APPENDIX A

REACTOR OVERSIGHT PROCESS SELF-ASSESSMENT METRICS

I. PERFORMANCE INDICATOR PROGRAM METRICS

PI-1 Consistent Results Given Same Guidance

- **Definition:** Independently verify performance indicators (PIs) using Inspection Procedure (IP) 71151, "PI Verification." Count all PIs that either (a) result in a crossed threshold based on a data correction by the licensee (as noted in the resultant inspection report), or (b) have been determined to be discrepant by the staff in accordance with IP 71150, "Discrepant or Unreported Performance Indicator Data."
- **Criteria:** Expect few occurrences, with a stable or declining trend.

Goals Supported: Objective, Predictable

The graph represents the number of significant deficiencies and/or discrepant PIs reported for each quarter.



Analysis: A PI discrepancy is a difference between what was expected to be reported in accordance with PI reporting guidelines and what was reported by the licensee in its PI data submissions. One PI crossed a threshold in Calendar Year (CY) 2012 after inspectors identified a PI discrepancy. The Robinson Power Plant failed to report accurate PI data for the Safety System Functional Failure PI (Inspection Report 05000261/2012003, dated July 30, 2012). The data contributed to the PI crossing into the white performance band outside the PI assessment period (four quarters). Because the chart data show a stable trend since and there was only one PI discrepancy associated with an exceeded threshold in CY 2012, this metric is met.

PI-2 Questions Regarding Interpretation of PI Guidance

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

Criteria: Expect low numbers, with a stable or declining trend.

Goals Supported: Understandable, Risk-Informed, Predictable

The graph below represents the total number of new FAQs introduced during the Reactor Oversight Process (ROP) NRC/Industry Working Group meetings held during the respective quarter.



Analysis: Six FAQs were introduced in CY 2012, two of which have been withdrawn. The four FAQs were related to four different cornerstones (Initiating Events, Mitigating Systems, Occupational Radiation Safety, and Emergency Preparedness). FAQs introduced in CY 2012 represent the lowest yearly total in the previous five years. Because of the declining trend, this metric is met.

PI-3 Timely Indication of Declining Plant Performance

- **Definition:** Quarterly, track PIs that cross multiple thresholds (e.g., green to yellow or white to red). Evaluate and characterize these results to allow timely indication of declining performance.
- **Criteria:** Expect few occurrences, with a stable or declining trend.
- Goals Supported: Risk-Informed, Effective
- **Analysis:** During this assessment period (CY 2012), there were no occurrences of a PI that crossed multiple thresholds.

The staff removed the graph for this metric because it was of little value since no PI has crossed multiple thresholds in the last five years.

PI-4 PI Program Provides Insights to Help Ensure Plant Safety and/or Security

- **Definition:** Survey external and internal stakeholders asking whether the PI program provides useful insights, particularly when combined with the inspection program, to help ensure plant safety and/or security.
- **Criteria:** Expect stable or increasingly positive perception over time.

Goals Supported: Effective, Risk-Informed, Open

Three internal survey questions addressed this metric. The table below presents the questions and the resultant percentages of agreement.

Measure	2004	2006	2008	2010	2012
Pls provide useful information on risk- significant areas.	67%	71%	74%	74%	66%
Pls provide useful insights and, when combined with the inspection program, help ensure plant safety.	68%	71%	71% ¹	77%	70%
Pls provide an objective indication of declining safety performance (can be used to trend performance).	45%	58%	61%²	71%	65%

¹ In prior years' surveys, the staff framed this question in the context of the PIs maintaining safety unilaterally, not combined with the inspection program.

² In prior years' surveys, the staff framed this question using the term "adequate" rather than "objective."

