inspection Finding Risk Characterization Process
3. Feasibility Review of the Inspection Finding Risk Characterization and Reactor Oversight Processes
4. Enforcement Strategy for New Reactor Oversight Process
5. Noteworthy Changes to SECY-99-007 Concepts
6. Pilot Program
7. New NRC Reactor Inspection and Oversight Process (NUREG-1649)
8. Communication Plan

SECY-99-007 PUBLIC COMMENT

Attachment 1

1 OVERVIEW

1.1 Background

On January 8, 1999, the staff issued SECY-99-007, “Recommendations for Reactor Oversight Process Improvements,” which forwarded the staff’s recommendations for improving the regulatory oversight processes. This paper presented recommendations for improving the NRC’s inspection, assessment, and enforcement processes and included a transition plan for implementing these recommended changes. By *Federal Register* notice dated January 22, 1999, the staff solicited public comments on the scope and content of the recommendations described in SECY-99-007. The *Federal Register* notice used a questionnaire format to help solicit and focus comments on the concepts developed for the regulatory oversight process. A 30-day comment period, which ended on February 22, 1999, was established to submit comments. The following provides a summary of the comments received and their disposition.

1.2 General Information

The 28 respondents to the *Federal Register* notice are listed in Table 1.1 of this attachment. The respondents included a wide cross-section of stakeholders, including 19 individual licensees, the Nuclear Energy Institute (NEI), the Institute of Nuclear Power Operators, the Westinghouse Owners Group, the Region IV Utility Group, two public advocacy groups, two State regulatory organizations, and one member of the general public.

The scope of the responses varied considerably among the respondents. Some addressed every subject in the questionnaire, others wrote general letters that did not specifically address the questions in the *Federal Register* notice. Because the responses were so varied, the staff chose to capture general comments from the responses (primarily extracted from the text of the letters) as well as specific responses to the questions. Comments that differed from the majority opinions are listed under “Other views”. Specific responses are numbered according to their originator as listed in Table 1.1. As stated in the *Federal Register* notice, individual comments may be reviewed at the NRC Public Document Room.

1.3 Summary of Comments Received

The majority of the comments provided by the respondents dealt with specific details and the implementation of the various recommended processes. Examples of these comments include (1) the appropriate thresholds and their basis for the various PIs, (2) the ability of recommended PIs to adequately measure licensee performance, (3) the intent and focus of the inspectable areas in the new risk-informed baseline inspection program, and (4) the conduct of the new assessment activities and the use of the action matrix. These comments were reviewed and forwarded to the staff responsible for developing those areas of the new oversight program. These comments will continue to be evaluated and incorporated as appropriate as the process details are completed.

Several respondents provided comments that have a significant impact on the concepts developed for the regulatory oversight processes and the plans for transitioning from the current processes to the new processes. These comments were evaluated by the staff and dispositioned as follows:

A. Several respondents noted that Commission paper SECY-99-007 did not provide sufficient detail on how the enforcement policy would be revised to be integrated and consistent with the proposed inspection and assessment processes. The staff has further developed the recommendations for revising the enforcement policy, which are presented in Attachment 4.

B. Several respondents also commented that more information was needed on how inspection findings from the new risk-informed baseline inspection program would be evaluated for significance, and used with performance indicators (PIs) to assess licensee performance. The staff has also completed significant work in this area, with the concepts presented in Attachment 2.

C. Another concern expressed by the respondents was that any additional developments to the regulatory oversight processes should be provided to the public for comment prior to implementation. In particular, the respondents requested that the public be allowed to review and comment on the revised enforcement policy and the inspection finding evaluation process prior their implementation.

To address this concern, the staff intends to hold a 30-day public comment period on the new regulatory oversight process details, including enforcement policy revisions and inspection finding evaluation guidance, during the pilot program. This will allow any process changes resulting from public review and comment to be incorporated during the pilot program, prior to full implementation.

D. Several respondents stated that manual scrams should not be included with automatic scrams in the unplanned scram PI. The commenters stated that including manual scrams in this PI could send the wrong message to licensee management and operations personnel, and could result in a non-conservative decision with adverse safety consequences.

The staff reviewed this comment and concluded that the impact would be negligible, relative to other factors influencing operator response during a transient. The revised reactor oversight assessment program is risk-informed and performance-based to focus NRC and licensee resources on the most important contributors to risk to public health and safety. The objective of the Initiating Events cornerstone is to limit the frequency of those events that upset plant stability and challenge critical safety functions. Such an event can lead to either an automatic scram when a plant parameter exceeds a set point, or a manual scram when directed by an abnormal procedure or an emergency operating procedure. In addition, operators are trained to manually scram the reactor if an automatic scram is unavoidable. A manual scram, therefore, may be implemented for the same or similar plant conditions that would cause an automatic scram, and the effect on the plant is the same - to upset plant stability and challenge critical safety functions. From a risk perspective, there is no difference between an automatic and a manual scram.

E. Several respondents stated that the green/white thresholds for the SSPI unavailability PIs are in some cases more restrictive than the industry goals for the year 2000. The commenters noted that these goals were carefully chosen to balance planned unavailability with the conduct of preventive maintenance to maintain high levels of safety system reliability.

The staff reviewed this comment and concluded that the thresholds should be changed. The green/white thresholds for the BWR residual heat removal (RHR) and PWR high pressure safety injection (HPSI) systems have been changed from 0.015 to 0.020 to match the industry goals.

F. A comment was received regarding the use of the reactor coolant system (RCS) specific activity PI to monitor fuel cladding barrier integrity. It was noted that the Union of Concerned Scientists (UCS) had submitted a technical report and 10 CFR 2.206 petitions concerning the continued plant operation with fuel cladding failures at the Perry Nuclear Power Plant and River Bend Station. These Petitions stated there was no technical basis to allow plants to operate with any leaking fuel. It was further stated that the NRC should resolve these safety concerns regarding operating with leaking fuel prior to adopting the RCS specific activity PI.

By letter from the Director, Office of Nuclear Reactor Regulation, the UCS request for the immediate shutdown of the Perry and River Bend plants was denied. The basis for this denial was that a preliminary evaluation by NRC staff concluded that there were no urgent safety problems that warranted immediate action by the NRC. Nuclear plant operation with a minimal amount of fuel cladding damage is allowed, provided that the licensee continues to meet its technical specification (TS) reactor coolant system chemistry requirements, which ensure that the radiological consequences of postulated design-basis accidents are within the appropriate dose acceptance criteria. The staff intends to continue to use this PI in the new oversight processes. The staff will re-evaluate the use of this PI, as appropriate, when a Director's Decision pursuant to 10 CFR 2.206 is rendered on the issues raised in the Petitions.

G. Several respondents commented that the Containment Leakage PI, with a green/white threshold of >100% L_A, did not present a good measure of barrier integrity. They stated that this PI was unlikely to ever leave the green band, and therefore would provide a false sense of security. It was suggested that a more appropriate measure of containment integrity would be the reliability of the containment heat removal systems.

The staff reviewed this comment and reached the following conclusions. The proposed containment leakage indicator monitors the "as found" integrated containment leakage, and is a measure of containment performance over the last operating cycle. The staff agrees that this is not a good indicator of the current or future performance of the containment. The staff is developing an indicator proposed by NEI which will monitor containment performance throughout the operating cycle as licensees perform local leak rate tests. The results of those tests will be used to modify the base leakage determined prior to the start of the operating cycle. The staff intends to implement this indicator in the pilot program. In addition, the performance of the containment heat removal systems are monitored by the safety system failure indicator.

H. One respondent raised a concern that the new assessment model appears to mask performance problems that were caught in the past. This comment was based on the PI data provided in Attachment 2 to SECY-99-007, which presented the results of back-testing the proposed PIs against historical plant data. It was noted that none of the PIs for the plants tested crossed the RED threshold, and if these results were applied to the action matrix, the NRC would not have required any of these plants to shutdown. The respondent stated that the NRC should complete it's back-testing by explaining how it would have handled several historical problem plants.

As described in Attachment 3, the NRC performed a feasibility study of the inspection finding risk characterization process to determine if this process would identify risk-significant issues that would indicate the need for increased NRC interaction. Four plants were included in this feasibility study, including DC Cook and Millstone. The results of the study showed that the inspection finding risk characterization process identified the historical, risk-significant issues at these plants. These findings, when applied to the action matrix, would have resulted in NRC actions similar to those that were actually taken during the time periods reviewed.

I. Many respondents stated that it was important that the PI thresholds be consistent with the plant design and licensing basis. One example where this might not be the case was given for the emergency power safety system performance indicator (SSPI) unavailability PI. The green/white threshold for this PI does not allow for the increased technical specification allowed outage times for emergency diesel generators that the NRC has recently approved for some licensees. Therefore, this PI could trip the threshold when performing maintenance that is fully in accordance with regulatory requirements.

The staff reviewed this comment and determined that the threshold should be changed. The emergency ac power system green/white threshold has been changed from 0.020 to 0.038 to allow for the increased allowed outage time.

J. Several respondents stated that the physical security PIs and some of the emergency preparedness (EP) PIs have not been well developed, are not risk-informed, and their usefulness is still unknown. These respondents stated that the proposed PIs for the physical protection system should be deleted and physical protection should be assessed using complimentary inspections only. Further, the PIs for EP should be reviewed for their ability to indicate safety-significant, risk-informed performance.

The staff reviewed this comment and reached the following conclusions. The physical security PIs were developed by the NRC with input from industry representatives knowledgeable in plant security requirements and systems. Key attributes of licensee performance were identified that protect the plant against radiological sabotage. PIs were then identified that could provide objective measures of some of these attributes. These PIs measure the performance of equipment and programs that are important to meeting the objective of this cornerstone. They are therefore risk-informed, represent the best effort of industry and NRC experts, and are expected to provide useful information. They will be put through a trial program to test their usefulness. Should the trial program expose any weaknesses, or identify any necessary improvements, appropriate changes to the physical security PIs will be made prior to their full implementation.

The EP PIs were developed by the NRC with input from industry staff knowledgeable in EP. The key attributes of licensee performance were identified that provide adequate emergency preparedness to protect public health and safety. PIs were then identified that could provide objective measures of some of these attributes. These PIs measure the performance of equipment and programs that are important to meeting the objective of this cornerstone. They are therefore risk-informed, represent the best effort of industry and NRC experts, and are expected to provide useful information. The staff has discussed the EP PIs in public meetings with industry personnel involved in emergency preparedness. There was agreement in these meetings that the indicators, with some modifications, provide useful measures of some of the key attributes of licensee performance to meet he objective of the EP cornerstone. The proposed modifications have been incorporated and the indicators will be used in the pilot program and any necessary changes will be made prior to their full implementation.

K. Many respondents had concerns with the emergency response organization (ERO) drill participation PI in particular. These respondents stated that this PI is merely a measure of attendance at a drill, and does not measure a safety outcome or measure the capability of the ERO to perform its duty. The respondents further stated that this PI does not have a regulatory basis and could impose a significant new training burden on licensees.

The staff reviewed this comment and reached the following conclusions. The ERO drill participation PI is complementary to the drill/exercise performance (DEP) indicator. The DEP, if it is in the green band, demonstrates that the licensee is able to perform, accurately and in a timely manner, the risk-significant functions of classification of emergencies, notification of offsite authorities, and preparation of protective action recommendations. But the DEP indicator alone does not provide assurance that the licensee has an adequate number of proficient personnel to staff the ERO at any time to successfully perform these important functions. The ERO drill participation PI provides that assurance by monitoring the proficiency of the licensee's key staff positions. It is more than a measure of attendance, as it requires participation in the drill in a meaningful manner so that experience and proficiency are obtained. 10 CFR 50.47(b)(14) requires that deficiencies identified in drills or exercises be corrected, including ERO member proficiency problems. It does not impose a significant new training burden on licensees because it allows for a wide range of drill experiences to be credited toward proficiency.

L. Several respondents stated that It was not appropriate to include specific severe accident management guideline (SAMG) elements in the inspection or performance assessment processes for the new oversight process. The reason given by the respondents is that SAMG was an industry initiative and there was no regulatory basis for inspecting or assessing SAMG implementation.

The staff has reviewed these comments and agrees that licensees' activities for severe accident management are not appropriate for direct inspection, especially in the baseline program. However, the staff believes that some oversight of licensees' self-assessments in this area is appropriate and is still considering how best to incorporate the oversight into the inspection program.

2 RESPONSE TO *FEDERAL REGISTER* NOTICE QUESTIONNAIRE

A. REGULATORY OVERSIGHT FRAMEWORK, PERFORMANCE INDICATORS, AND THRESHOLDS

1. Framework Structure

The oversight framework includes cornerstones of safety that (1) limit the frequency of initiating events; (2) ensure the availability, reliability, and capability of mitigating systems; (3) ensure the integrity of the fuel cladding, the reactor coolant system, and containment boundaries; (4) ensure the adequacy of the emergency preparedness functions; (5) protect the public from exposure to radioactive material releases; (6) protect nuclear plant workers from exposure to radiation; and (7) provide assurance that the physical protection system can protect against the design-basis threat of radiological sabotage. **Are there any other significant areas that need to be addressed in order for the NRC to meet its mission of ensuring that commercial nuclear power plants are operated in a manner that provides adequate protection of public health and safety and the environment and protects against radiological sabotage and the theft or diversion of special nuclear materials?**

<u>General Comments</u>

Most respondents stated the seven cornerstones cover all significant areas that need to addressed in order for the NRC to meet its mission.

<u>Other Views</u>

Some respondents recommended that the NRC use plant-specific (or at least design type-specific), state of the art PRA's in order to have the best available information. Thresholds should be derived from plant-specific (or at least type-specific) PRA data (13) (20).

Some respondents stated that an additional cornerstone that covers the cross-cutting issues of management and human performance needs to be seriously considered, and PIs established, to measure performance in those areas. Additionally, design issues will still have to be dealt with by the inspection program (13) (5).

Some respondents were concerned about the quality and completeness of NRC reviews of licensee EP programs and that the biennial evaluations by the NRC are not representative of true utility emergency preparedness (9) (13).

The current proposal fails to address the interface between the NRC reactor oversight process and the whistle blowers in the nuclear industry (15).

2. Performance Bands

The oversight framework includes thresholds for determining licensee performance within four performance bands: a licensee response band, an increased regulatory response band, a required regulatory response band, and an unacceptable performance band. The thresholds between the bands were selected to identify significant deviations from nominal industry performance and to differentiate between levels of risk significance, as indicated by PIs or inspection findings. **Are there alternative means of setting thresholds between the bands that should be considered?**

General Comments

Most respondents stated that the methodology for setting thresholds for the PIs was appropriate. The NRC has amply described the thresholds to be used in the new oversight process however the proof will be in the implementation.

Other Views

Thresholds should be based on root causes, rather than symptom based (5).

There was no discussion in SECY-99-007 of how inspection findings will be converted into assessment inputs. The NRC should describe how it intends to establish thresholds for inspection findings and provide a separate public comment period once that information is available (1) (6) (8).

Not necessarily between the bands, but perhaps PIs should be considered for below the green licensee response band. As early indicators (for licensee consideration only), a group of complimentary PIs under the primary indicator might give indication of changing performance in specific areas (13).

3. Performance Indicators

The NRC staff developed a set of 20 indicators to measure important attributes of the seven areas listed in question 1 above. The PIs, together with findings from associated baseline inspections in attributes not fully measured or not measured at all by the indicators, should provide a broad sample of data on which to assess licensee performance in those important attributes. One reason these specific indicators were proposed is because they are readily available and can be implemented in a short period of time. Other indicators will be developed and included in the oversight process as their ability to measure licensee performance is determined. **Will these PIs, along with inspection findings, be effective in determining varying levels of licensee performance?**

General Comments

Most respondents stated that this approach should provide the best possible means of determining levels of safety performance by licensees. Most stated that the process was sound, but only time would tell, and the process would only be as good as it is implemented.

Other Views

One respondent stated that previous NRC performance indicators have been manipulated and that the notion of improving industry performance is more a function of changes in reporting requirements or NRC policies rather than actual industry improvement (15).

4. Other Comments

Are there any other comments related to the oversight framework, PIs, or thresholds?

General Comments

One respondent commented on the use of the RCS specific activity PI and the containment leakage PI. The respondent stated that it is illegal and potentially unsafe for nuclear plants to operate with any fuel leakers, as stated in 10 CFR 2.206 petitions filed with NRC. This issue should be resolved prior to adopting this PI. The respondent further stated that the containment leakage PI is a meaningless indicator because it will always be green (or if it isn't it will represent plant conditions that had already been corrected) (1).

The SSPI indicators do not properly account for system degradation caused by passive design problems (1).

It should be noted that design and licensing basis issues have been prominent in several recent plant performance declines. It would appear that the NRC inspection would continue to be the appropriate method for the NRC to monitor this important area (7).

The PIs used at plants should be changed only with the permission of the NRC, like the current licensee quality assurance programs (13).

B. RISK-INFORMED BASELINE INSPECTIONS

1. Inspectable Areas

The proposed baseline inspection program is based on a set of inspectable areas that, in conjunction with the PIs, provides enough information to determine whether the objectives of each cornerstone of safety are being met. **Are there any other areas not encompassed by the inspectable areas that need to be reviewed to achieve the same goal?**

General Comments

Most respondents stated that there were no additional inspectable areas that needed to be reviewed. However, if additional PIs are developed, there should be a corresponding decrease in inspection activities.

2. Other Comments

Are there any other comments related to the proposed baseline inspection program?

General Comments

Inspection procedures will have to include more than brief checklists. They should be supplemented with a living explanatory document (5).

The proposed baseline inspections will concentrate on areas not covered by PIs and consequently there will be little chance to confirm or refute inspection findings. The NRC should provide objective acceptance criteria for inspection findings (1).

If management effectiveness is not adopted as a cornerstone, then this area needs to be inspected (13).

The baseline inspection program along with the PIs have been sufficient to figure which reactors were the poor performers and needed additional regulatory attention. However, when discussions regarding enforcement and the watch list, senior managers substituted their own opinions for data (15).

C. ASSESSMENT PROCESS

1. Frequency of Assessments

The proposed assessment process provides four levels of review of licensee performance: continuous, quarterly, semiannual, and annual. Each successive level is performed at a higher organizational level within the NRC. The semiannual and annual periods would coincide with an annual inspection planning process and the NRC's budgeting process. **Are the proposed assessment periods sufficient to maintain a current understanding of licensee performance?**

General Comments

Most respondents stated that the proposed assessment periods should be sufficient and that there will be a more frequent review of licensee performance than now exists. Several respondents also recommended that inspector exit meetings continue since they are a frequent and formal means to communicate with licensee management.

Other Views

The proposed assessment periods would be sufficient if the NRC had ever shown a willingness to step in and halt unsafe operation (15).

2. Action Decision Model

An action matrix was developed to provide guidance for consistently considering those actions that the NRC needs to take in response to the assessed performance of licensees. The actions are categorized into four areas (management meeting, licensee action, NRC inspection, and regulatory action) and are graded across five ranges of licensee performance. The decision to take an action would be determined directly from the threshold assessments of PIs and inspection areas. As changes in performance become more significant, more significant actions would be considered. The action matrix is not intended to be absolute. It establishes expectations for NRC-licensee interactions, licensee actions, and NRC actions and does not preclude taking less action or additional action, when justified. **Will the use of the action matrix and underlying decision logic reasonably result in timely and effective action?**

General Comments

Most respondents stated that the use of the action matrix should result in an effective and timely assessment process. Some respondents recommended eliminating the numbers from the action matrix as these numbers could easily be confused as the new equivalent of SALP scores. Also, the use of the term "overall red" should not be used as it implies that all of the performance indicators and inspection findings add up into a total rating.

Other Views

Timely and effective action can only be achieved if the senior management at NRC has the will to enforce the regulations. "Executive over-rides" provide any opportunity to replace facts with individual judgement and prevent them from holding licensees accountable (15).

The previous oversight process would have worked if senior management had not neglected or downplayed clear warning signs of declining performance trends (1).

3. Communicating Assessment Results

The proposed assessment process includes several methods for communicating information to licensees and the public. First, the information being assessed (PIs and inspection results) will be made public as the information becomes available. Second, the NRC will send each licensee a letter every 6 months that describes any changes in the NRC's planned inspections for the upcoming 6 months on the basis of licensee performance. Third, each licensee will receive an annual report that includes the NRC's assessment of the licensee's performance and any associated actions taken because of that performance. In addition to issuing the annual assessment report, the NRC will hold an annual public meeting with each licensee to discuss its performance. Finally, a public meeting with the Commission will be held annually to discuss the performance at all plants. **Do these reports and meetings provide sufficient opportunity for licensees and the general public to gain an understanding of performance and to interact with the NRC?**

General Comments

Most respondents stated that more information will be made available under this system than the previous one.

Other Views

This process seems to provide an ample opportunity for licensees to understand and unduly influence NRC's assessment of their reactors. As for the public, the only means for interacting with the NRC and the licensee is through the 10 CFR 2.206 process (15) .

Any discussions that attempt to try to summarize a plant's overall performance should be avoided since the PIs and inspection findings will speak for themselves (21).

4. Other Comments

Are there any other comments related to the proposed assessment process?

General Comments

Seems to be artificially tied to the budget process. More likely cycle would be based on refueling outage or consistent with TS (5).

E. IMPLEMENTATION

1. Transition Plan

The Commission paper includes a transition plan that identifies important activities needed to complete and implement the proposed processes. **Are there other major activities not identified on the plan that if not accomplished could prevent successful implementation of the proposed processes?**

General Comments

Most respondents stated that the transition plan appears well thought out and robust. However, there will be a need to address cultural issues and individual concerns.

