Reactor Oversight Process Enhancement Project
Baseline Inspection Program
Special Topic – Operating Experience

Background

The objective of the U.S. Nuclear Regulatory Commission's (NRC's) reactor operating experience (OpE) program is to collect, evaluate, communicate, and apply operating experience to support the agency goal of ensuring safety.

The OpE interaction with the Reactor Oversight Process (ROP) is described in inspection manual chapter (IMC) 2523, "NRC Application of Operating Experience in the Reactor Oversight Process," and the Office of Nuclear Reactor Regulation (NRR) and Office of New Reactors (NRO) joint office instruction LIC-401/REG-112, "NRR-NRO Reactor Operating Experience Program." The interaction between OpE and the ROP has primarily been focused within the communication and application aspects of the OpE program objective.

Analysis

In looking at ways to improve the application of OpE to the ROP baseline inspection program, staff reviewed the following:

- OpE program basis documents
- Input from OpE and inspection program staff
- Input from regional staff and inspectors
- Feedback from briefing to ROP Enhancement group
- Feedback from briefing to the Reactor Inspection Branch staff on OpE search techniques
- Input from draft ROP independent assessment
- Recent Office of Inspector General (OIG) & Government Accountability Office (GAO) audits
- Inputs from other ROP Enhancement baseline inspection procedure reviews
- External stakeholder comments from the July 17, 2013, public meeting

Following the 2002 Davis Besse reactor vessel head degradation, the task force charged with reviewing the NRC's OpE program noted several areas of concern in the Reactor Operating Experience Task Force Report, dated November 26, 2003. One concern noted that evaluations of OpE were not being performed to assess the effectiveness of past regulatory actions or to support the needs of Agency programs. The report noted in particular that the OpE program could better support the inspection program by providing smart samples and inspection insights.

Related issues were raised in the draft report of the 2013 ROP Independent Assessment, specifically, that the inspection program did not regularly review actions taken by licensees to resolve past generic issues. Similarly, during a public meeting in July 2013, stakeholders noted

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that NRC inspections were missing an opportunity to review licensee actions taken in response to past generic communications and reactive inspections.

In practice, the majority of OpE interaction with the inspection program over the past few years has occurred with the communication of OpE through a variety of internal channels, as well as, through publicly available sources including Information Notices, OpE Smart Samples (OpESS), and OpE Studies. Feedback from inspection program stakeholders has noted that these communications contain valuable information. However, the same feedback also notes that the amount of information can be overwhelming, fails to highlight the most significant issues, and fails to clarify how the information can be effectively applied in the inspection process. Industry comments during the July 2013 meeting made a similar point; that it was not clear how the NRC's OpE process determined what level of communication or evaluation was needed, or what priority the NRC placed on any given piece of information that was communicated.

Specific inspection guidance on the application of OpE occurs through the use of OpE Smart Samples OpESSs and from specific inspection procedure changes recommended following evaluation of OpE. OpESSs are designed to provide NRC inspection staff with a detailed summary of selected OpE considered as having generic safety significance, and which may be applied on a voluntary basis as part of baseline inspection activities. In some instances, the OpESSs have provided specific guidance and useful insights for inspection areas where the inspection procedures (IPs) themselves provide only general guidance. However, OpESS development has continued to evolve. A 2012 change to the OpESS format aligned it more closely with the IP and Temporary Instruction format, but also extended the development process to the point where they no longer provide OpE feedback to the inspection process as quickly as they once did. Moreover, many OpESSs have been relatively narrow in their focus and, in part, because they are voluntary, their implementation during inspection has been varied.

A recently completed OIG audit (OIG-14-A-02, "Audit of NRC's Oversight of Active Component Aging") questioned whether OpE insights from a study on active component aging were effectively communicated to senior management for appropriate action within the inspection program. A GAO audit (GAO-13-743, "Nuclear Power: Analysis of Regional Differences and Improved Access to Information Could Strengthen NRC Oversight") on the ROP recommended improving inspector access to OpE to improve efficiency. These insights were also taken into consideration as part of this review.

Recommendations
(Note: Recommendations in this subject area will require additional development before they can be implemented.)

Implement an IP OpE Update process. This process would provide a method for linking recent OpE directly to individual IPs. The IP OpE Update would help to inform the selection of inspection samples and provide inspectors with past examples, as well as, guidance for probing potential issues based on current OpE analysis. The IP OpE Updates would be implemented for selected IPs, and would include a publicly available section, hyper-linked directly from the public IP, containing specific inspection guidance and a selection of:

- Recent findings with OpE value related to the IP
- Relevant generic communications/generic issues
- Recent events related to issues reviewed by the IP
- Past significant events related to the IP

Launch of the IP OpE Update process would require resource allocation from and coordination between the operating experience and reactor inspection program branches, as well as, input from regional sources with guidance on performing different samples. Once the program is established, it is anticipated that the initial screening of potential issues for future IP OpE Updates would fit into the OpE Clearinghouse and Analysis processes. Responsibility for maintaining the most current version of the IP OpE Updates would fall jointly to the OpE and reactor inspection program branches, where OpE analysis would determine the appropriate material, and individual IP owners would complete the administrative process. The IP OpE Updates would not require a revision to the IP itself and should be accomplished with minimal administrative burden.