Analysis: Internal stakeholders generally agree that the PI program provides some useful insights. The data supporting this metric indicate a generally stable trend for these measures when compared with previous surveys. Overall, CY 2012 survey results declined several percentage points compared with the CY 2010 survey results, but align with the previous surveys. Multiple internal stakeholders' comments challenged the PI program's ability to provide insights to help ensure plant safety and/or security. Many respondents indicated that licensees are able to manage the PIs, thereby reducing their effectiveness in revealing declining performance. Some respondents stated that the PIs do not provide useful insights or information to assess licensee performance. The staff will respond to this feedback in the consolidated response to stakeholder comments from the ROP internal survey.

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PI-5 Timely PI Data Reporting and Dissemination

- **Definition:** Within five weeks of the end of each calendar quarter, track (count) late PI postings on the NRC's external Web site. Also note the number of late submittals from licensees that did not meet the 21-day timeliness goal.
- **Criteria:** Expect few occurrences, with a stable or declining trend.

Goals Supported: Effective, Open, Predictable

The graph below presents the percentage of timely PI data updates to the ROP Web sites.



Analysis: The second quarter posting of 2012 PI data was several hours late (all PIs) due to a miscommunication between the program office and the information technology (IT) support team. The program office established an automatic notification to ensure all parties involved are reminded to post PIs in a timely manner. In addition, the IT support team established a more structured process for updating ROP Web sites.

There were six late licensee PI data submittals in CY 2012 (three in the first quarter, two in the second quarter, and one in the third quarter). Each submittal was one day (or less) late and had no significant impact on the NRC's ability to process the PI data in a timely manner.

Metric Criteria Met: No

PI-6 Stakeholders Perceive Appropriate Overlap Between the PI Program and the Inspection Program

- **Definition:** Survey external and internal stakeholders asking if appropriate overlap exists between the PI program and the inspection program.
- **Criteria:** Expect stable or increasingly positive perception over time.

Goals Supported: Effective, Open

One internal survey question addressed this metric. The table below presents the question and the resultant percentage of agreement.

Measure	2004	2006	2008	2010	2012
Pls provide an appropriate level of overlap with inspection program.	78%	78%	79%	88%	76%

Analysis: The data reflect a stable perception over time. Internal stakeholders generally agree that an appropriate overlap exists between the PI program and inspection program. The data supporting this metric indicate a generally stable trend. No comments were provided related to the PI and inspection program overlap.

PI-7 Clarity of Performance Indicator Guidance

- **Definition:** Survey external and internal stakeholders asking if Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline," provides clear guidance regarding PIs.
- **Criteria:** Expect stable or increasingly positive perception over time.

Goals Supported: Understandable, Open, Objective

Two internal survey questions addressed this metric. The table below presents the questions and the resultant percentages of agreement.

Measure	2004	2006	2008	2010	2012
Pls are clearly defined.	79%	82%	79%	80%	77%
Pls are understandable.	87%	82%	72%	78%	69%

Analysis: The data reflect a stable perception over time. Internal stakeholders continue to generally agree that PIs are clearly defined and are understandable, although the CY 2012 data reveal that survey respondents have the lowest level of agreement for both measures since 2008. The previous low in CY 2008 may have been due to the introduction of the Mitigating Systems Performance Indicator (MSPI). Numerous survey respondents stated that the MSPI indicators are too complicated and difficult to understand, and a couple of respondents stated that the guidance is poorly written with undefined and vague terminology. Revision 7 of NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," is expected to be released early in CY 2013, and may provide clarified guidance. The staff will fully review and respond to the respondents' comments in the consolidated response report.

PI-8 PI Program Contributes to the Identification of Performance Outliers in an Objective and Predictable Manner

- **Definition:** Survey external and internal stakeholders asking if the PI program effectively contributes to the identification of performance outliers based on risk-informed, objective, and predictable indicators.
- **Criteria:** Expect stable or increasingly positive perception over time.

Goals Supported: Risk-Informed, Objective, Predictable, Open

One internal survey question addressed this metric. The table below presents the question and the resultant percentage of agreement.