Other Views

There needs to be a culture change amongst inspectors such that the new program doesn't continue unintended regulation by inspection (21).

The NRC should consider providing a full-time staff position with responsibility for the reactor oversight program comparable to the function of the Agency Allegation

Advisor to monitor the staff's actions in implementing the revised oversight process (1).

2. Other Comments

Are there any other comments related to implementing the new processes?

General Comments

The public needs to be educated on the process and a brief, plain language english description of the proposed process should be developed for public dissemination (1).

F. ADDITIONAL COMMENTS

In addition to the previously mentioned issues, commenters were invited to give any other views on the NRC assessment process that could assist the NRC in improving its effectiveness.

General Comments

Most respondents commended the Commission and staff for its work on the new process. They were encouraged by the fundamental, positive change to the regulatory oversight processes and believed that the process and reasoning behind the proposed process were sound. More work needs to be done with change management and in planned reforms in inspection and enforcement.

Other Views

Some respondents stated that the practical effect of using specific metrics for performance measurement is that these PI metrics become regulatory requirements, and enforced as such. They further stated that thresholds may be perceived as limits by utilities, which may penalize conservative decision making (8) (16).

One respondent recommended that 1) EP plans, programs, and procedural considerations by the NRC should include the active participation of the state government, 2) EP should be re-established as a separately evaluated area, 3) the statistical approach to EP evaluation should be validated by two independent, qualified, non-government organizations, and 4) The NRC should put more, not less, resources into EP evaluations (9).

One respondent stated that as additional PIs are developed, that there be a corresponding decrease in the baseline inspection activity. Changes to the thresholds should not be made without good reason and should not rise with any future overall industry performance. Licensee performance should not be assessed by either PIs or inspections in areas that do not relate to a regulatory requirement.

The action matrix should be applied within a strategic performance area, rather than on a cornerstone by cornerstone basis (7).

Many respondents noted that the enforcement changes and process for evaluating inspection findings were not described in SECY-99-007, and the public has a right to review and comment on these proposed changes (1) (6). The opportunity for public comments should also be afforded for the final performance metrics set to be used (8).

Many respondents noted that it is important that the PI thresholds be consistent with plant design and licensing basis. The emergency power SSPI unavailability PI does not allow for the increased TS AOTs for EDGs that some licensees have recently adopted after NRC review and approval. Therefore, this PI could trip a threshold when performing maintenance fully in accordance with regulatory requirements (7) (8) (14) (16).

Several respondents had comments on the EP and physical security PIs. One respondent stated that the proposed PIs for physical protection system should be deleted (18). Others stated that the physical security PIs and some of the EP PIs have not been well developed, are not risk-informed, and their usefulness is still unknown. Physical protection should be assessed using complimentary inspections only, and PIs for EP should be reviewed for their ability to indicate safety-significant, risk-informed performance (19) (20).

Many respondents had concerns with the emergency response organization (ERO) drill participation PI in particular. These respondents stated that this PI is merely a measure of attendance at a drill, and does not measure a safety outcome or measure the capability of the ERO to perform its duty. The respondents further stated that this PI does not have a regulatory basis and could impose a significant new training burden on licensees (6) (7) (8) (16) (18).

Several respondents stated that further work needs to be done in integrating the enforcement process with assessment (21) (7) (19).

Some respondents stated that it is not appropriate to include specific severe accident management guideline (SAMG) elements in the inspection or performance assessment processes for the new oversight process (3) (7) (16).

Some respondents stated that manual scrams should not be included with automatic scrams in the unplanned scram PI (4) (18).

Several respondents stated that the green/white thresholds for the SSPI unavailability PIs are in some cases more restrictive than the industry's year 2000 goals. These goals were carefully chosen to balance planned unavailability with the conduct of preventive maintenance to maintain high levels of safety system reliability (4) (7).

Table 1.1 List of Public Comment Respondents

1. Union of Concerned Scientists (UCS)
2. Southern Company
3. Westinghouse Owners Group
4. Institute of Nuclear Power Operations (INPO)
5. Charles R. Jones
6. Consumers Energy
7. Nuclear Energy Institute (NEI)
8. Southern California Edison
9. Pennsylvania Emergency Management Agency
10. (Repeat Submittal of (9))
11. Virginia Power
12. Alliant Energy
13. State of Illinois Department of Nuclear Safety
14. South Texas Project Nuclear Operating Company
15. Public Citizen's Critical Mass Energy Project
16. PECO Energy Company
17. Commonwealth Edison Company
18. South Carolina Electric & Gas Company
19. Union Electric Company
20. Arizona Public Service Company
21. Entergy Operations, Inc.

The following submittals were received after the due date and the specific comments could not be included in the detailed evaluation presented in this attachment. These comments have been forwarded to the staff and will be reviewed and evaluated during the development of the process details and implementing guidance.

22. Florida Power Corporation
23. North Atlantic Energy Service Corporation
24. Region IV Utility Group
25. Tennessee Valley Authority
26. Pacific Gas and Electric Company
27. Northern States Power Company
28. TU Electric
29. (Repeat Submittal of (15))
30. Wolf Creek Nuclear Operating Corporation

INSPECTION FINDING RISK CHARACTERIZATION PROCESS

Attachment 2

INSPECTION FINDING
RISK CHARACTERIZATION PROCESS

Developed by:

Task Leader Morris Branch

Task Members Douglas Coe
Jin Chung
Thomas Dexter
John Flack
Stephen Klementowicz
Steve Mays
Eugene McPeek
Scott Morris
Gareth Parry
Roger Pederson
William Ruland
Randolph Sullivan
Barry Westreich
James Wigginton
Peter Wilson

Attachment 2

Introduction

SECY-99-007, dated January 8, 1999, described the need for a method of assigning a risk characterization to inspection findings. This risk characterization is necessary so that inspection findings can be aligned with risk-informed plant performance indicators (PIs) during the plant performance assessment process. Figure 1 describes the process flow of typical inspection findings or issues. Figure 1 also outlines the different paths an issue could take with the final output of each process being an input to the assessment and/or the enforcement process. Appendix 1 of this attachment describes in detail the staff's efforts to date for the risk characterization of inspection findings, which have a potential impact on at-power operations, thereby affecting the initiating event, mitigating systems, or barrier cornerstones associated with the reactor safety strategic performance area. It is expected that this process will address most of the risk-significant issues that would be experienced at a facility. However, issues associated with shutdown risk, emergency preparedness, radiation safety, and safeguards need a risk characterization process as well. The staff is currently developing processes with the nuclear industry and the public to characterize the risk significance of inspection findings in these areas.

The concepts being explored for the emergency preparedness, radiation safety, and safeguards areas involve the development of a process flow and decision logic that will complement or supplement PI data. The products developed by this ongoing effort will receive a tabletop exercise similar to that accomplished during the feasibility review of the reactor oversight process described in Attachment 3 of this paper. That feasibility review highlighted the need for a risk characterization process for all plant items included in a plant's plant issue matrix (PIM). Recommendations from the feasibility review included the need to have these processes essentially complete before their use during the plant pilot study described in Attachment 6.

Although the staff fully expects to have most of the risk characterization processes in place for the pilot study, further enhancement and development will continue. However, if for example, difficulty is encountered in developing a method for the risk characterization of shutdown activities, the inspection staff may have to involve a risk analyst or a risk panel in order to properly characterize the finding until the guidance can be developed. The Office of Research (RES) plans to continue its support of the oversight process by providing risk expertise, methods, data, and insights into various areas. Specific activities being developed for the pilot program include:

- generation and consolidation of plant-specific risk insights to help focus plant inspections on risk significant areas,

- generation of plant-specific insights to support the inspection finding risk characterization and reactor assessment process,

In addition, there are longer term RES activities associated with the oversight process. These include:

- development of risk-informed performance indicators to enhance the merit of current indicators, including additional indicators that cover shutdown operations, cross systems performance (such as component performance, common cause failures, and human performance) and potential integrated indicators of performance that cover multiple areas within or across cornerstones.

These activities will improve NRC's ability to apply risk to plant inspections and enhance the ability to evaluate plants through the plant assessment process. In addition, RES will continue to investigate the impact of modeling techniques, assumptions, and data on probabilistic risk assessment (PRA) results and conclusions, and the impact they have on the regulatory decision-making process.

Figure 1 (Significance Determination Process (SDP)) and Appendix 1 (Process for Characterizing the Risk Significancy of Inspection Findings) for at-power situations are included herein to describe the staff's efforts in this area. Additionally, for completeness, Appendix 2 presents the current DRAFT concepts for characterizing the risk significance of inspection findings in the emergency preparedness, radiation safety, and safeguards areas.

SIGNIFICANCE DETERMINATION PROCESS

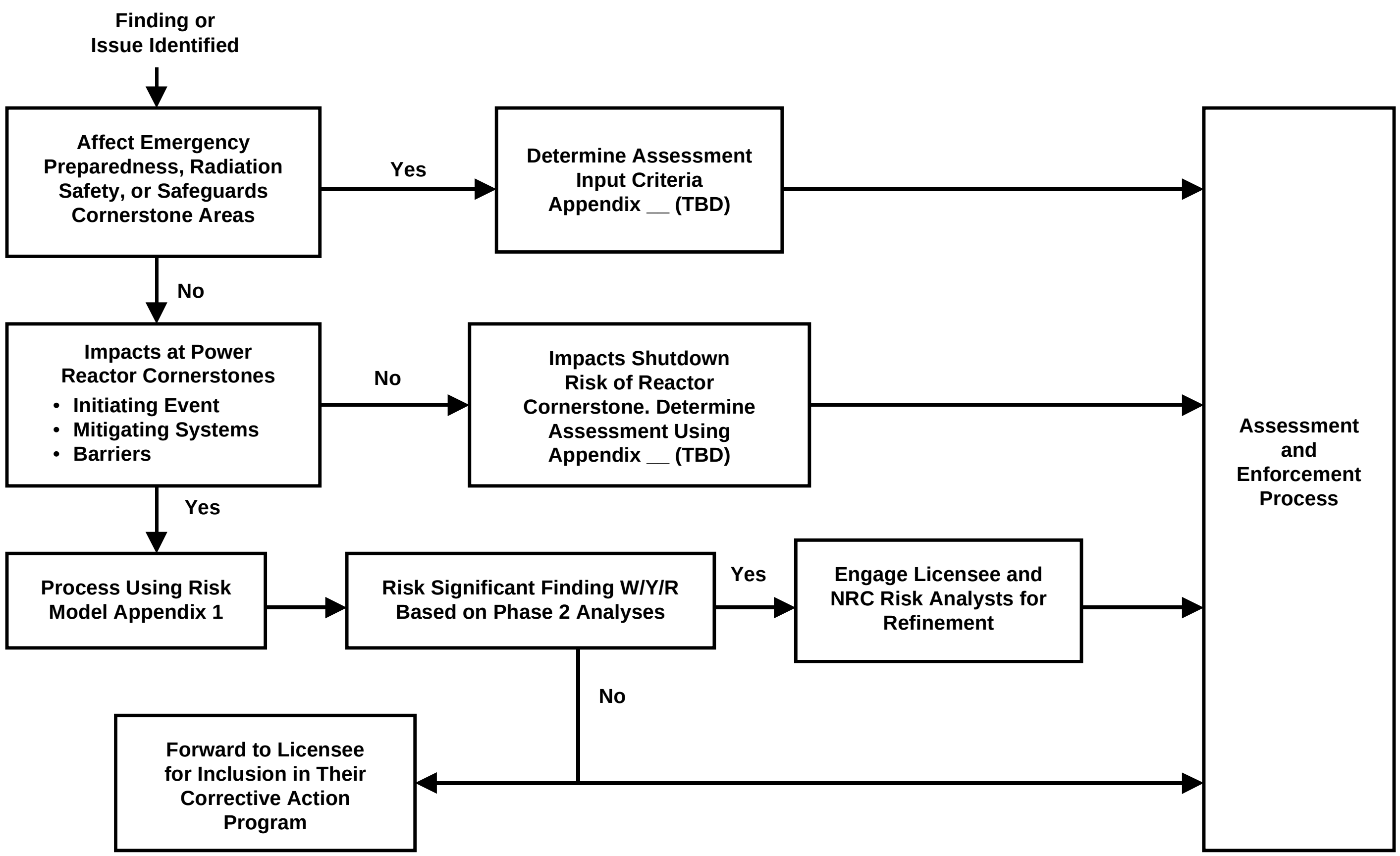


Figure 1

Appendix 1

Process for Characterizing the Risk Significance of Inspection Findings

Entry Conditions

This process is currently designed to assess only those inspection findings associated with at-power operations within the cornerstones of initiating events, mitigation systems, and barrier integrity under the reactor safety strategic performance area. Compliance with Technical Specifications (TS) and design-bases assumptions continue to provide defense-in-depth and safety margins. An actual initiating event will either be captured by a performance indicator (e.g., a reactor trip) or, if it is complicated by equipment malfunction or operator error, will be assessed by NRC risk analysts outside of the process described herein.

Objectives

1. To characterize the risk significance of an inspection finding consistent with the regulatory response thresholds used for performance indicators (PIs) in the NRC licensee performance assessment process and for entry into the enforcement process.

2. To provide a risk-informed framework for discussing and communicating the potential significance of inspection findings.

Defining Characteristic

The most important characteristic of this process is that it elevates potentially risk-significant issues early in the process and screens out those findings that have minimal or no risk significance. Further, field inspectors and their managers should be able to efficiently use the basic accident scenario concepts in this process to categorize individual inspection findings by potential risk significance. The process presumes the user has a basic understanding of risk analysis methods.

Introduction

The proposed overall licensee assessment process (as defined in SECY-99-007) evaluates licensee performance using a combination of PI and inspections. Thresholds have been established for the PIs, which, if exceeded, may prompt additional actions to focus licensee and NRC attention on areas in which there is a potential decline in licensee performance. The inspection finding risk characterization process described in this appendix and illustrated in Figure 1 evaluates the significance of individual inspection findings so that the overall licensee performance assessment process can compare and evaluate them on a significance scale similar to the PI information. Licensee-identified issues, when reviewed by NRC inspectors, are also candidates for this process.

SIGNIFICANCE DETERMINATION PROCESS
INITATING EVENT, MITIGATING SYSTEMS & BARRIER
CORNERSTONES AT_POWER

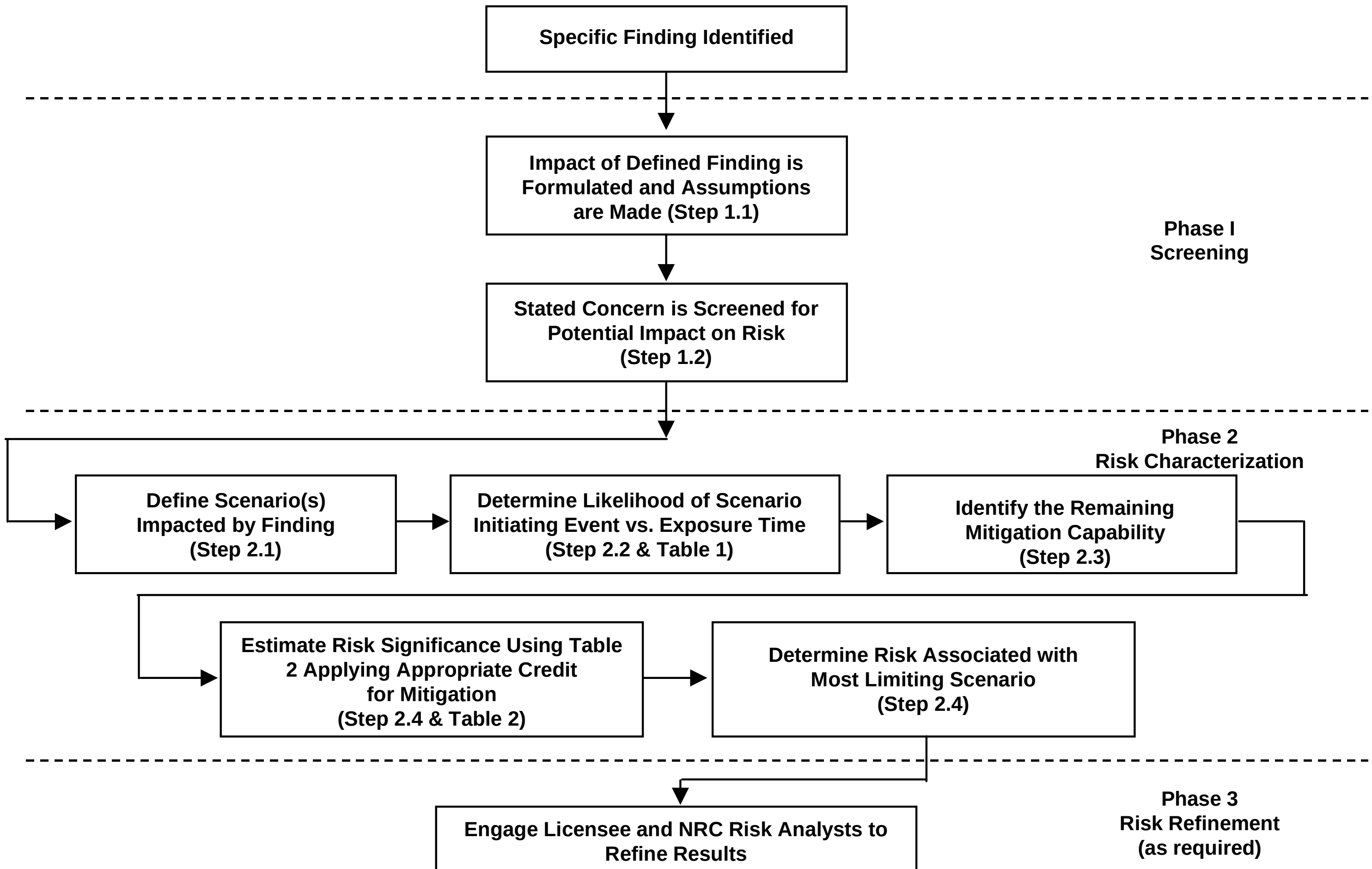


Figure 1

Inspection findings related to reactor safety cornerstones (initiating events, mitigating systems, and barrier integrity) will be assessed differently than the remaining areas (emergency planning, occupational exposure, public exposure, and physical security). For the reactor safety cornerstones, excluding the EP area, each finding is evaluated using a risk-informed framework that relates the finding to specific structures, systems, or components (SSCs), identifies the core damage scenarios to which the failure of the SSCs contribute, estimates how likely the initiating event for such scenarios might be, and finally determines what capability would remain to prevent core damage if the initiating events for the identified scenarios actually occurred.

Bases

The approach described in this Appendix was developed using input derived from other agency documents, including the following:

- Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment (PRA) in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis;"
- Table 1 was based on generic values obtained from NUREG/CR-5499, "Rates of Initiating Events at U.S. Nuclear Power Plants: 1987 - 1995;"
- The accident sequence precursor (ASP) screening rules as outlined in NUREG/CR-4674, "Precursors to Potential Severe Core Damage Accidents."

In addition, Table 2 is based on generic numbers that are generally consistent with values obtained from PRA models.

Sensitivity Test of Inspection Finding Risk Characterization Screening Process

The staff performed a simple test of the sensitivity of the screening process. The test was designed to ensure that items with proven risk importance would not be screened out by the process. The staff reviewed the 1996 accident sequence precursors (ASP) to potential severe core damage events. In 1996, the NRC identified in NUREG/CR-4674, Vol. 25, 14 precursors with a conditional core damage probability (CCDP) greater than 1E-6 affecting 13 units. There were seven precursor events involving initiating events at power, six precursor events involving unavailabilities at power, and one precursor event involving an initiating event while the plant was shutdown. With the exception of the shutdown event, which the IFRCP does not currently model, all of the risk significant ASP events successfully passed the screening test and would have required further evaluation using Phase 2 of the model. Because of the simplicity of the model, the process has the potential to overestimate the risk significance of some events, possibly requiring a more refined evaluation before a final assessment can be made.

Process Discussion

The inspection finding assessment process is a graduated approach that uses a three-phase process to differentiate inspection findings on the basis of their actual or potential risk significance. Findings that pass through a screening phase will proceed to be evaluated by the next phase.

Phase 1 - **Definition and Initial Screening of Findings:** Precise characterization of the finding and an initial screening-out of low-significance findings

Phase 2 - **Risk Significance Approximation and Basis:** Initial approximation of the risk significance of the finding and development of the basis for this determination for those findings that pass through the Phase 1 screening

Phase 3 - **Risk Significance Finalization and Justification:** As-needed refinement of the risk significance of Phase 2 findings by an NRC risk analyst

Phases 1 and 2 are intended to be accomplished primarily by field inspectors and their first-line managers. Until a user becomes practiced in its use, it is expected that an NRC risk analyst may be needed to assist with some of the assumptions used for the Phase 2 assessment. However, after inspection personnel become more familiar with the process, involvement of a risk analyst is expected to become more limited. The Phase 3 review is not mandatory and is only intended to confirm or modify the results of significant ("white" or above) or controversial findings from the Phase 2 assessment. Phase 3 analysis methods will utilize current PRA techniques and rely on the expertise of knowledgeable risk analysts.