Measure	2004	2006	2008	2010	2012
PIs effectively contribute to the identification of performance outliers based on risk-informed, objective, and predictable indicators.	N/A	61%	65% ¹	73%	69%

¹In prior years' surveys, the staff framed this question in a context that emphasized the contribution of the MSPI to the identification of performance outliers.

Analysis: The data reflect a stable perception over time. However, many respondents stated that the PI thresholds are not set low enough and licensee's manage the PI program, which results in the inability of PIs to identify performance outliers. The staff will respond to this feedback in the consolidated response to stakeholder comments from the ROP internal survey.

II. INSPECTION PROGRAM (IP) METRICS

IP-1 Inspection Findings Documented in Accordance with Requirements

- **Definition:** Audit inspection reports in relation to program requirements (Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports") for documenting green findings, greater-than-green findings, and violations. Report the percentage of findings that meet the program requirements.
- **Criteria:** Expect a stable or improving trend in the percentage of findings documented in accordance with program requirements.





The graph below presents the percentage of audited inspection findings that were documented in accordance with IMC 0612 requirements.

Analysis: In CY 2012, the staff audited 15 inspection reports issued by the regional offices. The staff found that 98 percent of sampled findings were documented in accordance with IMC 0612 requirements. The data confirm that a stable trend has been maintained since CY 2008. Based on the very positive results of the audited inspection reports during the past five years, the staff may modify future audit sample size and sample periodicity during CY 2013.

IP-2 Completion of Baseline Inspection Program

- **Definition:** Annual completion of baseline inspection program.
- **Criteria:** Defined as per IMC 2515, "Light-Water Reactor Inspection Program Operations Phase."
- Goals Supported: Predictable, Effective
- Analysis: The inspection program was implemented to allow NRC staff to independently verify that licensees (1) operated plants safely and securely in CY 2012 and (2) identified and corrected performance issues in a timely manner in accordance with IMC 2515 and IMC 2201, "Security and Safeguards Inspection Program for Commercial Nuclear Power Reactors." Each region documented its baseline inspection program completion status in a memorandum available in the Agencywide Documents Access and Management System (ADAMS) at Accession Nos. ML13037A377 for Region I, ML13045A872 for Region II, ML13045A635 for Region III, and ML13080A243 for Region IV. Additionally, the Office of Nuclear Security and Incident Response completed all security baseline inspections in CY 2012, as documented in a non-publicly available memorandum (ML13036A276). All regions performed their baseline inspections in CY 2012 using allocated resources.

IP-3 Inspection Reports Are Timely

- **Definition:** Obtain Reactor Program System (RPS) data on the total number of reports issued and the number issued within timeliness goals as stipulated in IMC 0612, "Power Reactor Inspection Reports."
- **Criteria:** Expect 90 percent of inspection reports to be issued within program's timeliness goals.

Goals Supported: Effective, Open, Predictable



The graph below presents the percentage of inspection reports that were issued on time during this self-assessment period (CY 2012).

Calendar Quarter - Regional Averages

Analysis: During CY 2012, the NRC issued 679 inspection reports. The regions met or exceeded the inspection report timeliness goal of 90 percent in each quarter throughout the year. In CY 2012, 675 out of 679 (99 percent) inspection reports met the timeliness requirements contained in IMC 0612.

IP-4 Temporary Instructions Are Completed Timely

- **Definition:** Audit the time to complete temporary instructions (TIs) by region or Office. Compare the completion status in RPS to TI requirements. Report by region or Office the number of TIs closed within goals.
- **Criteria:** Expect all TIs to be completed within TI requirements.
- Goals Supported: Effective, Predictable
- Analysis: In CY 2012, the staff completed TI 2515/177, "Managing Gas Accumulation In Emergency Core Cooling, Decay Heat Removal and Containment Spray Systems (NRC Generic Letter 2008-01)," and TI 2515/185, "Follow-Up on the Industry's Ground Water Protection Initiative." The staff completed these TIs at all plants within the established deadlines; therefore, the metric criterion was met.

IP-5 Inspection Reports Are Relevant, Useful, and Written in Plain Language

- **Definition:** Survey external and internal stakeholders asking whether the information contained in inspection reports is relevant, useful, and written in plain English.
- **Criteria:** Expect stable or increasingly positive perception over time.
- **Goals Supported:** Effective, Understandable, Open

Seven internal survey questions addressed this metric. The table below presents the questions and the resultant percentages of agreement.

Measure	2004	2006	2008	2010	2012
The information contained in inspection reports is relevant.	N/A	N/A	88%	88%	84%
The information contained in inspection reports is useful.	N/A	N/A	77%	77%	74%
The information contained in inspection reports is written in plain English.	N/A	N/A	85%	85%	64%
The information contained in inspection reports is communicated in a timely fashion.	N/A	94%	95%	90%	86%
The information contained in inspection reports is communicated accurately.	87%	96%	93%	97%	95%
Security inspection reports and their cover letters provide sufficient information to licensees.	N/A	N/A	87%	93%	87%
Security inspection reports and their cover letters provide sufficient information to the public.	N/A	N/A	47%	53%	54%

Analysis: Internal stakeholders generally agree that inspection reports are relevant, useful, and written in plain language. The survey results show stable or positive trends over time for most measures within this metric; however, the staff noted a large decline in respondents' agreement that inspection reports are written in plain English. This result is consistent with survey results for metric AS-6 (Assessment Reports are Relevant, Useful, and Written in Plain Language) and O-3 (Stakeholders Perceive the ROP to be Understandable). Planned actions to address the results for AS-6 and O-3 are discussed in the applicable sections of this report. Some comments indicated a need for additional inspection program guidance and/or training for determining the threshold for documenting inspection findings (more-than-minor issues). Additionally, some comments indicated a need to enhance the readability of our reports and reduce the amount of boilerplate information contained in the reports. The staff will evaluate and respond to these comments in the consolidated response report.

IP-6 Inspection Program Effectiveness and Adequacy in Covering Areas Important to Plant Safety and/or Security

- **Definition:** Survey external and internal stakeholders asking whether the inspection program adequately covers areas that are important to plant safety and/or security and is effective in identifying and ensuring the prompt correction of performance deficiencies.
- **Criteria:** Expect stable or increasingly positive perception over time.

Goals Supported: Effective, Risk-Informed, Open

Nineteen internal survey questions addressed this metric. The table below presents the questions and the resultant percentages of agreement.

Measure	2004	2006	2008	2010	2012
Baseline Inspection Program appropriately inspects for and identifies risk-significant issues.	79%	89%	88%	94%	90%
Baseline inspection program leads to objective findings whose significance can be clearly documented.	73%	81%	84%	90%	85%
Baseline Inspection Program provides appropriate coverage of plant activities and operations important to safety.	77%	83%	81%	90%	89%
Baseline Inspection Program provides sufficient latitude to allow inspectors to pursue potential areas of concern (via Plant Status, PI&R samples, OpE smart samples, etc).	N/A	N/A	73%	85%	81% ¹
Baseline Inspection Program appropriately ensures the prompt correction of performance deficiencies.	N/A	N/A	71%	73%	74%
Baseline inspection procedures provide estimates that reflect the effort required to complete the procedure.	57%	65%	58%	68%	68%
Baseline inspection procedures are adequate to address intended cornerstone attributes.	86%	94%	91%	91%	89%
Baseline inspection procedures are conducted at an appropriate frequency.	84%	86%	86%	92%	91%
Baseline inspection procedures are clearly written.	73%	85%	77%	85%	69%