Step 1 - Definition and Initial Screening of Findings

Step 1.1 - Definition of the Inspection Finding and Assumed Impact

It is crucial that inspection findings be well defined in order to consistently execute the logic required by this process. The process can be entered with inspection findings that involve multiple degraded conditions that concurrently affect safety. The definition of the finding should be based on the known existing facts and should NOT include hypothetical failures such as the one single failure assumed for licensing basis design requirements. The statement of the finding should clearly identify the equipment potentially or actually impacted, as this will be used in the risk characterization process. In some cases, the impact of the finding can be stated unambiguously in terms of the status of a piece of equipment, for example, whether it is operable or not, or whether it is available to perform its function or not. In other cases, the finding may specify conditions under which a piece of equipment becomes unavailable. In still other cases, those involving degraded conditions for example, the impact is not determined, and assumptions will have to be made for the purposes of assessing the risk significance. Any explicitly stated assumptions regarding the effect of the finding on the safety functions should initially be conservative (i.e., force a potentially higher risk significance) because the final result will always be viewed from the context of those assumptions. Subsequent information or analysis from the licensee or other sources is expected, in many cases, to reduce the significance of the finding, with an appropriate explicit and defensible rationale. Findings must also be well defined because the assumptions can be modified to examine their influence on the results. However, the general rule is that the definition of the finding must address its safety function impact and any assumptions regarding other plant conditions. Examples include the following:

1. The following situations represent two different findings: a motor-operated valve (MOV) in a pressurized-water reactor (PWR) auxiliary feedwater (AFW) system is found with hardened gearbox grease (i.e., is degraded); and an MOV in the AFW system is found with a broken wire that renders it non-functional. For the purposes of assessing the risk significance, the impact of both could be characterized conservatively as "MOV does not

perform its safety function of opening to provide flow to the steam generators." In the first case, it is necessary to assume that the hardened grease makes the valve unavailable, while in the second it is not.

2. A finding involving a deficiency in the design of the plant could be stated as follows: "Equipment/System/Component X would not perform its safety function of .... under conditions. ..." For example, a remote shutdown panel that might be rendered inhabitable during a cable spreading room fire that causes a loss of offsite power due to inadequate heating, ventilation, and air conditioning (HVAC) dispersion of the resulting smoke, would be characterized conservatively as "plant cooldown not possible from control room or remote shutdown panel during a loss of offsite power (LOOP) caused by cable spreading room fire due to inhabitability from resulting smoke and loss of power to remote shutdown panel HVAC."

Step 1.2 - Initial Screening of the Inspection Finding

For the sake of efficiency, the initial screening is intended to screen out those findings that have minimal or no impact on risk early in this process. The screening guidelines are linked to the cornerstones as follows: If there is negligible impact on meeting the reactor safety cornerstone objectives, the finding can be identified as having minimal or no impact on risk and should be corrected under the licensee's corrective action process.

The decision logic is described as follows:

If the finding and its associated assumptions, as defined in Step 1.1, could simultaneously adversely affect two or more reactor safety cornerstones, then Phase 1 is complete and the user should proceed directly to the Phase 2 analysis. Alternatively, the finding can be screened out immediately (characterized as having little or no risk potential impact and exit this process) if it can be shown to NOT be related to any adverse effect on any reactor safety cornerstone. Finally, if the finding and its associated assumptions affect only ONE reactor safety cornerstone, it may still be screened out as follows:

> If only the mitigation systems cornerstone is affected and the finding and the associated assumptions do NOT represent a loss of safety function of a system, OR the finding and associated assumptions represent a loss of safety function of a single train of a multi-train system for LESS THAN the allowed outage time (AOT) prescribed by the limiting condition for operation (LCO) for Technical Specification equipment, OR represents a design or qualification finding but the equipment or the system is still operable (e.g., meets NRC Generic Letter 91-18 criteria to remain operable), OR is not categorized as a risk-significant SSC under the maintenance rule (10 CFR 50.65) then the finding would be considered green and screened out.
>
> If only the initiating event cornerstone is affected and the finding and associated assumptions have no other impact than increasing the likelihood of an uncomplicated reactor trip, the finding would be considered green and screened out.
>
> If only the fuel barrier is affected, the issue will be screened out since a PI exists for this barrier.

If any reactor coolant system (RCS) barrier function to mitigate an accident sequence is affected, the issue will be assessed in Phase 2.

If the containment barrier is affected, the concern is referred to a risk analyst until more guidance can be provided.

Any inspection finding that is NOT screened out (i.e., characterized as green) by the above-mentioned decision logic should be assessed using the Phase 2 process described herein.

Phase 2 - Risk Significance Approximation and Basis

Step 2.1 - Define the Applicable Scenarios

Once an inspection finding passes through the Phase 1 screening, it is evaluated in a more detailed manner using the Phase 2 process described herein. The first step in Phase 2 is to ask the question “Under what core damage accident scenarios would the finding, as defined in Step 1.1, increase risk?”

Determining which scenarios make an inspection finding risk important may not always be intuitive. Therefore, documents such as plant-specific PRA studies, safety analysis reports, TS bases, and emergency operating procedures should be reviewed as needed to ensure that the most likely events and circumstances are considered. Specifically, the inspector must determine which core damage scenarios are adversely impacted by each finding.

Identifying the scenarios begins with identifying the equipment and the assumed or actual impact of the finding, and takes into consideration the role the equipment plays in either the continued operation of the plant or the response to an initiating event. This step leads to an identification of the role of the finding in either contributing to an initiating event or affecting a mitigating system, or both. For the mitigating systems, the impact may be one of two kinds: the finding results in the equipment function’s being compromised or the finding relates to the identification of a condition under which the function would become compromised. In the first of these two cases, the function can be assumed to be lost, and the scenario of interest is the initiating event for which the equipment is required and the remaining equipment that by design can provide the same function as that which has been lost. For the second case, the scenario definition must also include the condition under which the function would become compromised. For example, if the finding is that if two operator actions are reversed while performing the switchover to recirculation in a PWR, the safety injection (SI) pumps could be irreparably damaged due to cavitation, the scenario definition includes the loss of coolant accident (LOCA) initiating event, the failure of the charging system (if it is a viable alternative means of providing sump recirculation), and also the human error (which represents the condition under which the pumps would fail). If the finding were that the SI pumps could never be aligned properly for some reason (this extreme case is an example to demonstrate a point only), the scenario definition would involve only the LOCA and the charging system failures.

During this phase of the process, inspectors may determine that several different scenarios are affected by a particular inspection finding. This determination can occur in one of two ways:

First, the finding may be related to an increase in the likelihood of an initiating event, which may require consideration of several scenarios resulting from this initiating event.

Second, a finding may be related to a system required to respond to several initiating events. For example, the discovery of a degraded instrument air system could affect plant response to both a loss of offsite power and a LOCA. Each of these two initiating events must be considered separately so that the next step of the Phase 2 evaluation process can determine which scenario is potentially most significant.

The scenario resulting in the highest significance will be used to establish the initial relative risk-significance of the finding. If a Phase 2 assessment of multiple applicable scenarios results in all "green" significance, the user should seek assistance of a risk analyst, since the Phase 2 process cannot effectively "sum" the significance of multiple low-significance scenarios. Additionally, a particular inspection finding may affect multiple cornerstones by both increasing the probability of an initiating event and degrading the capability or reliability of a mitigating system. Again, each applicable scenario must be considered to determine which is the most significant.

In identifying possible core damage accident scenarios, consideration must also be given to the role of support systems as well as the primary system. For example, if a particular initiating event can be mitigated by more than one system providing the same safety function, but all such systems are dependent on a single train of a support system (e.g., service water or emergency ac power), the limiting scenario may involve the failure of the single train of the support system rather than the individual primary system trains.

Step 2.2 - Estimation of the Likelihood of Scenario Initiating Events and Conditions

In Step 2.1, sets of core damage accident scenarios were determined that could be made more likely by the identified inspection finding (degraded condition). This step should result in the identification of one or more initiating events, each followed by various sequences of equipment failures or operator errors. To determine the most limiting scenario, perform the following analysis for <u>each</u> set of scenarios with a common initiating event.

If the finding does not relate to an increased likelihood of an initiating event, the initiating events for which the affected SSC(s) are required are allocated to a frequency range in accordance with guidance provided in the left-hand column of Table 1 herein. Table 1 is entered from the left column, using the initiating event frequency, and from the bottom, using the estimated time that the degraded condition existed, to arrive at a likelihood rating (A - H) for the combination of the initiating event and the duration of the degraded condition.

If the finding relates to an increased likelihood of a specific initiating event, the likelihood of that initiating event is increased according to the significance of the degradation. For example, if the inspection finding is that loose parts are found inside a steam generator, then the frequency of a steam generator tube rupture (SGTR) for that plant may increase to the next higher frequency category, and Table 1 is entered accordingly.

When the scenario includes the identification of a condition under which a function, a system, or a train becomes unavailable, then this fact has to be factored into the assessment. It is not appropriate to assume that the affected function, system, or train is unavailable. At this point, it is necessary that a risk analyst assess the probability of the condition, and adjust the likelihood of the initiating event (or events) by the appropriate amount. For example:

- A finding that if a control valve in the instrument air system fails it could lead to overpressure of a low-pressure part of the system, thereby leading to the failure of the equipment controlled by the air system. The probability of interest is that of the failure of the valve during the mission time, which depends on the impact of the failure. For example, if the valve failure would lead to a reactor trip in addition to failing some mitigating equipment, the mission time is 1 year, and the initiating event frequency would be the probability of failure of the valve in one year. If the impact is simply on the mitigating systems for a LOCA, the mission time is that time required to place the plant in a safe, stable state. In this case, the LOCA frequency would be adjusted by the probability that the valve failure would occur during the mission time.

Finally, remember that the definition of the finding and the selection of core damage accident scenarios should be strictly based on the known existing facts and should NOT include hypothetical failures, such as the one single failure assumed for licensing basis design requirements.

Table 1 - Estimated Likelihood Rating for Initiating Event Occurrence During Degraded Period (taken from NUREG/CR-5499)

Approx. Freq.	Example Event Type	Estimated Likelihood Rating		
>1 per 1 - 10 yr	Reactor Trip Loss of condenser	**A**	**B**	**C**
1 per 10 - 10^2 yr	Loss of Offsite Power Total loss of main FW Stuck open SRV (BWR) MSLB (outside cntmt) Loss of 1 SR AC bus Loss of Instr/Cntrl Air Fire causing reactor trip	**B**	**C**	**D**
1 per 10^2 - 10^3 yr	SGTR Stuck open PORV/SV RCP seal LOCA (PWR) MFLB MSLB inside PWR cntmt Loss of 1 SR DC bus Flood causing reactor trip	**C**	**D**	**E**
1 per 10^3 - 10^4 yr	Small LOCA Loss of all service water	**D**	**E**	**F**
1 per 10^4 - 10^5 yr	Med LOCA Large LOCA (BWR)	**E**	**F**	**G**
<1 per 10^5 yr	Large LOCA (PWR) ISLOCA Vessel Rupture	**F**	**G**	**H**
		> 30 days	30-3days	<3 days
		Exposure Time for Degraded Condition		

Use of Table 1 should result in one or more initiating events of interest with an associated likelihood rating (“A” through “H”) for each.

Step 2.3 - Estimation of remaining mitigation capability

The scenarios of interest have now been identified, and Table 1 has been used to estimate associated initiating event frequencies and to combine them with degraded condition exposure time to arrive at an estimate of the likelihood of the initiating events. Following an initiating event, core damage will result from a series of system, component, or operator failures. In this step, the user will approximate the probability of failing to mitigate the core damage scenarios associated with the condition identified by the finding. Findings defined in Phase 1 will generally identify the potential for degrading a particular function. Therefore, the probability of preventing the scenarios that include this degraded function will depend on the number of remaining success paths for providing the function.

To count success paths in a probabilistically consistent manner, systems are considered to be either single train or redundant. A redundant system is a system that has more than one identical train, where the loss of one train does not lead to a loss of function. However, all trains of a redundant system are subject to a possible common-cause failure. Success paths may be provided by each train of diverse single-train systems (e.g., high-pressure injection in a boiling water reactor (BWR) for a loss of feedwater transient may be provided by the high-pressure coolant injection (HPCI) and reactor core isolation coolant (RCIC) systems, both single train systems), or by diverse redundant systems (e.g., low-pressure injection may be provided by the low-pressure core spray (LPCS) and the LPCI systems in a BWR-4, both multi train systems), or by mixtures of single-train and redundant systems. In addition, in some cases there may be time to recover the function or train that has been lost, which can be credited as a success path under certain conditions.

In counting the number of remaining available success paths for a scenario affected by the degradation assumed by the finding, the user must select the most appropriate column of Table 2, “Risk Significance Estimation Matrix,” for each affected scenario. Each column in Table 2 represents about one order of magnitude difference from adjacent columns in the failure probability of remaining success paths, and the descriptions in the column headings are intended as examples of mitigation methods that can typically be assumed. Refer to Figure 2 for basic guidance on how to determine the number of trains and redundant systems. In addition, the following rules and guidelines apply:

- Only equipment that the licensee has scoped into the maintenance rule (10 CFR 50.65) may be credited for remaining mitigation capability. This provides a minimum level of assurance that credited equipment meets pre-established reliability goals or performance criteria.

- The potential for common-cause failure of the remaining success paths is accounted for in the column definitions of Table 2. Therefore, any actual evidence of a common-cause failure must be included in the definition of the inspection finding.

- Credit for recovery may be taken if there is a possibility of restoration of the SSC or a function that has been assumed to be lost due to the condition identified by the finding. Recovery actions should be credited only if there is sufficient time available, environmental conditions allow access, they are covered by operator training and written procedures, and necessary equipment is available or appropriately staged and ready. For recovery actions that are relatively complex, and/or require actions outside the control room, it is particularly important that the actions required are feasible within the time available to prevent core damage. If there are no remaining success paths other than restoring the failed equipment, and the above conditions are met, then Column 6 of Table 2 will credit this recovery. For example, consider an inspection finding involving a potentially recoverable system failure, such as a failed automatic start feature. If status indication exists and simple operator action would be able to start the equipment within sufficient time to provide the system function, then more credit can be given to recovery, which may be more appropriately given by using Column 5. If other equipment is also available as remaining success paths, then operator actions may be used to supplement that equipment.

- Caution has to be exercised when taking credit for systems that are dependent on manual actuation (such as standby liquid control (SLC) in BWRs). If the time to initiate the system is short and performed under stressful conditions, Column 5 should be used for a redundant system rather than Column 4. When there is ample time, as in the initiation of suppression pool cooling in BWRs, the human error probability is low enough that the nominal system column can be used.

When all scenarios have been assigned and the associated likelihood and remaining mitigation capability estimated, the Table 2 matrix described in the next section can be used to estimate the potential significance of the degraded condition, within the context of all assumptions made to this point.

Step 2.4 - Estimating the Risk Significance of Inspection Findings

The last step of the Phase 2 assessment process is to estimate the relative risk significance of the finding. The risk is estimated by employing an evaluation matrix (Table 2 herein), which utilizes the information gained from Steps 2.1 through 2.3. This matrix combines the scenario likelihood derived in Step 2.2 with the remaining mitigation capability determined in Step 2.3 and establishes an estimated risk significance for the particular finding. One of only four possible results can be obtained: Green, White, Yellow, or Red. These results are comparable to those used for PIs. The user must complete this assessment process for each scenario affected by the inspection finding before determining the scenario of highest significance.

As a mental “benchmark,” the user of this process should recognize that a “Green” outcome will involve any condition that has three or more diverse trains of remaining mitigation capability no matter how frequently it occurs, and that a “Red” outcome will involve any condition that has zero or only one train of remaining mitigation capability if the initiating events that require such capability occur more often than once every 1000 reactor-years (e.g., a small LOCA, a LOOP, or a reactor trip).

Initiating Event Likelihood (From Step 2.2)	Remaining Mitigation Capability (From Step 2.3)						
	≥3 diverse trains OR 2 systems each with redundancy (1)	1 train + 1 system with redundancy OR 2 diverse trains + recovery of failed train (2)	2 diverse trains OR 1 system with redundancy + recovery of failed train (3)	1 train + recovery of failed train OR 1 system with redundancy (automatic initiation or no time constraints) (4)	1 train OR 1 system with redundancy (manual actuation under time constraints) (5)	Recovery of failed train (6)	none (7)
A	Green	White	Yellow	Red	Red	Red	Red
B	Green	Green	White	Yellow	Red	Red	Red
C	Green	Green	Green	White	Yellow	Red	Red
D	Green	Green	Green	Green	White	Yellow	Red
E	Green	Green	Green	Green	Green	White	Yellow
F	Green	Green	Green	Green	Green	Green	White
G	Green	Green	Green	Green	Green	Green	Green
H	Green	Green	Green	Green	Green	Green	Green

Table 2 - Risk Significance Estimation Matrix

Step 2.5 - Documenting the Results

The results of the Phase 2 risk estimation will be communicated to the licensee through the inspection report process. It is expected that risk-significant or controversial findings will require obtaining licensee risk perspectives and will most likely prompt a Phase 3 review. If the inspectors, and appropriate regional and Headquarters staff (when necessary), agree with the results of the Phase 2 assessment, the final results will be documented in an inspection report and no further review is needed. The extent of documentation should include all information needed to reconstruct the Phase 2 analysis. Although licensee perspectives will be considered, the NRC staff will retain the final responsibility for determining the risk significance of a finding and will provide its justification in an inspection report or other appropriate document. When licensee assumptions or perspectives differ from those of the staff, the staff should explicitly justify the basis for its determination.

Phase 3 - Risk Significance Finalization and Justification

If determined necessary, this phase is intended to refine or modify the earlier screening results from Phases 1 and 2. Phase 3 analysis will utilize current PRA techniques and rely on the expertise of knowledgeable risk analysts. The Phase 3 assessment is not described herein.

<u>Work Remaining</u>

Work with RES to develop design-specific models and better criteria for evaluating findings associated with the containment barrier, fire protection, and shutdown operations.

PROCESS FOR APPLYING MITIGATION IN TABLE 2

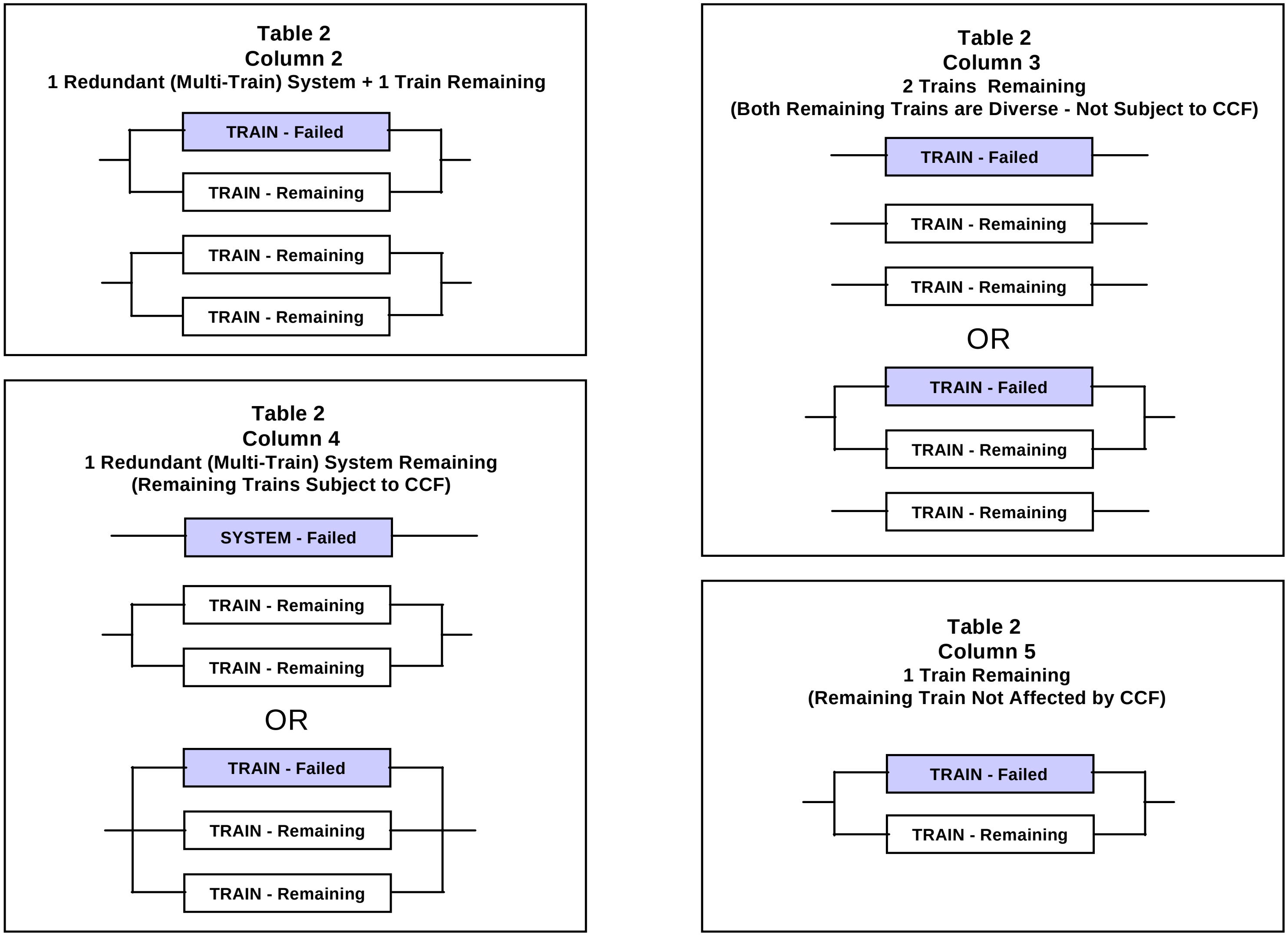


Figure 2

Appendix 2

Concepts for Characterizing the Risk Significance of Inspection Findings in the Emergency Preparedness, Radiation Safety, and Safeguards Area

DRAFT CONCEPTS

This appendix and its attachments convey to the Commission, current staff's concepts for evaluating inspection findings in the emergency preparedness, radiation safety, and safeguards areas. Thresholds were selected on a significance scale similar to those established for the plant performance indicators that industry plans to submit. The staff continues development of this guidance with industry and fully expects to have a process in place for the pilot currently scheduled for June, 1999. As part of this effort, table-top reviews of real and postulated examples are planned to further refine the concepts.

Attachment 1

Emergency Preparedness

DRAFT

An assessment methodology was developed to address findings resulting from inspections performed under the Emergency Preparedness (EP) cornerstone. The process has been reviewed within NRC and additional review from other stakeholders is being sought. It consists of flow chart logic to disposition inspection findings into one of the following categories: “licensee response band,” “increased regulatory response band,” “required regulatory response band,” or “unacceptable performance band.”

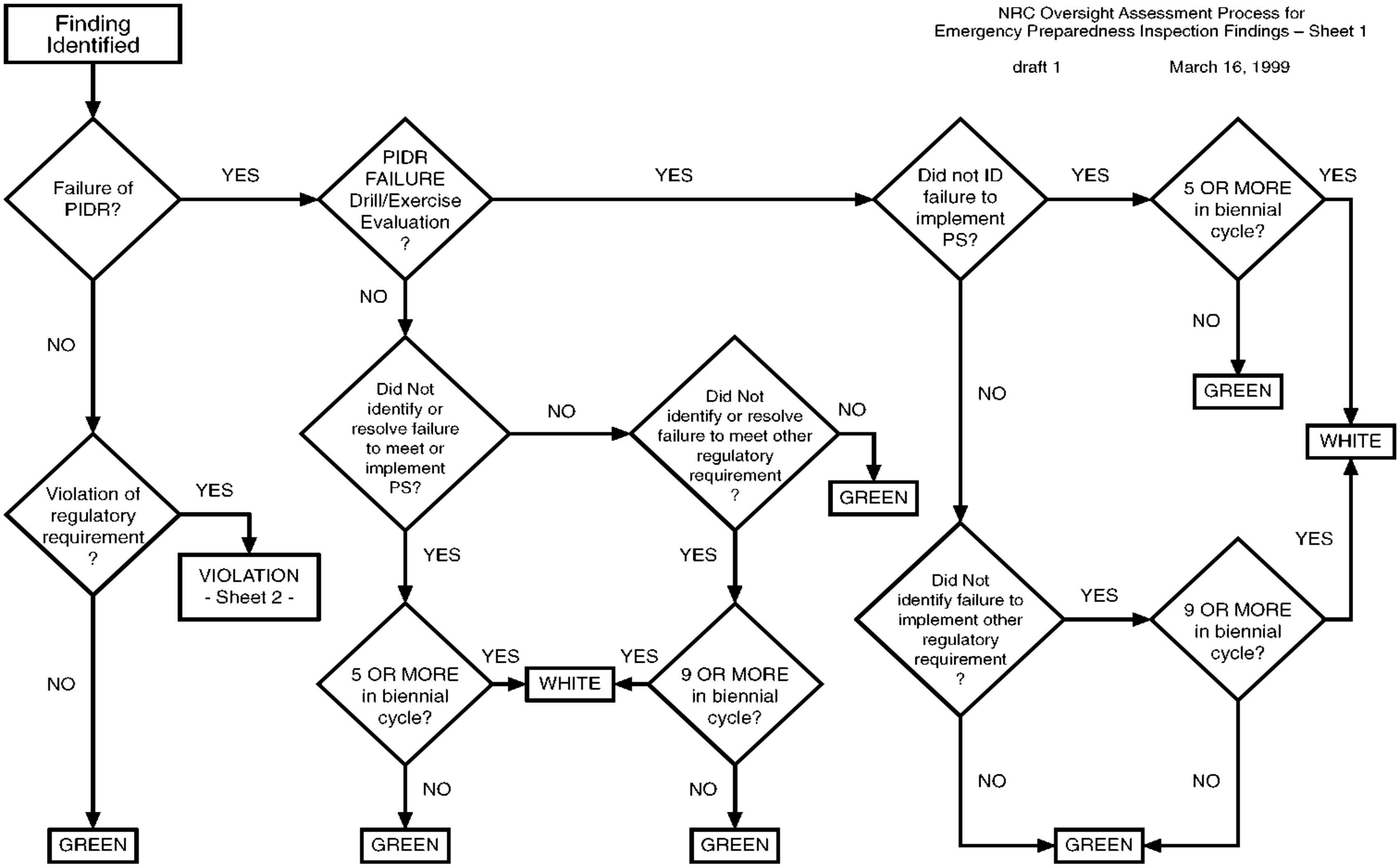
During the development of EP performance indicators risk significant areas were identified as distinct from other program areas. These development efforts were performed by a group of EP subject matter experts with input from members of the public. The assessment methodology also recognizes failures in the identified risk significant areas as more significant than findings in other program areas.

Emergency Preparedness regulations codify a set of emergency planning standards in 10 CFR 50.47(b) and Appendix E to Part 50. The risk significant areas of EP align with a subset of the planning standards and requirements. The flow chart logic uses failure to meet or implement planning standards and other regulatory requirements, and failure to identify problems in compliance as criteria to disposition inspection findings. Failure to meet or implement planning standards identified as risk significant results in a higher level of NRC involvement. While the assessment process does not generally sum unrelated findings to escalate the resultant response band disposition, a program collapse is indicated by failure to meet multiple planning standards. The assessment logic recognizes this unlikely, but significant, deterioration of an EP program and responds with increased regulatory involvement, including the potential for a set of concurrent findings being assessed as “unacceptable performance.”

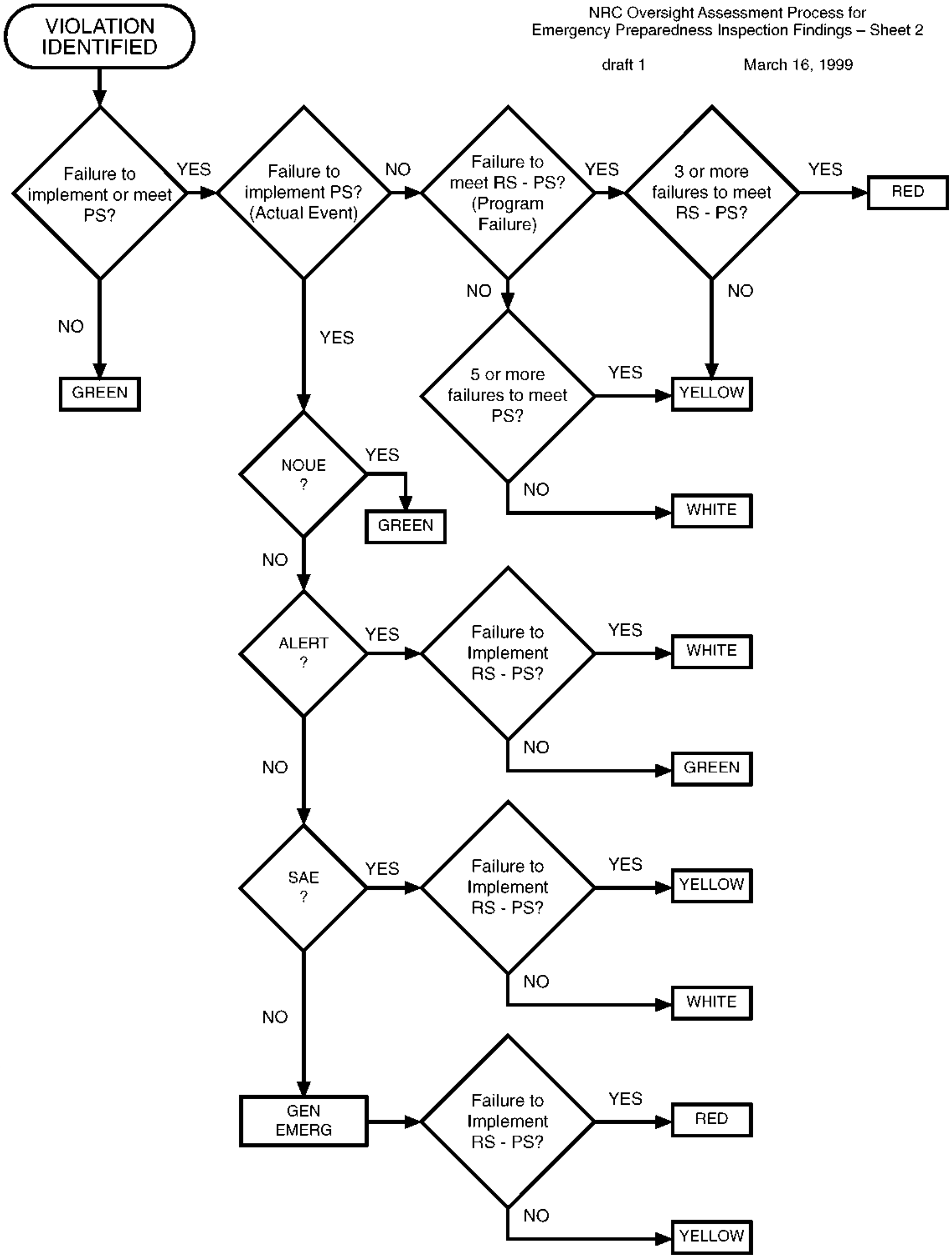
The process flow is described in the diagrams herein.

NRC Oversight Assessment Process for
Emergency Preparedness Inspection Findings – Sheet 1

draft 1 March 16, 1999



RSPS = The Risk Significant Planning Standards: 50, 47(b) 5, 4, 9 & 10 and Appendix E section IV B, C, D(1) & D(3)
PS = The Planning Standards of 50-47(b) and Appendix E
PIDR = Problem Identification and Resolution System


VIOLATION IDENTIFIED
Failure to implement or meet PS?
YES
NO
GREEN
Failure to implement PS? (Actual Event)
NO
YES
Failure to meet RS - PS? (Program Failure)
YES
NO
3 or more failures to meet RS - PS?
YES
RED
NO
YELLOW
5 or more failures to meet PS?
YES
NO
WHITE
NOUE ?
YES
GREEN
NO
ALERT ?
YES
Failure to Implement RS - PS?
YES
WHITE
NO
GREEN
NO
SAE ?
YES
Failure to Implement RS - PS?
YES
YELLOW
NO
WHITE
NO
GEN EMERG
Failure to Implement RS - PS?
YES
RED
NO
YELLOW

Attachment 2

Radiation Safety

<u>DRAFT</u>

An assessment methodology concept was developed to address and access the risk significance of NRC inspection findings in the occupation and public radiation protection cornerstones. This process consists of flow chart logic to disposition inspection findings into one of the following categories: “Licensee response band”, “increased regulatory response band”, “required regulatory response band” or “unacceptable performance band.” A portion of the flow chart logic was developed -- the risk significant area of work in high and very high radiation areas and uncontrolled worker exposures. Complementary inspection findings risk characterization charts have been developed for both the occupational and public dose areas. Public meetings have been held to benefit from stakeholder feedback and will continue as the assessment process further develops.

The disposition of inspection findings in the “ as low as reasonably achievable” (ALARA) area in the occupational worker dose cornerstone is yet to be developed. Preliminary planning by the NRC staff has emphasized the importance of using quantitative criteria to help ensure consistency in risk significance decision making.

INSPECTION FINDINGS RISK CHARACTERIZATION IN RADIATION PROTECTION AREA (OCCUPATIONAL)

GREEN

(Licensee Response Band)

NRC or licensee-identified non-conformance that, if uncorrected, would result in an unplanned occupational TEDE greater than 100 mrem or >2% of 10 CFR Part 20 dose limits.

WHITE

(Increased Regulatory Response Band)

Multiple NRC or licensee-identified non-conformances that, if uncorrected, would result in an unplanned occupational TEDE greater than 2 rem or >40% of 10 CFR Part 20 dose limits (with one or more PI's involving unplanned occupational TEDE greater than 100 mrem or >2% of 10 CFR Part 20 dose limits in past 12 months.

NRC or licensee-identified non-conformance involving an area with dose rates greater than 25 R/h with one or two barrier failures.

YELLOW

(Required Regulatory Response Band)

NRC or licensee-identified non-conformance that, if uncorrected, would result in an actual or substantial potential for an occupational TEDE in excess of 5 rem or greater than 10 CFR Part 20 dose limits.

NRC or licensee-identified non-conformance involving an area with dose rates greater than 25 R/h with three or more barrier failures.

NRC or licensee-identified non-conformance involving an area with dose rates greater than 500 R/h with one or two barrier failures.

RED

(Loss of confidence in HP program's ability to provide assurance of worker safety)

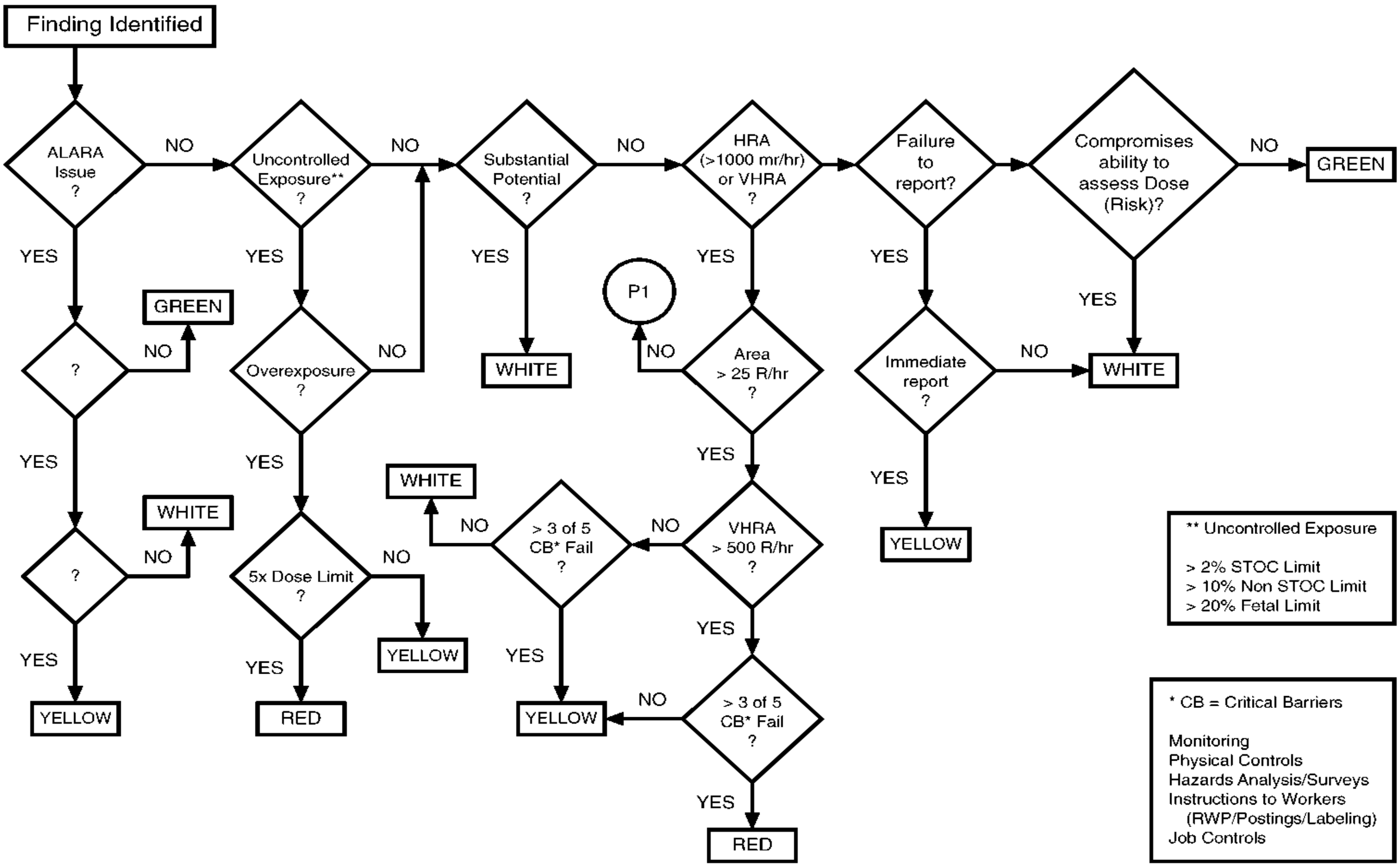
NRC or licensee-identified non-conformance that, if unidentified and uncorrected, would result in an actual or substantial potential for an occupational TEDE in excess of 25 rem or greater than five times 10 CFR Part 20 dose limits.

NRC or licensee-identified non-conformance involving an area with dose rates greater than 500 R/h with three or more barrier failures.

The process flow is described in the diagram herein.

OCCUPATIONAL RADIATION SAFETY Draft

March 16, 1999



** Uncontrolled Exposure

> 2% STOC Limit
> 10% Non STOC Limit
> 20% Fetal Limit

* CB = Critical Barriers

Monitoring
Physical Controls
Hazards Analysis/Surveys
Instructions to Workers
(RWP/Postings/Labeling)
Job Controls

INSPECTION FINDINGS RISK CHARACTERIZATION IN RADIATION PROTECTION AREA (PUBLIC EXPOSURE)

GREEN (Licensee Response Band)

NRC or licensee identified non-conformance that results in exposure to a member of the public from releases of radioactivity and radiation to a TEDE less than or equal to 0.025 rem.

NRC or licensee identified non-conformance of the monitoring or control of radioactive gaseous or liquid effluents that did not compromise the ability to maintain exposure to a member of the public within Technical Specifications (i.e., keep radioactive effluents within design objectives of Appendix I to 10 CFR Part 50).

NRC or licensee identified non-conformance that did not compromise the effectiveness of the radiological environmental monitoring program (i.e., the level of radioactivity in the sample medium was within the reporting levels in the Technical Specifications or the ODCM; or no more than 2 occurrences in which the required environmental sampling was not performed).

NRC or Licensee identified non-conformance in which a land use census was not conducted in accordance with the Technical Specifications or the ODCM.

NRC or Licensee identified non-conformance in which the interlaboratory comparison program was not performed in accordance with the Technical Specifications or the ODCM.

WHITE (Increased Regulatory Response Band)

NRC or licensee identified non-conformance that results in an estimated exposure to a member of the public from releases of radioactivity and radiation to a TEDE greater than 0.025 rem, but less than or equal to 0.1 rem; or 2 or more occurrences that resulted in an estimated exposure to a member of the public from releases of radioactivity and radiation to a TEDE less than or equal to 0.025 rem.

NRC or licensee identified non-conformance of the radiological effluent monitoring program to adequately monitor or control the discharge of radioactive gaseous or liquid effluents which results in an estimated exposure to a member of the public in excess of the Technical Specifications (i.e., doses were greater than the design objectives of Appendix I to 10 CFR Part 50).

NRC or licensee identified non-conformance of the radiological environmental monitoring program where, as a result of plant effluents, there were 2 or more occurrences of environmental sample media exceeding the reporting levels specified in the Technical Specifications or the ODCM or 4 or more occurrences in which the required environmental sampling was not performed.

YELLOW (Required Regulatory Response Band)

NRC or licensee identified non-conformance that results in an estimated exposure to a member of the public from releases of radioactivity and radiation to a TEDE greater than 0.1 rem, but less than or equal to 0.5 rem; or 5 or more occurrences that resulted in an estimated exposure to a member of the public from releases of radioactivity and radiation to a TEDE less than or equal to 0.025 rem.

NRC or licensee identified non-conformance of the radiological effluent monitoring program to adequately monitor or control the discharge of radioactive gaseous or liquid effluents which results in 2 or more occurrences of an estimated exposure to a member of the public in excess of the Technical Specifications (i.e., doses were greater than the design objectives of Appendix I to 10 CFR Part 50).

NRC or licensee identified non-conformance of the radiological environmental monitoring program where, as a result of plant effluents, there were 4 or more occurrences of environmental sampling media exceeding the reporting levels specified in the Technical Specifications or the ODCM.
.

RED (Loss of confidence in the Licensee's ability to provide assurance of radiological safety to a member of the public)

NRC or licensee identified non-conformance that results in an estimated exposure to a member of the public from releases of radioactivity and radiation to a TEDE greater than 0.5 rem.

NRC or licensee identified non-conformance of the radiological effluent monitoring program to adequately monitor or control the discharge of radioactive gaseous or liquid effluents which results in 4 or more occurrences of an estimated exposure to a member of the public in excess of the Technical Specifications (i.e., doses were greater than the design objectives of Appendix I to 10 CFR Part 50).