Baseline inspection procedures place sufficient emphasis on field observation and inspections.	N/A	83%	78% ²	86%	85%
Baseline inspection procedures adequately sample risk significant aspects of each inspected area.	80%	87%	90%	91%	85%
Baseline inspection program provides opportunities to gather insights into aspects of a licensee's safety culture.	N/A	65%	59%	74% ³	73%
Issuing NCV's and relying on licensee's corrective action program provides for an adequate approach to resolve issues of very low safety significance (i.e., green findings).	N/A	80%	84%	87%	78%
The Security baseline procedures cover all the areas important to plant security.	N/A	N/A	89%	95%	85%
The force-on-force evaluations provide a reasonable test of the plant's security force effectiveness.	N/A	N/A	78%	79%	73%
The baseline inspection resources are sufficient to gain an accurate measure of plant security performance.	N/A	N/A	80%	84%	79%
The baseline inspection procedures are conducted at an appropriate frequency.	N/A	N/A	90%	97%	85%
Baseline Inspection Program provides appropriate coverage of plant activities and operations important to security.	N/A	N/A	89%	91%	79%
The baseline inspection procedures make adequate use of operating experience to inform inspectors of issues important to safety in the inspectable areas.	N/A	N/A	N/A	72%	71%

¹ Added "OpE"

² The staff revised this question in the CY 2008 survey to shift emphasis from "planning" to "field observations and inspections."

³ Changed from "...provide adequate guidance on safety culture aspects"

Analysis: Internal stakeholders generally agree that the inspection program is effective and adequate in covering areas important to plant safety and/or security. Data from the survey shows that the majority of the measures for this metric have stable or increasing trends over time. However, there were many comments on topics covered by this metric, including the need to create more flexibility in the baseline

inspection program to allow additional inspection samples in areas where licensees' programs were observed to have weaknesses and the need to improve the clarity of some baseline inspection procedures. Additionally, some respondents commented that the ROP relies too heavily on licensees' corrective action programs to resolve issues of very low safety significance (Green). The staff will evaluate and address these comments in the consolidated response report to the ROP internal survey comments.

IP-7 Analysis of Baseline Inspection Procedures

- **Definition:** Annually, review each baseline inspection procedure to determine its effectiveness and contribution to the overall effectiveness of the baseline inspection program. The objectives of the review are: (1) to determine if changes in scope, frequency, or level of effort are needed based on recent experience, (2) to determine if a change to the estimated hours for completion is needed, (3) to define or change what constitutes minimum completion of each inspectable area, if needed, and (4) to critically evaluate all of the inspectable areas together along with the PI program to ensure that the inspectable areas are adequately monitored for safety performance. In addition, a more detailed review and realignment of inspection resources will be performed at least biennially in accordance with Appendix B, "ROP Realignment Process," to IMC 0307. The focus of this effort is to adjust existing inspection resources to improve the effectiveness of the inspection program in identifying significant licensee performance deficiencies.
- **Criteria:** None; trend only. Summarize and evaluate the individual inspection procedure reviews and propose program adjustments as necessary to address noted inefficiencies. Provide basis for any meaningful increase or decrease in procedure scope, frequency, or level of effort as a result of the review.

Goals Supported: Effective, Risk-Informed

Analysis: The staff will perform its review of each baseline inspection procedure for CY 2013 in support of the ROP enhancement initiative. The purpose of the ROP enhancement project is to revise the baseline inspection program to incorporate the needed inspection areas for the current environment, eliminate redundant or unnecessary inspection areas, maximize efficient and effective use of resources, and incorporate flexibility where appropriate. This process should provide a validation of the basic philosophy and key principles of the baseline inspection program and allow changes where necessary. This in-depth baseline inspection program effectiveness review encompasses all baseline inspection procedures across the ROP cornerstones (Initiating Events, Mitigation Systems, Barrier Integrity, Occupational Radiation Safety, Public Radiation Safety, Emergency Preparedness, and Security). The staff plans to make changes to the inspection procedures (IPs) during summer and fall of 2013, with the goal of implementing the revised IPs in CY 2014.