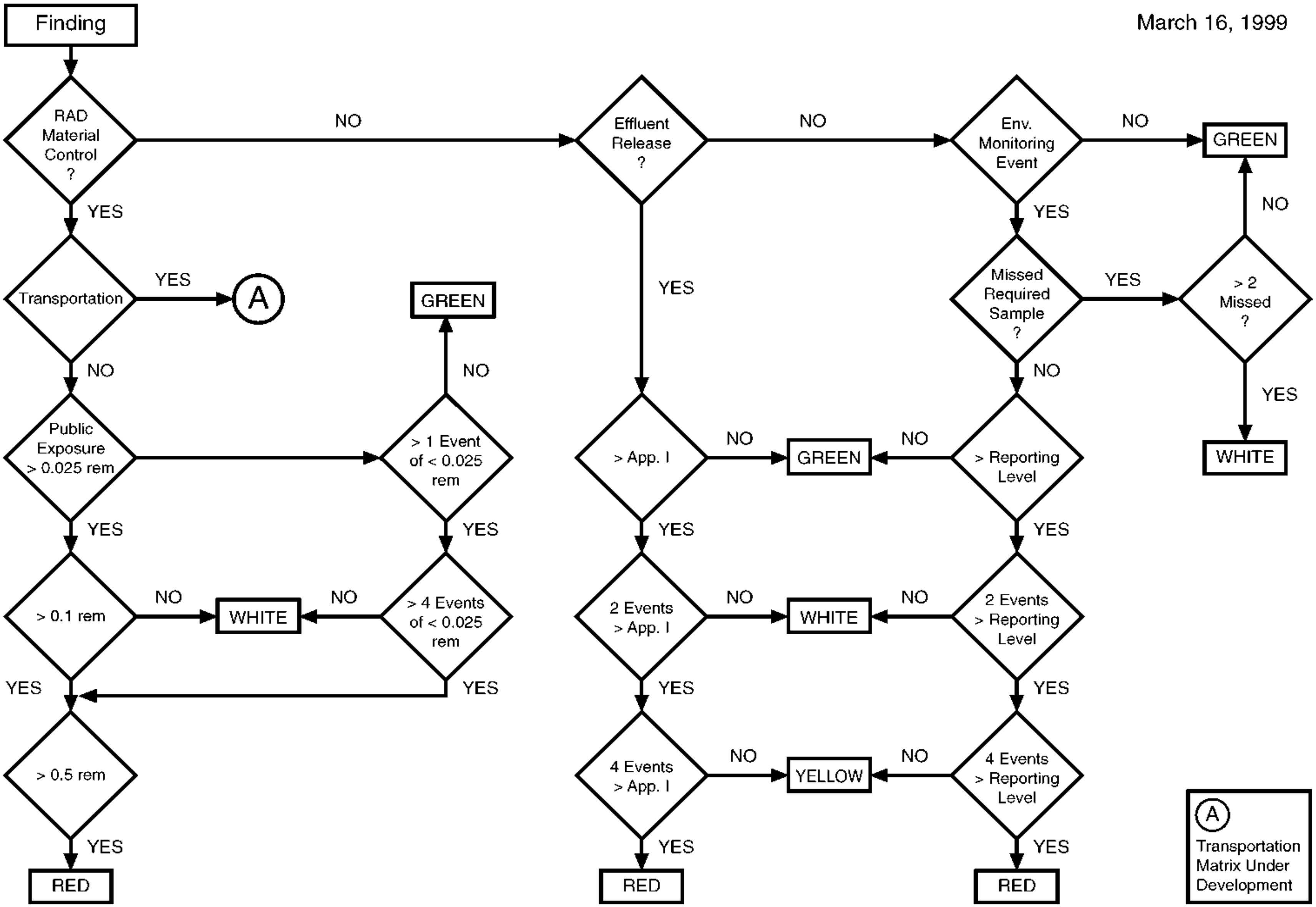
NRC or licensee identified non-conformance of the radiological environmental monitoring program where, as a result of plant effluents, there were 8 or more occurrences of environmental sampling media exceeding the reporting levels specified in the Technical Specifications or the ODCM.

The process flow is described in the diagram herein.

PUBLIC RADIATION SAFETY

Draft

March 16, 1999



Attachment 3

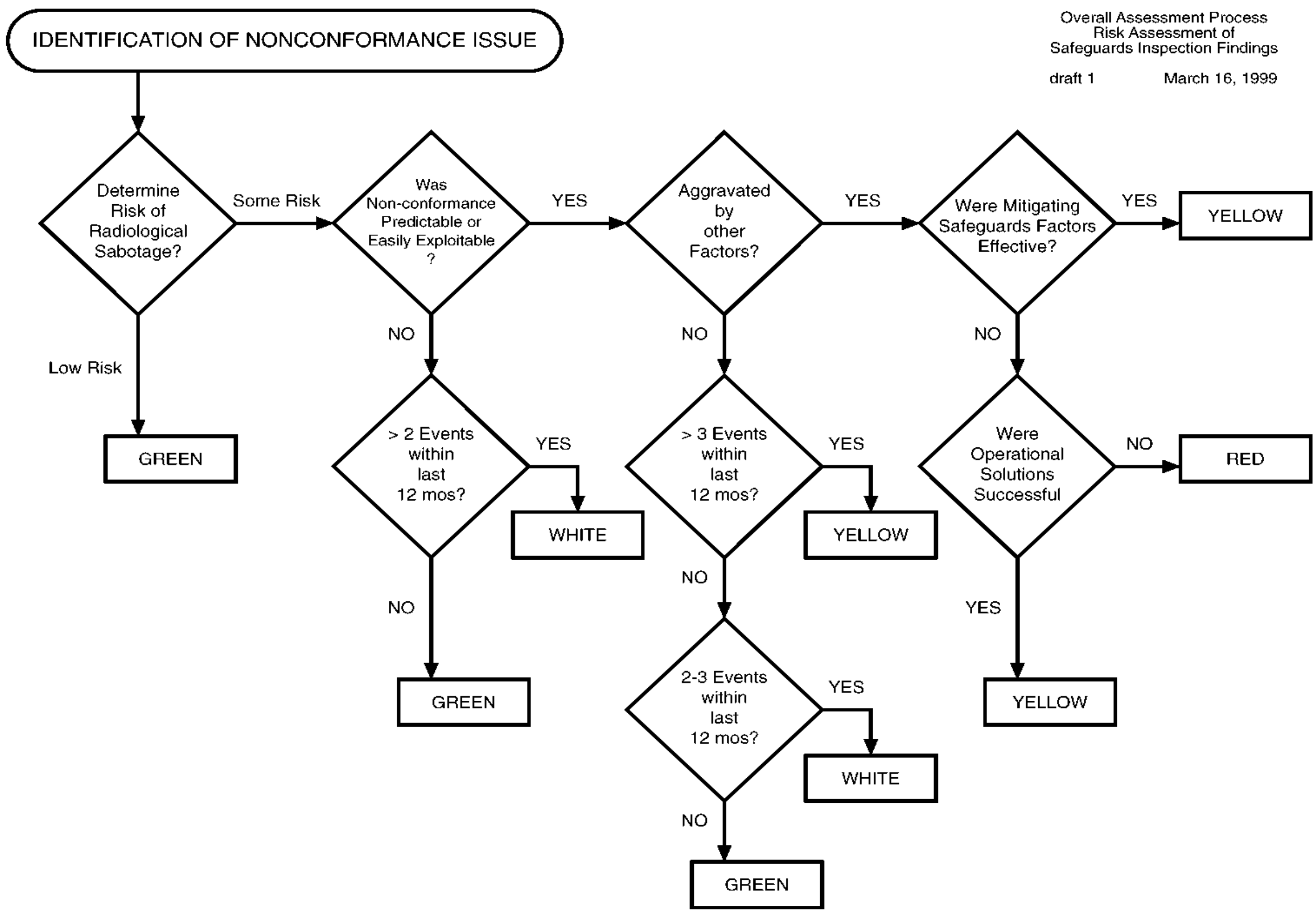
Safeguards

DRAFT

The overall risk assessment of safeguards inspection findings involve the determination of the risk of radiological sabotage. A nonconformance issue is evaluated to establish whether there is low risk or more than low risk to radiological sabotage. If there is a low risk, the issue is within the (licensee's response band) and will be resolved via the licensee's corrective action program. If there is more than low risk, the nonconformance is to be evaluated to determine if it is predictable or easily exploitable. If the nonconformance was not predictable or easily exploitable, then the issue can be dispositioned within the (licensee's response band) unless the number of events within the last 12 months exceeds two, which would result in an (increased regulatory response band).

However, if the nonconformance is either predictable or easily exploitable, the influence of aggravating factors needs to be determined. If there are no aggravating factors, the issue is within the (licensee's response band) unless the number of events within the last 12 months exceeds three, which would result in a (required regulated response band). An (increased regulatory response band) would be appropriate for two-three events within the last 12 months. One event would fall within the (licensee's response band). If the issue was influenced by aggravating factors, then the issue needs to be evaluated against safeguards mitigating factors. If the issue was influenced by such mitigating factors, the issue would fall within a (required regulatory response band). If it was not subject to such an influence and operational solutions were successful, the issue again would fall within a (required regulatory response band). If operational solutions were not successful, it would result in a loss of confidence in the licensee's ability to provide assurance of radiological safety to a member of the public.

The process flow is described in the diagram herein.


IDENTIFICATION OF NONCONFORMANCE ISSUE
Overall Assessment Process
Risk Assessment of
Safeguards Inspection Findings
draft 1
March 16, 1999
Determine Risk of Radiological Sabotage?
Some Risk
Low Risk
GREEN
Was Non-conformance Predictable or Easily Exploitable ?
YES
NO
> 2 Events within last 12 mos?
YES
WHITE
NO
GREEN
Aggravated by other Factors?
YES
NO
> 3 Events within last 12 mos?
YES
YELLOW
NO
2-3 Events within last 12 mos?
YES
WHITE
NO
GREEN
Were Mitigating Safeguards Factors Effective?
YES
YELLOW
NO
Were Operational Solutions Successful
NO
RED
YES
YELLOW

FEASIBILITY REVIEW OF THE INSPECTION FINDING RISK CHARACTERIZATION AND REACTOR OVERSIGHT PROCESSES

Attachment 3

FEASIBILITY REVIEW OF THE INSPECTION FINDING RISK CHARACTERIZATION AND REACTOR OVERSIGHT PROCESS

Task Group Leader Morris Branch

Task Group Members Larry Bell
Bruce Burgess
Jin Chung
Douglas Coe
John Flack
James Gavula
Peter Habighorst
Phillip Harrell
William Jones
Gareth Parry
Larry Scholl
McKenzie Thomas
Leonard Wert
Barry Westreich
John White

Attachment 3

INTRODUCTION

Section 4 of the Assessment Process (Attachment 4 to SECY-99-007) described a multi-level process for evaluating the feasibility of the new reactor oversight process. The staff planned a test application for early 1999, in which an initial trial of the workability of the proposed process would be conducted. This feasibility review would include a test at a few plants, subject to the availability of data, to demonstrate the ability of the process to reliably assign risk significance and assessment area information to individual plant issue matrix (PIM) entries, evaluate assessment inputs for cornerstones, and to reach conclusions related to actions to be taken that are consistent with actions suggested by concurrently or historically available independent data.

This Appendix describes the scope, findings, results, and recommendations of the initial trial (feasibility) of the new reactor oversight process.

<u>Scope</u>

Because of the schedule, this feasibility review was performed at a time when many of the elements of the new reactor oversight process were still under development. For example, the process for risk characterization of inspection program findings described in Attachment 2 of this Commission paper was not fully developed. However, the concept and methods for assigning a risk characterization to the initiating events and mitigating systems cornerstones have been developed. This feasibility review was intended to solicit end-user insights and feedback as to the potential for applying the new concepts and processes being developed to actual plant specific information. It is expected that additional insights and feedback will be gained from the forthcoming workshops and during the implementation of the pilot plant process planned to begin in early summer 1999.

This initial trial of the worakability of the new proposed reactor oversight process was a limited exercise that began on February 22, 1999, and ended 5 days later on February 26, 1999, with a debriefing of the task group. The task group consisted of two members each from Regions II, III, and IV and three members from Region I. A training staff member participated as both a technical member and a monitor to develop future training needs for effective implementation of the new process. A staff member from the Office of Enforcement (OE) also participated to provide the enforcement perspective associated with many of the issues reviewed.

To promote efficiency and effectiveness, the working groups were divided into two groups for the purpose of reviewing plant specific data. Region I members were paired with Region II, Region

III with Region IV, and one to two risk analysts were also assigned to the groups. The training staff and the OE members rotated between the two groups.

Caution must be exercised regarding extrapolating information from this review because:

- The review was limited to 1 week and many of the elements of the new oversight program are still being developed. Only a limited number of PIM items and licensee event reports (LERs) could be processed with the currently developed inspection program finding risk characterization process.

- Performance indicator (PI) data available for the review was limited; only 6 of the proposed approximate 20 PIs were used.

- Inspection results reviewed were from the existing inspection program which, in the case of Millstone and D. C. Cook, represented a significant use of resources. For example, approximately 10,000 inspector hours were expended at D. C. Cook during the two-year period reviewed. However, most of the risk-significant issues were discovered during an intense design-focused architect engineering inspection that was not a part of the old core inspection program and may not be substantially represented in the new baseline inspection program.

Four plants were selected for the review. The time period of interest was selected to allow the use of as recent data as possible, but at the same time allow the task group to apply at-power PI data during the plant performance review. The plants reviewed and the periods of interest are as follows:

- D. C. Cook Units 1 and 2 for the period 1996 - 1997

- Millstone Units 2 and 3 for the period 1994 - 1995

- St. Lucie Units 1 and 2 for the period 1997 - 1998

- Waterford Unit 3 for the period 1997 - 1998

Objectives

The stated objectives of the feasibility review were to --

- Evaluate the feasibility of new oversight program, realizing that further development and refinement will continue during the pilot and the final implementation phases

- Evaluate the feasibility of a process for risk significance characterization of an inspection program finding or issue

31. Evaluate the process for alignment of inspection findings and available PI data to cornerstone areas

32. Use available data to conduct an abbreviated performance assessment of the plants, and compare proposed actions based on the new process to those actually taken. Additionally, differences between the two processes should be explained based on regional insights

- Determine training needs and future involvement of risk analysts in the process

- Provide feedback for use in the continued development of the risk characterization, inspection program development, and the assessment processes

Details

For the purpose of this paper, the details of how the process was implemented and the results are addressed in the description of the D.C. Cook review. For the other plants, a brief description of the results and conclusions will be provided under that plant's review description.

Risk Characterization of Inspection Program Findings

D.C. Cook Units 1 and 2

The feasibility task group reviewed thirty-five licensee event reports (LERs) and 89 PIM items. The task group, using the inspection finding risk characterization process, initially screened 10 items as potentially risk-significant "red" items (5 items for each unit), 1 item was white, and 25 items were green. All of the items that were screened red were LERs based on findings identified by the architect engineering inspection (IR 50-315, 316/97-201). Of the 5 red items, 4 involved the containment and 1 addressed the potential single failure of control air regulators for the 85, 50, and 20-pound air headers. The white item (LER 315/97-20) also involved degradation of the containment sump associated with plugging of vent holes in the sump roof that were designed to limit the effects of air entrainment. This LER was subsequently retracted by the licensee and was, therefore, not used during the plant assessment described later in this attachment.

The risk characterization of inspection findings required that the finding and all assumptions be clearly stated. Clearly stating the assumptions was essential for accurate risk characterization of the inspection findings. For example, several LERs reviewed described the degradation of the containment sump and its function as a reliable source of suction for all trains of emergency core cooling (ECCS) equipment that rely on the sump during the long-term or recirculation phase of operation. For the purpose of risk characterization, the problem(s) statement identified "all trains of ECCS inoperable during the Recirculation Phase of operation." These findings were screened into the process (i.e., Phase 2 review was required), and the process then required selection of the appropriate accident scenarios that may be impacted by the findings. The next step involved consideration of the duration or exposure time for the degraded condition and its impact on the estimated likelihood of the initiating event's of interest. The task group considered the remaining mitigation capabilities and formed a risk characterization of the finding. The duration was more than 30 days and no mitigation was applied. The most limiting scenario was determined to be a medium-size loss of coolant accident (LOCA), and Table 2 of the process instructions characterized the potential risk of the finding as "red."

The other item considered to be "red" as to potential risk significant involved the postulated failure of a single nonsafety-related 20-pound instrument air regulator (LER 315/97-26). The task group made the assumptions that the air regulator would fail, resulting in damage to the downstream valve operators for the steam generator power operated relief valve and the residual heat removal heat exchanger outlet valves. Although the licensee determined that relief protection for the downstream piping was necessary, its LER submittal made the case that the likelihood of failure was low on the basis of operating history at all of its plants and that the probability of failure combined with a LOCA was even more unlikely. This exercise demonstrated the conservative approach of the process and also pointed out the clear need to consider licensee's positions associated with assumptions and problem statements made by the NRC. Phase 3 of the risk characterization process was developed for just this type of case.

Limitations of the current risk characterization process were known going into the feasibility review. Regarding the PIM items, of the 89 items reviewed, 35 were covered under the LER review and 33 were issues that could not be screened using the risk model. Some of the items were screened out by the process because they involved programmatic issues, 50.59 issues, or were issues that were already evaluated during the LER review. The majority of the remaining items involving containment barriers, security, or emergency preparedness issues did not fit the current model well.

<u>Millstone Units 2 and 3</u>

The PIM process was not in place for Millstone during the 1994 and 1995-time period. For the purpose of this review, an issues list was developed by the Region I members of the task group. During this two-days exercise, time only allowed approximately 12 items for each unit to be processed as to their risk characterization. For Unit 2, eight items were considered green, one item white, one item was considered red, and two items were outside the scope of the model. For Unit 3, there were six green items and no White, Yellow, or Red items. The white issue for Unit 2 (LER 336/94-01) involved multiple failures of two auxiliary feedwater regulating valves. The one red item involved the discovery that containment sump valves were susceptible to pressure locking (LER 336/95-08).

St. Lucie Units 1 and 2

The task group reviewed a total of 12 issues. Most of the items were addressed in LERs. Before the task group's review, the St. Lucie's PIM items were pre-screened for the 1997-1998 time period, and 17 items were selected for screening. Eight of these items involved fire protection and Appendix R issues, some of which are not addressed by the current model. Further refinement of the model is ongoing to address areas identified as not being covered by the current model.

Of those items reviewed, one was characterized as having "red" risk significance. This item involved an issue associated with the Unit 1 recirculation actuation system (RAS) setpoint value. Specifically, because of the setpoint, the emergency core cooling system (ECCS) suction valves' automatic swap-over from the refueling water storage tank to the sump would have occurred at 3 feet from tank bottom verses the required four feet, leading to a possible loss of net-positive-suction-head for the ECCS pumps.

Of the remaining items, only one was screened into phase 2 and it was evaluated as green. Six items were screened out in Phase 1, and three were not within the scope of the current process. These items involved an actual initiating event, fire protection, and a containment cooling issue.

Waterford

For Waterford, the task group reviewed 19 items. Of the 19 items, eight were considered outside the scope of the currently developed risk characterization process. These items were associated with shutdown risk, administrative program problems, and some Appendix R type issues. The task group screened nine of the items as green; two of these items had previously been considered escalated enforcement issues. Two items involved the licensee's discovery of gas intrusion in the RHR system piping, which could have an affect on both the shutdown cooling and the low pressure injection modes of system operation. For the purpose of the plant performance assessment described herein, this item was considered as being only one item of potential risk significance.

Plant Performance Assessment

After completing the risk characterization process, the task group reviewed six PIs generated by NRC and the Nuclear Energy Institute (NEI) and aligned them to the initiating event and the mitigating system's cornerstones. Information for the other cornerstones was not characterized since PI data was not readily available. The results of this effort are described in the following tables.

When the information reviewed was considered essentially identical for both units for the time of interest, the data were presented in a combined table. This was the case for D.C. Cook, as indicated in the tables below.

DATA SUMMARY   Plant: D.C. Cook - Units 1 and 2   Year 1996

Initiating Event	Rating or No.	Mitigating System	Rating or No.
PI- SCRAM	Green	PI- HPI	Green
PI- Transients	Green	PI-AFW	Green
“G” Inspection Finding (IF)	0 items	PI-Emer AC	Green
“W” IF	0 items	PI -SSF	Green
“Y” IF	0 items	“G” IF	5 items
“R” IF	0 items	“W” IF	0 items
		“Y” IF	0 items
		“R” IF	0 items
Summary of Results and Recommended Actions From Action Matrix: All green items continue routine activities.			
Actual Response Taken at the Time: A safety system functional inspection, a system operational performance inspection, and an integrated performance assessment process were conducted.			

Initiating Event	Rating or No.	Mitigating System	Rating or No.
Remarks: Problems in maintenance, inservice testing, and corrective actions were of concern. Additionally, in some instances, the engineering staff exhibited inadequate awareness, understanding, and use of the plant design and licensing bases. Further balance-of-plant problems resulted in plant trips, transients and forced shutdowns.			

DATA SUMMARY   Plant: D.C. Cook - Units 1 and 2   Year 1997

Initiating Events	Rating or No.	Mitigating Systems	Rating or No.
PI- SCRAM	Green	PI- HPI	Green
PI- Transients	Green	PI-AFW	Green
“G” IF	0 items	PI-Emer AC	Green
“W” IF	0 items	PI -SSF	White
“Y” IF	0 items	“G” IF	7 items
“R” IF	0 items	“W” IF	0 items
		“Y” IF	0 items
		“R” IF	2 items*
Summary of Results and Recommended Actions From Action Matrix: Significant degraded cornerstone actions would be recommended. The recommended response would be; the EDO or Commission should discuss performance with senior management, a team Inspection focused on the cause of overall degradation should be performed, the licensee should implement a performance improvement plan with NRC oversight, a 10 CFR 50.54(f) and Confirmatory Action Letter (CAL) should be issued. Additionally, consideration should be given to assigning N+1 inspectors to the site for 2 consecutive cycles.			
Actual Response Taken During the Assessment Period: The region performed an operational safety team inspection and requested that an architect engineer (AE) inspection of D.C. Cook be performed. Once the problems were known and the plant was shut down in accordance with its Technical Specification’s the region issued a CAL and in early 1998, Implemented the NRC’s Inspection Manual Chapter 0350 process. Escalated enforcement was issued for numerous design deficiencies identified by the AE design inspection.			

Initiating Events	Rating or No.	Mitigating Systems	Rating or No.
Remarks: * Five separate LERs were considered during this assessment. The four containment LER issues were listed as one risk significant item and the 1 Red item associated with the potential failure of the instrument air regulator may be mitigated from red to a less risk significant item on the basis of a more refined NRC and licensee risk assessment of this item.			

DATA SUMMARY   Plant: Millstone - Unit 2   Year 1994

Initiating Events	Rating or #	Mitigating Systems	Rating or #
PI- SCRAM	Green	PI- HPI	Green
PI- Transients	Green	PI-AFW	Green
“G” IF	0 items	PI-Emer AC	Green
“W” IF	0 items	PI -SSF	White
“Y” IF	0 items	“G” IF	5 items
“R” IF	0 items	“W” IF	1 item
		“Y” IF	0 items
		“R” IF	0 items
Summary of Results and Recommended Actions From Action Matrix: One degraded cornerstone actions would be recommended. The DD/RA should meet with licensee management. An inspection focused on the basis or the causal link for safety system failures should be conducted. Recommend that an N+1 inspector coverage be established for a two cycles. The Regional Administrator should discuss the issues with the licensee.			

Initiating Events	Rating or #	Mitigating Systems	Rating or #
Actual Response Taken: A management meeting was held concerning procedure adherence and corrective action. Engagement continued with the Millstone Assessment Panel reviewing and coordinating NRC's activities. A reverse CAL was solicited from the licensee relative to performance improvement program and the EDO and RA met with the licensee's Board of Directors.			
Remarks: Essentially no difference between recommended and actual agency response.			

DATA SUMMARY   Plant: Millstone - Unit 2   Year 1995

Initiating Events	Rating or No.	Mitigating Systems	Rating or No.
PI- SCRAM	Green	PI- HPI	Green
PI- Transients	Green	PI-AFW	Green
IF “G”	0 items	PI-Emer AC	Green
IF “W”	0 items	PI -SSF	White
IF “Y”	0 items	IF “G”	2 items
IF “R”	0 items	IF “W”	0 items
		IF “Y”	0 items
		IF “R”	1 item
Summary of Results and Recommended Actions From Action Matrix: Significant degraded cornerstone actions would be recommended because repetitive degraded cornerstones and one red finding. The EDO or Commission should meet with senior licensee management and the licensee should develop an improvement plan with NRC oversight. A team inspection should evaluate controls of original design bases because of the risk significant concern about pressure locking of the containment sump valves and continued safety system failures. A 10 CFR 50.54(f) letter should be issued with a proposed CAL.			

Initiating Events	Rating or No.	Mitigating Systems	Rating or No.
Actual Response Taken at the Time: Escalated enforcement actions were taken for the risk significant red item. The Millstone Assessment Team continued its activities. A procurement inspection, a service water operation performance inspection, and an engineering program review were conducted. A followup review of the EOP program was also conducted. A restart meeting was conducted and a startup team inspection was performed. The NRC used portions of Manual Chapter 0350 to conduct their activities.			
Remarks: In general there was no difference between expected and actual agency response. However, numerous initiative inspections were conducted to address long-standing performance issues such as poor corrective action program, and the quality of engineering work.			

DATA SUMMARY   Plant: Millstone- Unit 3   Years 1994 & 1995

Initiating Events	Rating or No.	Mitigating Systems	Rating or No.
PI- SCRAM	Green	PI- HPI	Green
PI- Transients	Green	PI-AFW	Green
“G” IF	3 items	PI-Emer AC	Green
“W” IF	0 items	PI -SSF	Green
“Y” IF	0 items	“G” IF	0 items
“R” IF	0 items	“W” IF	0 items
		“Y” IF	0 items
		“R” IF	0 items
Summary of Results and Recommended Actions From Action Matrix: Cornerstone objectives fully met as all items were green.			
Actual Response Taken at the Time: Unit 3 was impacted by all of the efforts associated with improving the performance of Units 1 and 2, so it is not easy to differentiate.			

Initiating Events	Rating or No.	Mitigating Systems	Rating or No.
Remarks: None			

DATA SUMMARY   Plant: St. Lucie - Unit 1   Year 1997

Initiating Events	Rating or No.	Mitigating Systems	Rating or No.
PI- SCRAM	Green	PI- HPI	White
PI- Transients	Green	PI-AFW	Green
"G" IF	0 items	PI-Emer AC	Green
"W" IF	0 items	PI -SSF	Green
"Y" IF	0 items	"G" IF	2 items
"R" IF	0 items	"W" IF	0 items
		"Y" IF	0 items
		"R" IF	1 item
Summary of Results and Recommended Actions From Action Matrix: The matrix would have indicated that a significant degraded cornerstone action would be appropriate. However, the one red item that drove the assessment in this area was identified by the licensee and if credit for operator actions was allowed, the item would have been a yellow item. The task group decision was made on the basis of information available at the time, and a later review of this issue by the AEOD accident sequence precursor (ASP) process allowed credit for operator actions. Therefore, the actions for one degraded cornerstone would be more appropriate.			
Actual Response Taken at the Time: The red or yellow item was considered a Level 2 enforcement issue and a civil penalty was issued. The region was conducting quarterly meetings with the licensee to discuss corrective actions for perceived weak areas including engineering and the 50.59 process.			

Initiating Events	Rating or No.	Mitigating Systems	Rating or No.
Remarks: The recommended actions as a result of the process agreed with the actual actions taken. Regional management was meeting with the licensee quarterly to discuss performance issues, including engineering problems. St. Lucie had been under a performance improvement program for previously identified issues.			

DATA SUMMARY   Plant: St. Lucie - Unit 1 Year 1998 Unit 2 Years 1997 and 1998

Initiating Events	Rating or No.	Mitigating Systems	Rating or No.
PI- SCRAM	Green	PI- HPI	Green
PI- Transients	Green	PI-AFW	Green
“G” IF	0 items	PI-Emer AC	Green
“W” IF	0 items	PI -SSF	Green
“Y” IF	0 items	“G” IF	1 - 3 items
“R” IF	0 items	“W” IF	0 items
		“Y” IF	0 items
		“R” IF	0 items
Summary of Results and Recommended Actions From Action Matrix: Cornerstone objectives fully met, all assessment inputs green, continue routine activities.			
Actual Response Taken at the Time: Performance was determined by the region to be improving. A routine inspection program was conducted with a pilot fire protection functional inspection that identified several fire protection problems.			

Initiating Events	Rating or No.	Mitigating Systems	Rating or No.
Remarks: None			

DATA SUMMARY   Plant: Waterford - Unit 3   Year 1997

Initiating Events	Rating or No.	Mitigating Systems	Rating or No.
PI- SCRAM	Green	PI- HPI	Green
PI- Transients	Green	PI-AFW	Green
“G” IF-	1 item	PI-Emer AC	Green
“W” IF	0 items	PI -SSF	White
“Y” IF	0 items	“G” IF	7 items
“R” IF	0 items	“W” IF	1 item *
		“Y” IF	0 items
		“R” IF	0 items
Summary of Results and Recommended Actions From Action Matrix: Actions for one degraded cornerstone would be recommended. The DD/RA should meet with licensee management and an inspection focused on the causes of safety system failures should be performed. The RA should discuss performance with the licensee and sign the assessment report.			
Actual Response Taken at the Time: The licensee voluntarily implemented a performance improvement plan and quarterly meetings with the licensee were held by RA/DD/BC to discuss the improvement program, with emphasis on engineering. An AE design inspection was scheduled.			

Initiating Events	Rating or No.	Mitigating Systems	Rating or No.
Remarks: The * in the white findings block indicates that two LERs were issued to describe what was actually one event of a Nitrogen void in the LPSI piping that affected both the low pressure safety injection and the shutdown cooling functions. Additionally, the actions taken appear to be more conservative than those warranted based solely on the data reviewed.			

DATA SUMMARY   Plant: Waterford - Unit 3   Year 1998

Initiating Events	Rating or No.	Mitigating Systems	Rating or No.
PI- SCRAM	Green	PI- HPI	Green
PI- Transients	Green	PI-AFW	Green
“G” IF	0 items	PI-Emer AC	Green
“W” IF	0 items	PI -SSF	Green
“Y” IF	0 items	“G” IF	1 item
“R” IF	0 items	“W” IF	0 items
		“Y” IF	0 items
		“R” IF	0 items
Summary of Results and Recommended Actions From Action Matrix: Cornerstone objectives fully met, all findings were green, continue routine activities.			
Actual Response Taken at the Time: There was little relief from the actions taken for the previous years performance.			
Remarks: Region’s concern was with engineering activities at Waterford and this concern drove many of the regions actions.			

Results

- The task group determined that the new processes are feasible to pilot but refinement is needed in some areas and additional development is needed for the cornerstone issues that are not currently covered.

- The risk characterization process was useful in characterizing the risk significance of those items within the scope of the current process.

- The simple screening and Phase 2 process tend to be conservative and will most likely require a Phase 3 review by both the NRC and the licensee before any action decisions are made.

- A test of repeatability of the process for two items was successful. Further testing is planned.

- Further refinement is necessary to allow easier alignment of an issue to a cornerstone and permit items involving containment barriers, fire protection issues, and shutdown risk to be addressed. Additionally, criteria for findings associated with the emergency preparedness, radiation safety, and safeguards areas are being developed, and tabletop reviews of typical findings in these areas are planned.

- Thorough training of inspectors is needed to implement the new process and increased involvement of regional and Headquarters risk analysts is expected until such time that inspectors become more familiar with the processes.

• The plant performance assessment process provided valuable insights, and with the exception of Millstone 3 and perhaps Waterford, the actions proposed by the new program were similar to the actions taken at the time. The actions recommended by the new process were made on the basis of the risk insights from hardware problems that were experienced (**what** occurred) and not insights of the programmatic or repetitive items (**why** they occurred). For D. C. Cook, the assessment of the 1997 data revealed that until the plant's shutdown, performance was considered within the licensee's response band (green). After the intense design-focused inspection, risk-significant hardware/design problems drove plant performance to where the mitigating system cornerstone was considered to be significantly degraded by the action matrix. The performance review did identify a number of PIM items that individually, on the basis of risk, were green items. Additionally, many of the risk-significant items identified by the AE design team had been previously evaluated and disposed by the licensee through their corrective action program.

Recommendations

The improved reactor oversight program should be piloted and continuous improvement feedback should be solicited, evaluated, and implemented as appropriate.

The risk characterization process needs to be essentially complete and necessary personnel trained before the pilot program is begun.

Based on the feasibility review, risk significant findings, were for the most part, related to a design or hardware issue. This observation was provided to the task group responsible for the development of the new risk-informed baseline inspection. Additionally, the task group's experience with identified design deficiencies at D. C. Cook, some of which existed since initial plant construction, were provided to the assessment task group for evaluation. It is fully expected that refinement of the inspection and assessment processes will continue during the pilot. The Office of Research is pursuing a method of determining if a combination of green items under a single cornerstone can represent a risk-significant pattern that can then be used in the plant assessment process to focus additional inspection or licensee's efforts if necessary.

ENFORCEMENT STRATEGY FOR
NEW REACTOR OVERSIGHT PROCESS

Task Leader Barry Westreich

David Nelson

Attachment 4

1. INTRODUCTION AND PURPOSE

As described in NUREG-1600, Revision 1, "General Statement of Policy and Procedures for NRC Enforcement Actions," the purpose of the current NRC enforcement program is to support the NRC's overall safety mission in protecting the public and the environment. Consistent with that purpose, enforcement actions have been used as a deterrent to emphasize the importance of compliance with requirements and to encourage prompt identification and prompt, comprehensive correction of violations.

Historically, the Enforcement Policy provided vigorous enforcement action when dealing with licensees, contractors, and their employees who did not devote the necessary meticulous attention to detail and did not achieve the high standard of compliance with NRC requirements. In addition, the staff reviewed each case and determined the enforcement action to be taken based on the specific circumstances.

The current enforcement process has been successful in focusing attention on compliance issues to improve safety. The enforcement process (1) assesses the significance of individual inspection findings and events, (2) formulates the appropriate agency response to these findings and events, (3) emphasizes good performance and compliance, (4) provides incentives for performance improvement, and (5) provides public notification of the NRC's views on licensees' performance and actions. It is noteworthy that while there have been substantial changes to the enforcement program since 1980, the basic theory of enforcement using sanctions, including the use of civil penalties to deter noncompliance, has been used by the Commission for almost thirty years. In sum, escalated enforcement actions have been used to provide regulatory messages in the context of sanctions to encourage licensees to improve their performance. However, the NRC has at times not always integrated the enforcement process with its performance assessment processes. This may have resulted in mixed regulatory messages regarding the NRC's assessment of licensee performance and improvement initiatives.

The development of a new reactor oversight process with a more structured performance assessment process, including a process to evaluate the significance of individual compliance findings with more predictable regulatory responses through its action matrix, provides an opportunity to reconsider the existing enforcement process. In considering a new approach to enforcement, the staff is not saying that the existing process which used civil penalties has not served the agency or is ineffective. However, given a more predicable and scrutable oversight process, a greater agency focus on risk and performance, and the maturing of the industry with improved overall performance, this is an opportunity to develop an approach to enforcement that will better integrate with the overall reactor oversight process. The new reactor oversight process is intended to provide similar functions as the current enforcement process. For example:

- Individual compliance findings are evaluated for significance under each system.

- Both the current enforcement and the new oversight processes result in formulating agency responses to violations and performance issues. The enforcement process uses sanctions such as citations and penalties. It also uses processes similar to what the assessment process action matrix utilizes such as meetings to discuss deteriorating performance, 50.54(f) letters, Demands for Information, Confirmatory Action Letters, and Orders to formulate the agency response.

- Both processes provide incentives to improve performance and compliance as they provide measures of deterrence since licensees normally strive to avoid regulatory actions and enforcement sanctions.

- Both approaches also provide the public with the NRC views on the status of licensees' performance and compliance.

Given the similarities in the purposes of the two programs, the enforcement program should be used to complement the assessment program by focusing on individual violations. The agency response to declining performance, whether caused by violations or other concerns, should be dictated by the agency action matrix. The result should be a unified approach within the agency for determining and responding to performance issues of a licensee that (a) maintains a focus on safety and compliance, (b) is more consistent with predictable results, (c) is more effective and efficient, (d) is easily understandable, and (e) decreases unnecessary regulatory burden. It should, therefore, promote public confidence in the regulatory process.

2. PROPOSED ENFORCEMENT PROGRAM

2.1 Background

To ensure a consistent approach between the enforcement program and the assessment process, one agency method for categorizing the risk significance of findings involving violations should be utilized. The Significance Determination Process (SDP) is being developed to characterize inspection findings on the basis of their risk significance and performance impact. To support a unified approach to significance, the enforcement program should also use the results of the SDP categorization of the significance of findings involving violations.

The significance of an issue under the new assessment process may differ from that under the current enforcement program because of the different focus of the current enforcement program and the methodology to be used in the SDP. The current enforcement program focuses on causes of violations, as well as the consequences resulting from violations. In some cases the root cause has been perceived to be more significant than the consequences. The SDP for three of the four reactor safety cornerstones is a process that uses risk analysis to calculate the effect of equipment degradation on the ability of the licensee to mitigate an accident and the resulting change in core damage frequency ($\triangle$CDF). Each compliance finding will be evaluated to determine its risk significance and will formulate an input in the assessment process. Violations in a risk range of greater than 10^{-6} $\triangle$CDF will be evaluated as "significant" and assigned a color band of white, yellow, or red for assessment purposes. Violations evaluated at less than 10^{-6} $\triangle$CDF would not be considered significant violations and assigned a color band of green. Within the other four cornerstones, occupational radiation safety, public radiation safety, physical protection, and emergency preparedness, violations will also be subject to an analysis to categorize the significance of compliance findings. As a result, some issues that were considered significant violations under the current enforcement policy may not be of significance under the new assessment process.

When analyzing different options for revising the enforcement policy to make it consistent with the assessment process, the staff considered using a direct tie to the significance of a finding that was determined by the SDP categorization. For example, following disposition of the significance of an issue by the SDP, the enforcement process could categorize the issue as follows:

- Green - Severity Level 4 violation
- White - Severity Level 3 violation
- Yellow - Severity Level 2 violation
- Red - Severity Level 1 violation

An assessment process with sanctions similar to the current enforcement process could be used based on the severity level. Although this option would preserve a more traditional approach to enforcement, there are substantial questions as to whether it is a viable approach. This is because the underlying process for determining the significance of inspection findings using the SDP uses risk analysis, particularly for three of the four reactor safety cornerstones, and relies on various assumptions in performing the analysis. The lack of standardized methodology for making these assumptions and for performing these types of risk assessments, and the lack of fidelity of Probabilistic Risk Assessments (PRAs), may make decisions to cite a violation at a particular severity level and impose a civil penalty difficult to defend when confronted with a licensee's differing assumptions and risk assessment methodology. In addition, mixed messages may likely occur as enforcement action resulting from the traditional enforcement approach may be inconsistent with the actions flowing from the assessment action matrix.

2.2 The Proposed Enforcement Approach

As a result of the problems inherent in tying the assessment of findings directly to the color bands of the assessment process previously described, a different approach was considered. Because the assessment process will provide many of the functions and objectives that the enforcement program had been performing in the past and in light of the maturing and overall improved performance of licensees, a new enforcement approach is warranted that will complement the assessment process. In developing a new approach, the staff had the following objectives:

1) Enforcement needs to be consistent with the safety philosophy of the assessment process.
2) It needs to maintain an emphasis on compliance.
3) The enforcement process needs to be simplified and predicable to create a more efficient and effective process.
4) It needs to support public confidence in the NRC regulatory process.
5) As with other agency actions it should neither create nor perpetuate unnecessary regulatory burdens.

The proposed approach meets these objectives. It essentially divides violations into two groups. The first group are those violations that can be evaluated under the SDP where appropriate action will be determined by the agency action matrix. The second group are those violations outside the capability of the SDP, such as willful violations, those that may impact the NRC's ability for oversight of the regulatory process and those which involve an overexposure or actual release of radioactive material.

2.2.1 Violations Addressed by the Assessment Process Action Matrix

The first group of violations are those that will be assessed by the SDP and the action matrix. Violations will be considered requiring either formal or informal enforcement action. No severity levels will be used. Violations that are evaluated by the SDP as not being significant from a risk perspective will be inputs to the assessment process, but within the licensee response band. Such violations will be considered for informal enforcement and treated as non cited violations consistent with the criteria of Appendix C, Interim Enforcement Policy for Reactor Severity Level IV Violations, 64FR6388, February 9, 1999. Three of the four exceptions to the Interim Enforcement Policy would remain in place. Specifically, a notice of violation would normally be issued only if (1) the licensee fails to restore compliance within a reasonable time after the violation was identified, (2) the licensee fails to place the violation into the corrective action program, or (3) the violation was willful. Willful violations will be treated in accordance with the current section VII.B.1(d) of the Enforcement Policy.

The other exception to issuance of a non cited violation under the Interim Enforcement Policy is a violation that is repetitive as a result of inadequate corrective action and is identified by the NRC. The significance of this type of violation is based on the effectiveness of the licensee's corrective action program, which is a performance assessment issue. The assessment process should determine the significance of this type of violation, and if not risk significant as determined by the SDP, even if repetitive, the violation would be treated as non cited. Thus, the staff would not continue use of this exception. It is noted that in SECY 98-256, the staff stated that this exception might be reconsidered based on the new oversight program.

Violations that are evaluated by the SDP as risk significant will be assigned a color band related to their significance for use by the assessment process and will be considered for formal enforcement action, but typically not civil penalties. As a result of being risk-significant, a formal notice of violation will be issued requiring a formal written response unless sufficient information is already on the docket. Although this approach may have some of the same concerns as noted above by using non-standardized assumptions and methodologies for assessing risk, it should be easier to determine whether a violation is risk-significant (i.e. at least white) than to determine and defend a severity level based on which specific color band range it is in (i.e. white, yellow, or red). The enforcement approach will be based on the significance of the violation independent of the overall response band the licensee is in at the time.

The assessment action matrix and not the enforcement program will be used to formulate the agency response; to determine root causes, if warranted, and to emphasize the need to improve performance for safety-significant violations. Regulatory conferences and other actions as determined by the action matrix will be held if merited by the specific violations or the overall performance of the licensee. Use of the assessment matrix with its escalating responses, (e.g., increased inspection, regulatory attention, and regulatory actions) should provide appropriate incentives and should deter licensee's from being in the increased regulatory response band. Thus, the staff is not proposing the use of the traditional enforcement approach with civil penalties to provide deterrence. This approach will result in enforcement complementing assessment, maintaining consistency, and promoting a predictable and unified regulatory message. If consistently applied, it should build public confidence.

2.2.2 Violations Subject to Traditional Enforcement Actions

In the second group of violations, the traditional enforcement program would be retained, along with a potential for the imposition of civil penalties or other appropriate enforcement action. These violations involve (1) willfulness including discrimination, (2) actions that may impact the NRC's ability for oversight of licensee activities[1], and (3) actual consequences such as an overexposure to the public or plant personnel or a substantial release of radioactive material. A more traditional enforcement approach is warranted for deterrence. This approach would retain the four severity levels and civil penalties under the current enforcement policy.

Finally, there may be particularly significant violations where it is appropriate to have a civil penalty, notwithstanding the program described above, for violations addressed in the action matrix. While expected to be rare, the staff does not believe the Commission's policy should prohibit it from exercising the Section 234 authority of the Atomic Energy Act. Therefore, the policy should provide provisions for the Commission to impose civil penalties for particularly significant cases. Examples where a civil penalty may be warranted include, a significant violation of a safety limit as described in 10 CFR 50.36 (a) or for an inadvertent criticality, both of which are Severity Level I violations in the current enforcement policy.

2.2.2.1 Comparison of the Proposed Process with the Current Enforcement Policy

The Office of Enforcement performed a review of the escalated enforcement actions issued during 1997 and 1998 to determine how many of these issued violations might remain under the new enforcement process. About 17% of the escalated violations were related to willfulness, impacting the regulatory process or actual consequences.