III. SIGNIFICANCE DETERMINATION PROCESS METRICS

SDP-1 The Significance Determination Process (SDP) Results Are Predictable and Repeatable and Focus Stakeholder Attention on Significant Safety Issues

- **Definition:** Annually, audit a representative sample (up to four per region) of inspection findings against the standard criteria set forth in IMC 0609, "Significance Determination Process," and its appendices. To the extent available, samples should include potentially greater-than-green findings that were presented to the Significance Determination Process/Enforcement Review Panel (SERP). Findings should contain sufficient detail to enable an independent auditor to trace through the available documentation and reach the same significance color characterization.
- **Criteria:** The target goal is that at least 90 percent of SDP results are determined to be predictable and repeatable. Any SDP outcomes determined to be non-conservative will be evaluated and appropriate programmatic changes will be implemented.
- Goals Supported: Risk-Informed, Predictable
- Analysis: There were 27 findings that had greater-than-green significance in CY 2012. The staff audited two findings from each region for a representative sample of eight findings having greater-than-green significance. The final risk significance of each finding was evaluated using the applicable appendix of IMC 0609 and other pertinent guidance. The documentation of the final risk characterization of each finding included adequate detail to support the final risk significance determination; therefore, the final risk significance of each finding was predictable and repeatable. The staff determined that 100 percent of samples chosen for review were predictable and repeatable.

SDP-2 SDP Outcomes Are Risk-Informed and Accepted by Stakeholders

- **Definition:** Track the total number of appeals of final SDP results.
- **Criteria:** Expect zero appeals of SDP significance findings that result in a final determination being overturned across all regions. All successful appeals will be assessed to determine causal factors and to recommend process improvements.
- Goals Supported: Risk-Informed, Objective, Predictable
- Analysis: There were no appeals for findings of white, yellow, or red significance in CY 2012. The metric is met since there were no successful appeals of significance determinations.

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

- **Definition:** Survey internal stakeholders by using specific quantitative survey questions that focus on training, effectiveness, and efficiency.
- **Criteria:** Expect stable or increasingly positive perception over time.
- Goals Supported: Effective, Understandable, Risk-Informed

Nine internal survey questions addressed this metric. The table below presents the questions and the resultant percentages of agreement.

Measure	2004	2006	2008	2010	2012
The inspection staff is proficient in using the Reactor safety screening questions and follow-on screening tools (in some SDP appendices, they are referred to as 'Phase 1 and Phase 2,' respectively).	36%	54%	63%	82% ¹	82%²
The inspection staff is proficient in using the Non-reactor safety screening questions and follow-on screening tools (in some SDP appendices, they are referred to as 'Phase 1 and Phase,' respectively).	41%	57%	57%	71% ³	76%⁵
Initial and/or periodic training is effective in understanding and using the SDPs.	38%	56%	55%	73% ⁴	57%
Program guidance documents are adequate in understanding and using the SDPs.	41%	63%	66%	76% ⁵	74%
Resources (time and personnel, documentation, etc) expenditures are appropriate.	41%	60%	68%	69%	69%
SDP focuses NRC attention on safety-significant issues.	75%	83%	85%	85%	80%
SDP provides the basis for effective communication of inspection findings to the LICENSEE.	78%	84%	83%	87%	86%
SDP provides the basis for effective communication of inspection findings to the PUBLIC.	60%	73%	68%	70%	66%
SDP focuses appropriate NRC attention on security - significant issues.	N/A	N/A	83%	84%	83%

¹ Question changed in CY2010 from "Reactor Safety SDPs are easy to use. ² Added "...screening questions and follow-on screening tools (in some SDP appendices they are referred to as 'Phase 1 and Phase 2', respectively)."

³ Question changed in CY 2010 from "Non-reactor safety SDPs are easy to use."