3. CONCLUSION

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[1] Violations that involve actions that may impact the regulatory oversight process include those associated with reporting issues, failure to obtain NRC approvals such as for changes to the facility as required by 10 CFR 50.59, 10 CFR 50.54(a), 10 CFR 50.54 (p), and failure to provide the NRC with complete and accurate information or to maintain accurate records.

This proposed enforcement program is a shift from the past implementation of the NRC enforcement function. However, the new enforcement process will maintain a focus on compliance by the use of formal and informal enforcement actions as NRC moves to a more risk-informed and performance-based regulatory process. Corrective action will be addressed. It will leverage the NRC's resources by obtaining formal responses for more significant violations. The NRC regulatory response will continue to escalate on the basis of the safety significance of the issues and the overall performance of a licensee. Increased regulatory scrutiny, as well as deterrence of poor performance should result in the maintenance of a satisfactory level of performance by licensees. Because the assessment process will be performing many of the functions that the enforcement program provided in the past, there is a reduced need for varying severity levels and the imposition of civil penalties. This should produce a more consistent regulatory message. Although the abandonment of civil penalties for most reactor cases may initially cause a problem with negative public perception, the overall approach to assessment, inspection, and enforcement should in the long term assure the public that the NRC is fulfilling its mission of protecting public health and safety. For violations addressed by the assessment process action matrix, this approach should result in NRC and licensees resolving issues in a more efficient manner. Finally, for violations involving willfulness (including discrimination), that may impact the NRC's ability for oversight of licensee activities, or actual consequences, the traditional enforcement program will continue to be utilized.

NOTEWORTHY CHANGES TO SECY-99-007 CONCEPTS

Attachment 5

Following the issuance of SECY-99-007, the transition task force was assembled and continued concept development. The following items were changed in response to Commission comments, public comments, and developmental efforts including the feasibility review--

Action Matrix

The action matrix was modified to address Commission concerns expressed at the January 20, 1999, briefing and public comments. See Table 5.1. Specific changes include--

- The actions in the column that includes a repetitive degraded cornerstone were modified to provide for increased Commission awareness and potential involvement.

- The overall unacceptable performance column was modified to indicate plants are not permitted to operate within this band.

- The column that includes a repetitive degraded cornerstone was modified to address one red assessment input.

- Column descriptions were enhanced and column numbers were removed.

- References to the N+1 resident inspector policy were removed.

Several Commissioners emphasized that the staff should address how NRC actions for significant declines in licensee performance, which are identified during the annual cycle, will be taken. As described in SECY-99-007, the staff proposes to use the action matrix as a guide in determining appropriate actions. If an action that requires agency-level approval is necessary during the cycle, necessary concurrences will be obtained without having to hold an Agency Action Review meeting.

Performance Indicator Table

The staff modified the performance indicator table to reflect progress in this area and Commission, licensee, and public comments (see Table 5.2). The staff is developing a detailed performance indicator manual and will exercise it during the pilot program. Specific changes include--

- The risk-significant scrams indicator was renamed “scrams with loss of normal heat removal” to reflect the method that was used to set the thresholds.

- The vital area security equipment availability indicator was removed because it was not meaningful. The baseline inspection program will provide coverage in this area.

- The Safety System Performance Indicators (SSPIs) were changed as follows:

  1. For BWRs, the HPCI and RCIC systems, which are treated as two trains of the same system in the WANO indicator, were separated into two systems, making a total of 4 BWR systems being monitored by these PIs.

  2. For PWRs, the RHR system was added, making a total of 4 systems monitored by these PIs.

  3. The indicators were renamed "Safety System Unavailability" indicators to differentiate them from the WANO indicators.

  4. The green-white thresholds for the BWR RHR and the PWR HPSI systems were changed from 1.5% to 2% to match the industry's year 2000 goals for those systems.

  5. The green-white threshold for the PWR RHR system was set at 2%.

  6. The green-white threshold for the emergency ac system was changed from 2.5% to 3.8% to accommodate 2-week allowed outage times.

  7. The yellow-red thresholds for the RHR and PWR HPSI systems were changed from TBD to 10%.

- The containment leakage indicator was changed to eliminate the use of the ILRT results and to use only the LLRT results. The green-white threshold for this indicator was accordingly changed from 100% of L_a to 60% of L_a.

- The ERO readiness indicator was modified to state that only key ERO positions are included.

- The Alert and Notification System indicator was changed to measure siren operability by calculating the percentage of successful siren tests rather than the percentage of time availability of the sirens.

- The dual indicators for the EP and both radiation safety cornerstones were changed to single indicators.

- A uniform format for all thresholds was established.

NOTE: The staff carefully considered Commission comments related to concerns about the magnitude and, in some cases, yellow-red threshold values. Where values are indicated in this column they are risk-informed. Several N/A's remain because applicable technical specifications and regulations preclude establishing higher thresholds because the plant will already be shutdown. Also, in some cases, there is insufficient correlation to risk to establish a yellow-red threshold value.

<u>Risk-Informed Baseline Inspection Program</u>

Fire Protection Inspections

The staff is considering how to factor the knowledge gained from conducting the pilot Fire Protection Functional Inspections into the baseline inspection program. The staff has drafted a procedure that adds 72 hours to the 36-hour triennial inspection described in RIM 1 of
SECY-99-007. The additional 72 hours would be used for two additional experienced inspectors (electrical and mechanical engineers) to form a three person, one-week team inspection, focused on post-fire safe shutdown and configuration management. The staff has scheduled a meeting for March 25, 1999, to discuss an NEI proposal on the structure of future fire protection inspections. The staff's draft baseline inspection procedure for fire protection will be discussed at that meeting.

Table 5.1 Action Matrix.

LICENSEE PERFORMANCE
INCREASING SAFETY SIGNIFICANCE ---------->

RESULTS		All Assessment Inputs (Performance Indicators (PIs) and Inspection Findings) Green; Cornerstone Objectives Fully Met	One or Two Inputs White (in different cornerstones); Cornerstone Objectives Fully Met	One Degraded Cornerstone (2 White Inputs or 1 Yellow Input) or any 3 White Inputs in a Strategic Performance Area; Cornerstone Objectives Met with Minimal Reduction in Safety Margin	Repetitive Degraded Cornerstone, Multiple Degraded Cornerstones, Multiple Yellow Inputs, or 1 Red Input[2]; Cornerstone Objectives Met with Significant Reduction in Safety Margin	Overall Unacceptable Performance; Plants Not Permitted to Operate Within this Band, Unacceptable Margin to Safety
RESPONSE	Regulatory Conference	Routine Senior Resident Inspector (SRI) Interaction	Branch Chief (BC) or Division Director (DD) Meet with Licensee	DD or Regional Administrator (RA) Meet with Licensee	EDO (or Commission) Meet with Senior Licensee Management	Commission meeting with Senior Licensee Management
	Licensee Action	Licensee Corrective Action	Licensee Corrective Action with NRC Oversight	Licensee Self Assessment with NRC Oversight	Licensee Performance Improvement Plan with NRC Oversight	
	NRC Inspection	Risk-Informed Baseline Inspection Program (Baseline)	Baseline and Inspection Follow-up	Baseline and Inspection Focused on Cause of Degradation	Baseline and Team Inspection Focused on Cause of Degradation	
	Regulatory Actions	None	Document Response to Degrading Area in Inspection Report	Docket Response to Degrading Condition	-10 CFR 2.204 DFI -10 CFR 50.54(f) Letter - CAL/Order	Order to Modify, Suspend, or Revoke Licensed Activities
COMMUNICATION	Assessment Report	DD review/sign assessment report (w/ inspection plan)	DD review/sign assessment report (w/ inspection plan)	RA review/sign assessment report (w/ inspection plan)	RA review/sign assessment report (w/ inspection plan) Commission Informed	
	Public Assessment Meeting	SRI or BC Meet with Licensee	BC or DD Meet with Licensee	RA Discuss Performance with Licensee	EDO (or Commission) Discuss Performance with Senior Licensee Management	Commission Meeting with Senior Licensee Management

<---------- Regional Review I Agency Review ---------->

[2] It is expected that in a few limited situations an inspection finding of this significance will be identified that is not indicative of overall licensee performance. The staff will consider treating these inspection findings as exceptions for the purpose of determining appropriate actions.

Table 5.2 Performance Indicators

Cornerstone		Indicator		Thresholds: Increased Regulatory Response	Thresholds: Required Regulatory Response	Thresholds: Unaccept. Performan.
Initiating Events		Unplanned scrams per 7,000 critical hours		>3	>6	>25
		Scrams with loss of normal heat removal per 36 months		>4	>10	>20
		Unplanned transients per 7,000 critical hours		>8	NA	NA
Mitigating Systems		Safety system unavailability, % per 36 months	High-Pressure Injection			
			BWRs			
			HPCI	>4%	>12%	>50%
			HPCS	>1.5%	>4%	>20%
			PWRs			
			HPSI	>2%	>5%	>10%
			High-Pressure Heat Removal			
			BWRs			
			RCIC	>4%	>12%	>50%
			PWRs			
			AFW	>2%	>6%	>12%
			Residual Heat Removal	>2%	>5%	>10%
			Emergency AC Power	>3.8%	>5% (>2 EDG >10%)	>10% (>2 EDG >20%)
		Safety system failures per 12 months		>5	NA	NA
Barriers	Fuel Cladding	Reactor Coolant System (RCS) specific activity, % of Tech. Spec. limit		>50%	>100%	NA
	RCS	RCS leak rate, % of Tech. Spec. Limit		>50%	>100%	NA
	Containment	Containment leakage, % of allowable (L_a)		>60%	NA	NA

Table 5.2 Performance Indicators				
Emergency Preparedness	Emergency Response Organization (ERO) drill/exercise performance, % per 24 months	<90%	<70%	NA
	ERO readiness, % of key positions per 24 months	<80%	<60%	NA
	Alert and Notification System performance, % of operable sirens per 12 months	<94%	<90%	NA
Occupational Radiation Safety	Occupational exposure control effectiveness: (1) the number of non-compliances with 10 CFR Part 20 requirements for high (>1000 mr/hr) and very high radiation areas, and (2) uncontrolled personnel exposures exceeding 10% of the stochastic or 2% of the non-stochastic limits per 36 months	>5	>11	NA
Public Radiation Safety	Offsite release performance: the number of effluent events that are reportable per 10CFR Part 50 Appendix I, the Offsite Dose Calculation Manual, or Technical Specifications per 36 months	>6	>13	NA
Physical Protection	Protected area security equipment availability, % per 12 months	<95%	<85%	NA
	Personnel screening reportable program failures per 12 months	>2	>5	NA
	Personnel reliability reportable program failures per 12 months	>2	>5	NA

PILOT PROGRAM

Task Leader   Timothy Frye

Attachment 6

PILOT PROGRAM

Task Leader Timothy Frye

Attachment 6

1 INTRODUCTION

22. Purpose

The purpose of the pilot program is to apply the proposed new regulatory oversight processes described in Commission paper SECY-99-007 to a select number of plants. Performance indicator (PI) data reporting and the revised inspection, assessment, and enforcement processes will be exercised at the pilot plants. Lessons learned from this pilot effort will allow the processes and procedures to be refined and revised as necessary prior to full implementation.

1.2 Scope

The pilot program will be a 6-month effort that will involve two sites from each region. The plants selected, as shown in Table 6.1, represent a cross-section of design and licensee performance across the industry. The pilot plants will collect and report PI data, be inspected by the NRC under the new risk-informed baseline inspection program, have enforcement action taken under the new enforcement policy, and be assessed under the new streamlined assessment process.

1.3 Objectives

The objectives of the pilot program are to (1) exercise the new regulatory oversight processes to evaluate whether or not they can function efficiently, (2) identify process and procedure problems and make appropriate changes prior to full implementation, and (3) to the extent possible, evaluate the effectiveness of the new processes. The pilot program will also measure the agency and licensee resources required to implement the new inspection, assessment, and enforcement processes in order to quantify the resource changes. The results of the pilot program will be evaluated against pre-established success criteria. Full implementation of the new oversight processes will commence pending successful completion of the pilot program, as measured against these success criteria.

1.4 Schedule and Major Milestones

The major milestones for the pilot program are listed below. A more detailed schedule for pilot program implementation is provided in Section 2 of this attachment.

April 1999	-	First draft of oversight process procedures completed
	-	PI reporting training session
	-	NRC inspection program training session
May 1999	-	Regulatory oversight process workshop
	-	Issue final draft procedures for pilot program
June 1, 1999	-	Begin pilot program
November 1999	-	Pilot plant mid-cycle review, inspection planning meeting, issuance of 6-month inspection look-ahead letter

December 1999	-	Evaluate new regulatory oversight processes at pilot plants against success criteria

2 PILOT PROGRAM

2.1 Objectives of the Pilot Program

The objectives of the pilot program are to apply the new PI, inspection, assessment, and enforcement processes to a limited number of plants in order to (1) exercise the new regulatory oversight processes and evaluate whether or not they can function efficiently, (2) identify process and procedure problems and make appropriate changes prior to full implementation, and (3) to the extent possible, evaluate the effectiveness of the new processes. The pilot program will also measure the agency and licensee resources required to implement the new inspection, assessment, and enforcement processes in order to quantify the resource changes. Ground rules for how these new processes will be applied to the pilot plants are discussed in Section 2.3. As described in Section 2.5, pilot program success criteria have been established to measure the ability to meet these objectives. Full implementation of the new oversight processes will commence pending successful completion of the pilot program, as measured against these success criteria. Specific objectives of the pilot program are as follows:

1. Perform a limited-scale exercise of the following processes to evaluate whether they can function efficiently, including:

   - PI data reporting by the industry
   - Performance of a risk-informed baseline inspection program by the NRC
   - Evaluation of PI and inspection results and determination of appropriate actions through the assessment process
   - Implementation of a revised enforcement process that is integrated with the other new oversight processes
   - NRC time reporting and information management systems

2. Identify problems with processes and implementing procedures and make appropriate changes to support full implementation in January 2000, including:

   - Issuing final PI collection and reporting guidance to the industry by October 1999
   - Issuing new or revised inspection program documentation (e.g., inspection procedures, inspection manual chapter 0610, etc.) by December 1999
   - Final enforcement policy revisions by December 1999
   - NRC time reporting and information management systems ready by December 1999
   - Assessment process management directive issued by February 2000

3. To the extent possible, evaluate the effectiveness of the new regulatory oversight processes to determine whether:

   - The PIs and their thresholds provide an appropriate objective measure of plant performance
   - The baseline inspection program adequately supplements and complements the PIs so that the combination of PIs and inspection provide reasonable assurance that the cornerstone objectives are being met
   - The baseline inspection program is effective at independently verifying the accuracy of the PIs
   - The new enforcement policy results in enforcement actions for issues that are consistent with the safety significance resulting from the assessment process
   - The use of the new assessment process and action matrix results in more consistent and predictable NRC action decisions for plants with varying levels of performance

2.2 Pilot Program Major Milestones

Attachment 6 to Commission paper SECY-99-007 provided the plan that the NRC would use to transition through the implementation of the revised oversight processes. The following provides a summary of those transition plan activities related to the pilot program and an updated schedule based on continued development work and coordination with the industry and public.

2.2.1 Prerequisite Work for Pilot Program

March 1999
- Develop PI procedures (PI reporting manual)
- Develop baseline inspection program procedures

April 1999
- Develop assessment procedures
- Develop enforcement procedures (including Commission paper on interim enforcement policy)
- Develop NRC information management systems for pilot
- PI reporting public workshop for pilot plant representatives
- NRC inspection program training session for pilot plant inspectors and managers

May 1999
- Regional planning of the baseline inspection program for the pilot plants
- NRC/Industry public workshop on the regulatory oversight process pilot program (PI reporting, inspection, assessment, and enforcement)
- Issue final PI reporting, baseline inspection program, and assessment process procedures for use during pilot

	-	Issue interim enforcement policy for pilot plants

2.2.2 Pilot Activities

May 1999	-	Pilot plants start PI data collection
June 1, 1999	-	Commence pilot program
July 1999	-	PI verification inspection
	-	Periodic NRC/Industry public meetings to review pilot results
September 1999	-	Quarterly assessment review
October 1999	-	Industry/NRC public workshop on pilot program results
November 1999	-	Mid-cycle assessment review
December 1999	-	Analysis of pilot results against success criteria

2.2.3 Final Products

October 1999	-	PI reporting manual issued
December 1999	-	Baseline inspection program issued
	-	Revised Enforcement Policy issued
	-	Information systems (RPS, RITS, etc.,) in place
February 2000	-	Revised assessment procedures issued

2.3 Pilot Program Ground Rules

The following ground rules define how the pilot program will be performed for the participating sites; they were developed to ensure that the objectives of the pilot program would be met. These ground rules were developed in conjunction with the regions and with headquarters program offices; comments from the industry and the public were considered and incorporated as appropriate.

The pilot program ground rules are as follows:

- The pilot plants will receive the new baseline inspection program in lieu of the current core program.

- The pilot plants will be assessed under the new assessment process in lieu of the current plant performance review (PPR) process (i.e., no August PPR for the pilot plants). The pilot plants will undergo a periodic assessment at the mid-cycle review, scheduled to take place in November 1999.

- PI data collection for the pilot program will start in May 1999, and the first PI report will be due from the participating licensees by June 15, 1999. In addition to the pilot plants, additional licensees may voluntarily report the PIs. The pilot plants will be asked to collect and report one years worth of historical PI data (two years of data when possible) to supplement the data collected during the pilot program.

- Pilot plants will be handled under the new enforcement policy, in lieu of the current enforcement policy.

- The risk-informed baseline inspection program will be conducted at the pilot plants as follows:

  - Regional planning of the new baseline inspection program will be conducted for all pilot plants.

  - Periodic adjustments to the inspection schedule to add, or remove, initiative inspection will be performed for all plants.

  - All new baseline inspection procedures will be performed in each region during the pilot program, but each procedure will not be performed at each plant. For example, the biannual problem identification and resolution inspection procedure might be tested at only four pilot plants, one in each region.

  - The PI verification portion of the baseline inspection program will be tested at all of the pilot plants, but all PIs might not need to be verified at each plant.

  - As many inspectable areas as possible will be inspected based on their intended frequency and the availability of associated activities. Some inspectable areas may not be covered because they will not be applicable to the pilot sites; such as the refueling and outage related activities.

- Regional inspection planning meetings, with program office oversight and assistance, will be held for each pilot plant in May 1999. At that time, previously scheduled regional initiative inspections will be reevaluated to determine the continued need for the inspection under the new oversight framework.

- The need for additional regional initiative inspection during the pilot program will be determined based on a periodic review of the PI results and baseline inspection findings.

- A mid-cycle review and inspection planning meeting, including the issuance of a 6-month inspection look-ahead letter, will be held for each pilot plant by the end of November 1999. These assessment and inspection planning activities will be based on the 5 months of pilot data collected by the end of October 1999.

- Subsequent to the completion of the pilot program, pilot plants will continue under the new oversight processes if full implementation is delayed for the short term (less than 3 months). If it is expected that full implementation will be delayed for more than 3 months, then the staff will evaluate restoring pilot plants to the current regulatory oversight processes.

- The pilot plants will be discussed as part of the April 2000 senior management meeting (SMM) process. At the SMM screening meetings, the pilot plant performance review and discussion of agency action will be based on the PI results and baseline inspection findings, as applied to the action matrix. The action matrix will be used to the extent practicable to determine which pilot plants need to be discussed further at the SMM.

2.4 Pilot Program Support Organization

The transition task force (TTF) will provide support to the pilot plant sites and regions throughout the pilot program. One or two TTF members will be assigned to each region as the primary points of contact during the pilot program. These pilot program support staff members will be the focal point for regional and industry questions on program implementation, will make periodic site visits to monitor NRC and licensee implementation of the program, and will solicit NRC staff and licensee comments on program effectiveness. The insights gained by the pilot program support staff will be part of the input that is considered by the Pilot Program Evaluation Panel.

2.4.1 Pilot Program Evaluation Panel

The Pilot Program Evaluation Panel (PPEP) will function as a management-level oversight group to monitor and evaluate the success of the pilot effort. The PPEP will meet periodically during the pilot program to review the implementation of the oversight processes and the results generated by the PI reporting, baseline inspection, assessment, and enforcement activities. At the end of the pilot program, the PPEP will evaluate the pilot program results against the success criteria described in Section 2.5. For those success criteria that are intended to measure the effectiveness of the processes, and that generally do not have a quantifiable performance measure, the PPEP will serve as an “expert panel” to review the results and judge the success.

As the tasks of the PPEP are better defined and formalized, the staff will work with the Office of the General Counsel to ensure that Federal Advisory Committee Act (FACA) requirements are adhered to.

The PPEP will be a cross-disciplinary group of about eleven people, with membership anticipated to be as follows:

- Deputy Director, Division of Inspection Program Management, NRR - PPEP Chairman
- Three regional division directors (combination of Division of Reactor Safety and Division of Reactor Projects division directors)
- TTF Executive Forum Chairman
- Office of Enforcement representative
- One Nuclear Energy Institute (NEI) representative
- Two pilot plant licensee representatives
- One member of the public
- One State regulatory agency representative

2.5 Pilot Program Success Criteria

The following success criteria will be used to evaluate the results of the regulatory oversight process improvement pilot program. These criteria will determine whether the overall objectives of the pilot program have been met, and whether the new oversight processes (1) ensure that plants continue to be operated safely, (2) enhance public confidence by increasing predictability, consistency and objectivity of the oversight process so that all constituents will be well served by the changes taking place, (3) improve the efficiency and effectiveness of regulatory oversight by focusing agency and licensee resources on those issues with the most safety significance, and (4) reduce unnecessary regulatory burden on licensees as the processes become more efficient and effective.

2.5.1 Performance Indicator Reporting

The following criteria will measure the efficiency and effectiveness of PI reporting.

- Can PI data be accurately reported by the industry, in accordance with reporting guidelines? They can, if by the end of the pilot program, each PI is reported accurately for at least 8 out of the 9 pilot plants.

- Can PI data results be submitted by the industry in a timely manner? They can, if by the end of the pilot program, all plants submit PI data within one business day of the due date.

2.5.2 Risk-informed Baseline Inspection Program

The following criteria will measure the efficiency and effectiveness of the baseline inspection program, including inspection planning, conduct of inspections, inspection finding evaluation, and inspection finding documentation.

- Can the inspection planning process be efficiently performed to support the assessment cycle? It can, if the planning process supports issuing a 6-month inspection look-ahead letter within 4 weeks from the end of an assessment cycle for at least 8 out of the 9 pilot plants.

- Are the inspection procedures clearly written so that the inspectors can consistently conduct the inspections as intended? They are, if by the end of the pilot program, resources expended to perform each inspection procedure are within 25% of each other for at least 8 out of the 9 pilot plants. Inspection procedure quality will also be determined by a PPEP evaluation of feedback from the procedure users.

- Are less NRC inspection resources required to perform the new risk-informed baseline inspection procedures. They are, if the direct inspection effort expended to perform the baseline inspection procedures are about 15% less than the resources expended for the core inspection procedures over the same time period.

- Can the inspection finding risk characterization guidance be used by inspectors and regional management to efficiently categorize inspection findings in a timely manner? It can, if by the end of the pilot program, inspection reports and updated plant issues matrices (PIMs) can be issued within 30 days of the end of an inspection period for at least 8 out of the 9 pilot plants.

- Can inspection findings be properly assigned a safety significance rating in accordance with established guidance? They can, if by the end of the pilot program, at least 95% of the inspection findings were properly categorized and no risk-significant inspection findings were screened out. Success will be determined by an independent review by the PPEP.

- Are the scope and frequencies of the baseline inspection procedures adequate to address their intended cornerstone attributes? Success will be determined by an independent evaluation by the PPEP.

2.5.3 Assessment

The following criteria will measure the efficiency and effectiveness of the new assessment processes.

- Can the assessment process be performed within the scheduled time? It can, if for at least 8 out of the 9 pilot plants, an assessment of the PIs and inspection findings can be completed, with a letter forwarding the results and a 6-month inspection look-ahead schedule, within 4 weeks of the last PI data submittal.

- Can the action matrix be used to take appropriate NRC actions in response to indications of licencee performance? It can, if there is no more than one instance (with a goal of zero) in which an independent review by the PPEP concluded that action required for a pilot plant is different from the range of actions specified by the action matrix.

- Does the combination of PI results and inspection findings provide an adequate indication of licensee performance? Does the process provide a reasonable assurance that the cornerstone objectives are being met and safe plant operation is maintained? Success will be determined by an independent evaluation by the PPEP.

- Are the mid-cycle assessments performed for the pilot plants in a manner that is consistent across the regions and that meets the objectives of the assessment program guidance? Success will be determined by an independent evaluation by the PPEP.

2.5.4 Enforcement

The following criteria will measure the effectiveness of the new enforcement policy.

- Enforcement actions are taken in a manner consistent with the assessment of inspection findings by the risk characterization guidance. Yes, as determined by an independent review by the PPEP.

2.5.5 Information Management Systems

The following criteria will determine whether the NRCs' information management systems are ready to support full implementation of the new regulatory oversight processes.

- Are the assessment data and results readily available to the public? They are, if by the end of the pilot program, the NRC information systems support receiving industry data, and if PIs and inspection findings are publicly available on the Internet within 30 days of the data submittal for at least 8 out of the 9 pilot plants.
- Are the time reporting and budget systems, such as the Regulatory Information Tracking System, ready to support the process changes? They are, if by the end of the pilot program, the time expended for regulatory oversight activities is accurately recorded at least 95% of the time.
- Are the NRC information support systems, such as the Reactor Program System (RPS) and its associated modules, ready to support full implementation of the new oversight processes? They are, as determined by an independent evaluation by the PPEP.

2.5.6 Overall

The following criteria will measure the overall success of the pilot program, including an evaluation of the training provided and an evaluation of the regulatory burden imposed on licensees by the new processes.

- Have inspectors and managers been adequately trained to successfully implement the new oversight processes? They have, as determined by a training effectiveness evaluation reviewed by the PPEP.
- Are the new regulatory oversight processes more efficient and effective overall? They are, if by the end of the pilot program, the agency resources required to implement the inspection, assessment, and enforcement programs are about 15% less than currently required.
- Do the new oversight processes remove unnecessary regulatory burden, as appropriate, from the licensees? They do, based on the results of a pilot plant licensee survey reviewed by the PPEP.

3 PILOT PLANT SELECTION

The following criteria were used to identify potential sites for the pilot program:

- To the maximum extent possible, licensees were chosen that had either volunteered to participate in the pilot program, or that had participated in the NEI task group working on improving the regulatory oversight processes. A number of different licensees were chosen to participate in order to maximize industry exposure to the new processes.

- Plants were chosen to represent a broad spectrum of performance levels, but plants that were in extended shutdowns because of performance issues were not considered.

- A mix of pressurized-water reactors (PWRs) and boiling-water reactors (BWRs) was chosen.

- A mix of plant vendors and plant ages was chosen.

- To the extent possible, two plants with different performance levels within each region were chosen.

- NRC regional office concerns, such as experience of NRC staff associated with pilot plants and transition issues (such as expected departure of key NRC personnel during the pilot program), were considered.

- Licensee concerns, such as their involvement with other significant NRC activities (license renewal, steam generator replacement, etc.), were considered.

These criteria, and potential candidate plants, were discussed with NRC headquarters and regional management, and with NEI. All potential plants that selected to participate were first contacted by NEI, and all agreed to participate in the pilot program. Before publicly announcing which sites were participating in the pilot program, the NRC staff contacted each of the appropriate State organizations to notify them of the site's participation in the pilot program. After the State notifications were completed, a press release was issued on February 22, 1999, to announce the pilot program and the participating sites. Before commencing the pilot program, the staff has offered to participate in public meetings with State and local representative to discuss the pilot program and the revised oversight processes.

The following table summarizes the sites that the NRC and the industry agreed would participate in the pilot program. It is important to note that there are actually nine pilot plants since Public Service Electric & Gas Company (PSE&G) requested that both Salem and Hope Creek participate in the pilot program. NRC headquarters and Region I management agreed with this request.

Table 6.1 - Pilot Plants

Region	Plant	Licensee	Last SALP[1]	PWR/ BWR	Vendor/Age
I	Hope Creek	Public Service Electric &Gas (PSE&G)	2/2/2/1	BWR	General Electric(GE) Type 4/ 13 years
I	Salem 1&2	PSE&G	1/2/2/1	PWR	4 Loop Westinghouse (W)/ 20 years
I	FitzPatrick	New York Power Authority	2/2/2/2	BWR	GE Type 4/ 24 years
II	Harris	Carolina Power & Light Company	1/1/2/1	PWR	3 Loop W/ 12 years
II	Sequoyah 1&2	Tennessee Valley Authority	2/2/2/1	PWR	4 Loop W/ 18 years
III	Prairie Island 1&2	Northern States Power Company	2/1/2/1	PWR	2 Loop W/ 25 years
III	Quad Cities 1&2	Commonwealth Edison Company	2/3/3/2	BWR	GE Type 3/ 26 years
IV	Ft. Calhoun	Omaha Public Power District	2/2/1/2	PWR	Combustion Engineering (CE)/ 26 years
IV	Cooper	Nebraska Public Power District	2/2/3/1	BWR	GE Type 4/ 25 years
SUMMARY	9 Plants	8 Licensees	1/1/2/1 to 2/3/3/2	5 PWRs 4 BWRs	4 W plants 1 CE plant 4 GE plants

Note 1 - SALP scores correspond to the following SALP functional areas: Operations/Maintenance/Engineering/Plant Support

NEW NRC REACTOR INSPECTION AND OVERSIGHT PROCESS (NUREG-1649)

Attachment 7

COMMUNICATION PLAN

Task Leader August Spector

Task Members Roy Mathew
Robert Pascarelli

Attachment 8

COMMUNICATION PLAN

Task Leader: August Spector

Task Members: Roy Mathew
Robert Pascarelli

Attachment 8

COMMUNICATING THE TRANSITION

A COMMUNICATION PLAN

General overview:

The agency is in the process of developing a risk-informed approach to oversight and inspection of reactor licensees. The approach utilizes the best of current inspection practices and the best of risk informed processes. The need for change has been brought about by internal NRC introspection and initiative, maturity of the inspection and operational programs, external stakeholder desire to improve the licensing process in terms of a maturing industry and changing economic and regulatory environment. This communication plan is designed to assist in the transition to risk-informed oversight and inspection of reactor licensees. The communication plan provides an approach toward achieving these ends.

Objectives:

- ♦ Provide accurate and timely information
- ♦ Create positive stakeholder perception
- ♦ Deal with negative perceptions, dispel rumors, and reduce uncertainty
- ♦ Cooperate with stakeholders at all levels and maintain positive relationships
- ♦ Assist in the cultural transition of agency stakeholders and others

Message Development:

- ♦ Obtain facts about new approach and quickly distribute to stakeholders
- ♦ Develop analogies or stories which will help communicate to stakeholders through verbal and non-verbal visualization
- ♦ Provide consistent messages by various communicators outlined in the Communication Plan process
- ♦ Provide factual, unbiased, and balanced messages
- ♦ Distribute the message to internal stakeholders working from the top down, bottom up, and middle outward.
- ♦ Encourage feedback to Senior management by all levels (top, bottom, and middle)
- ♦ Provide a planned/structured communication approach which corresponds to the various stages of Transition Task Force implementation.

Key policy messages:

1**. Maintain safety** by establishing a regulatory oversight framework that ensures that plants continue to be operated safely. In addition to safety, the word maintain is a key word of emphasis. The message we must get across to our staff is that NRC inspectors have done an excellent job during the past twenty years, but due to a maturing industry a more risk informed approach is now required. This approach is based upon the work performed in the past by agency employees and will be maintained by continued inspections based upon risk informed processes. Safety is the foremost consideration and that this is clearly communicated.

2. **Enhance public confidence** by increasing predictability, consistency and objectivity of the oversight process so that all constituents will be well served by the changes taking place.

3**. Improve effectiveness and efficiency** of the oversight process by focusing agency resources and licensee resources on those issues with the most risk-significance. This will result from new approaches to oversight which allow focus on areas of greatest concern.

4**. Reduce unnecessary regulatory burden** as the process becomes more efficient and effective.

Stakeholders Identified: There are five levels of stakeholders between External and Internal constituencies.

Internal	External
Group A: Headquarters within NRR, RES both management and non-management	Group D: State Program Offices, Congress, Legislatures
Group B: Other Headquarter NMSS, other both management and non-management	Group E: Press, Public Interest Groups, Industry Groups (NEI, ANS, INPO, etc.), Individual Utilities
Group C: Regions both management and inspectors	

Some current stakeholder communication issues:

Internal Stakeholders: To keep NRC employees informed of current program activities, enhance their understanding of technical approaches being developed, help make the process of change/transition run smoother, seek and respond to comments/ideas of employees to improve the process, to reduce common fears among staff which arise during any period of profound change.

♦How will this affect job security, work activities, information flow, performance appraisal, responsibility, self-control of personal destiny, etc. by current NRC personnel, especially Regional inspectors.
♦Timeliness of process/policy development and conflict between existing policy and new or interim approach.
♦Identification of top management support (HQ and Regional) for new effort.
♦How will the new process affect self-esteem of agency, inspectors, technical staff, etc. as compared to current approach. Will management demonstrate empathy and caring of employee needs/concerns?
♦How will employee deal with the potential change in inspection approach in addition to all the other changes being brought about within the organization (i.e., NRC Reorganization, new management appointments, changes in Commissioners, etc.)
♦How will budget and other resource declines affect me and my work activities?

External Stakeholders: To keep public, industry and interest groups informed of current program activities, enhance their understanding of technical and policy issues, seek and respond to comments/ideas of various groups in order to improve the processes.

- ♦How will the new process affect plant operation, internal plant processes?
- ♦How will new process affect compensation of key plant managers/employees?
- ♦What influence will potential Congressional oversight have on NRC activities?
- ♦How will we work under a potential duel system of regulations?
- ♦How will the plants participating in pilot study be evaluated before, during, and after the pilot?

Formation of opinion leader groups.

A number of internal groups are to be established designed to help transmit messages throughout the agency and to provide feedback to Senior management and the Transition Task Force. Among these will be a Change Coalition and an Executive Forum made up of senior members of the Change Coalition.

Change Coalition. The Change Coalition is considered the "voice" of the agency as it transitions from the current regulatory framework to a risk-informed oversight process. Chosen because they are considered "opinion leaders" among their peers, Change Coalition members will facilitate communication with employees of the agency and provide interpretative feedback to the Transition Task Force in its effort to develop the oversight program. They will act as positive examples and role models for our internal stakeholders related to the transition process. It is important to bring senior management's message directly to working levels within the organization, hence the Change Coalition will be an important vehicle toward achieving this end. Change Coalition members will be given the "Change Coalition *Backpack*," a guide consisting of essential information about the transition. The *Backpack* will be periodically updated in order to keep change coalition members current.

Change Coalition Executive Forum: will provide high-level regional oversight and a global perspective to the change process and feedback to the Transition Task Force and Senior HQ management. The Executive Forum is made up of the four Deputy Regional Administrators. The Executive Forum will act in an advisory capacity, will actively participate in Commission presentations, will meet approximately every three to four weeks. The purpose of the executive council is to provide regional leadership as the agency transforms to a risk-informed oversight process. The Executive Forum will provide advice and guidance to HQ, but not establish requirements.

Role of First Level Supervisor:

The Transition Task Force recognizes the importance of first level supervisors in supporting cultural transition, especially within NRR and Regional Offices. They have a key role in communicating to their staffs information about the changes which will be taking place within the agency. The first level supervisor maintains close contact with employees and are respected by them, hence it is considered important to have the supervisor actively involved in the transition process and to provide a positive role model during the process of transition and beyond. The Transition Team, through direct contact and through the Change Coalition, will keep agency supervisors informed and provide them with information which they may pass on to their subordinates. We expect the supervisor to keep Change Coalition members informed of employee issues which will be brought to the attention of the Transition Team.

Working with External Stakeholders:

The agency has developed positive and long term relationships with external stakeholder groups. Among these are NEI, various public interest groups, industry management, State Program Offices, and, to varying degrees legislative bodies. These relationships will be maintained and strengthened throughout the process. Regular periodic public meetings have been held and scheduled providing these groups an opportunity to provide constructive input to the Transition Task Force and to the Commission. In addition, agency management has supported professional and industry activities by providing presenters at conferences and meetings sponsored by these groups (and co-sponsored with the NRC). These efforts will be continued. The attached schedule provides currently planned activities.

Pilot Projects:

The Transition Task Force will conduct nine pilot projects throughout the country in conjunction with various utilities. These pilot projects will be designed to test new approaches developed by the agency. It is planned that before each pilot project a public meeting be held in the geographic vicinity of pilot plant sites. Utility management will be asked to participate in order to inform the public of its involvement in the pilot. These meetings will provide NRC an opportunity to inform local citizen and interest groups of the changes to take place, and to solicit public input.

Internal Stakeholder meetings:

Each Region holds several inspector "counterpart" meetings during the year. Transition Task Force members have been scheduled to give presentations at these meetings in order to transmit key messages, update staff on current activities, and solicit input from field inspectors and Regional staff. Senior Task Force members and HQ Senior management will present at these sessions, hence demonstrating top management support of the transition efforts.

Small group information sessions:

Transition Task Force members and Change Coalition members will periodically visit Regional and HQ offices to provide small group information sessions with front line employees. These sessions will be conducted in an informal manner and provide an opportunity for NRC employees to share their views, provide constructive input to the process, and to be kept informed of current events. It is important that these small group sessions be properly orchestrated and provided on a timely fashion. These informal small group sessions provide an excellent opportunity to reduce any cynicism and encourage the formation of the cultural change within the agency.

Electronic Communication:

Today communicating electronically with both internal and external stakeholders is key to bringing key messages and to solicit input/feedback. We will establish a WEB page, known as the E-PAGE, for both internal and external use which will describe key messages, maintain up-dated information, provide links to other WEB pages, and provide contact sources for additional information. (These sources will be coordinated with Public Affairs.) The E-PAGE will be coordinated with both Public Affairs and the EDO communication activities, in order to provide consistent messages. We expect the E-PAGE to be in operation by early March. In addition to the E-PAGE, we are considering issuing computer disks and/or CD-ROMs of the information on the WEB pages so that those who do not have access to Internet facilities can access the information.

The Transition Task Force is planning to produce two short documentary TV videotape programs which will depict the entire transition process and explain the reasons for change, what the changes will be, and show the progression of the pilot project. This tape can be used both internally and externally enhancing the understanding of our stakeholders.

Public Affairs Interface:

It is important to establish and maintain a working relationship with the agency and Regional Public Affairs Offices. We have established this relationship and have maintained contact. Public Affairs has developed several written overviews about the Transition effort. These have been reviewed by the Transition Team. The first plain English overview was published in February 1999 as NUREG-1649 and distributed at the Regulatory information Conference on March 4.In addition, Public Affairs will periodically issue press releases to inform the public of current events. Public Affairs will be conducting briefings with the media designed to inform them of program activities and supply them with background data. The Transition Team will provide assistance in this effort.

Internal Written Communication:

In addition to the internal E-PAGE, several internal written communication vehicles are planned. The February issue of the NRR newsletter had a featured article about the Transition Task Force and its efforts. We are planning a four page feature story in an upcoming issue of the NR&C Newsletter which will describe the process and include photographs and pictures to promote interest. We expect to reprint/overprint copies of this spread to be used in future communication efforts. In addition, we are considering including a one page up-date article in the June, September, November, and January (2000) issues of the NR&C. It is our desire to have print materials and slides used in communicating this effort to be professional looking and consistent.

Interface with EDO/Commission Staff:

In order to maintain communication links with the EDO and Commission staff the Transition Task Force will periodically brief technical staff members. These briefings will solicit input from staff members in addition to keeping them up to date.

Interface with Training:

A member of the Transition Task Force will be responsible for developing training plans and activities directed at the technical staff. These activities will not only further knowledge and understanding of new approaches, but will assist in bringing about the cultural changes which will naturally occur.

Schedule of events planned at this time: See attached

Draft: Regulatory Oversight Process Communication Plan Schedule

January 1999
1/14 Brief Regional DRP Directors
1/14 Meet with NEI to discuss Pilot Plan
1/20 Commission briefing on Process Recommendations
1/20 Enforcement Coordinators Briefing
1/22 Press Release to announce 30 day comment period
1/26 Brief ACRS on Final Recommendations
1/27 NEI/Public Meeting
1/28 Brief Industry Regulatory Compliance and Technology Group
1/28 Visit Salem NPP

February 1999
2/3 R-I Town Meeting Conference Call
2/2 NEI Meeting with Industry; Site VPs/Licensing Managers - East
2/3 NEI Meeting with Industry; Site VPs/Licensing Managers - West
2/10 NEI/Public Meeting: coordinated with OE
2/11 NEI Task Force Briefing of NSIAC
2/17 R-II Resident Meeting
2/18 R-IV Resident Counterpart Meeting
2/23 Public Comment Period ends
2/24 NEI/Public Meeting
Regional Meetings (coincide with PPRs to describe new process) held on various dates

March 1999

3/3-5 Regulatory Information Conference (introduce concepts)
3/11 NEI/Public Meeting
3/12 Executive Forum Mtg.- Videoconference
3/15 Change Coalition Mtg.- Videoconference
3/24 NEI/Public Meeting
3/24-25 Meeting R-3 (SC,FG,MJ,AM)
3/26 Commission Meeting
3/26 Draft IP and IMC 0610 & PIM Guidance for Pilot use issued for comment (made available to the public

April 1999

4/6-8 Briefing for American Power Conference (Frank Gillespie presenter)
4/7 NEI Mtg. Public meeting
4/7 Train the Trainer Session NEI/NRC
4/8 Meeting R-1
4/12-15 PI Workshop (R-3) public
4/22 NEI Public meeting

4/26-30 Inspector Workshop (R-2) NRC

May 1999

5/4-6 R-1 Resident Mtg. (Tentative)
Joint NRC/NEI meeting to resolve issues prior to Pilot (TBA)
5/17-20 Pilot Workshop - Public R-1/HQ
5/24-25 Managing Change Class Open to Task Force and Change Coalition members

June 1999
6/1 Pilot Begins
6/6-10 ANS Conference presentation (tentative)
6/15 Issue Press Release on Enforcement Revisions
6/23 NEA Conference presentation (Tentative)
July 1999

7/12 Present at MIT Course (Gillespie)
7/15-30 Conduct Regional Meetings with States on details of new process

September 1999

Brief Commission TAs on Progress (TBD)

October 1999

10/11-25 (TBD) conduct joint NRC/Industry 2 day Workshop (NRC/NEI)
Issue a Press Release regarding the Workshop

November 1999

Begin NRC Training session for inspectors
December 1999
Training Sessions for NRC inspectors continue
Brief Commission TA's

January 2000

1/15 Press Release issued announcing full process implementation and SALP deletion

May 2000

Commission Briefing on Assessment results
Press Release issued

Note:

8. Change Coalition, Executive Forum and other internal communication vehicles to be on going
9. Public Meeting Information to be posted on NRC Web-page