- ⁴ Question changed in CY2010 from "SDP training is effective."
- ⁵ Question changed in CY2010 from "Program guidance documents are clear."
- **Analysis:** The data reflect a generally positive perception and a majority of the internal stakeholders indicated that they are proficient in using the reactor safety and nonreactor safety SDPs. The response was consistent with the previous survey regarding whether the SDP focuses on safety issues, contributes to effective communications with the licensee and public, and uses the appropriate resources. However, there was a noticeable decline from the 2010 survey in stakeholder agreement that SDP training is effective in understanding and using the SDPs (16 percent). In addition, there were four comments in the SDP portion of the internal survey that suggested the need for more SDP training. The staff has contacted various internal stakeholders to better understand the specific training deficiencies such that appropriate training tools can be developed.

SDP-4 The SDP Results in an Appropriate Regulatory Response to Performance Issues

- **Definition:** Survey external and internal stakeholders asking if the SDP results in an appropriate regulatory response to performance issues.
- **Criteria:** Expect stable or increasingly positive perception over time.
- Goals Supported: Understandable, Objective, Predictable, Open

Four internal survey questions addressed this metric. The table below presents the questions and the resultant percentages of agreement.

Measure	2004	2006	2008	2010	2012
Results from the SDP provide for an appropriate regulatory response to deficient performance (i.e., findings).	N/A	N/A	77%	83%	81%
Results from the SDP are consistent and repeatable.	N/A	74%	74% ¹	74%	71%
Results from the SDP are predicable and understandable.	N/A	N/A	68%	74%	69%
Management correctly uses SDP to make risk-informed decisions.	N/A	N/A	N/A	79%	68%

¹ The staff revised this measure in CY 2008 to include the word "repeatable."

Analysis: Internal stakeholders continue to generally agree that SDP results provide an appropriate regulatory response to performance issues. However, three out of four survey questions that support the metric have three years or less of data. The question regarding the correct use of the SDP by managers to make risk-informed decisions only has two years of data; nevertheless, agreement decreased by 11 percent. A SDP project team charted in September of 2012 to review SDP resource and timeliness data is currently looking into this issue and will provide recommendations by the end of CY 2013.

SDP-5 Resources (Direct Charges and Support Activities) Expended Are Appropriate

- **Definition:** Track the percentage of total resource expenditures attributed to SDP activities to determine the effort expended by the regions in completing SDP evaluations as a percentage of the total regional direct inspection effort (DIE).
- **Criteria:** Total SDP expenditures should not exceed 10 percent of the total regional DIE and should show a stable or declining trend.

Goals Supported: Effective, Predictable

The chart below presents the percentage of SDP resource expenditures to total DIE per region.



Analysis: Regional expenditures associated with SDP evaluations remain below the threshold of 10 percent of the total DIE. The national average has slightly increased over the past 4 years, however, from CY 2011 to CY 2012, the national average declined slightly by 1.25 percent. The regional contributions to the national average are reflected in the chart above.

SDP-6 Final Significance Determinations Are Timely

- **Definition:** Conduct a quarterly audit of RPS data to identify the total number of inspection items finalized as greater-than-green that were under review for more than 90 days since:
 - (1) the date of initial licensee notification of the preliminary significance in an inspection report, or
 - (2) the item was otherwise documented in an inspection report as an apparent violation pending completion of a significance determination and not counted in the above category.
- **Criteria:** At least 90 percent of all SDP results that are counted per the criteria above should be finalized within 90 days. All issues older than 90 days will be assessed to determine causal factors and to recommend process improvements.

Goals Supported: Effective, Open, Predictable

The graph below presents the percentage of SDP results that were completed within 90 days.



Analysis: All but 3 of the 30 greater-than-green findings in CY 2012 met the 90-day goal. The 3 greater-than-green findings that surpassed the 90-day goal were associated with a single inspection finding that affected 3 units and exceeded the goal by 2 days. Final significance determinations have been consistently completed on time for the past 7 years.

IV. ASSESSMENT PROGRAM METRICS

- AS-1 Actions Are Determined by Quantifiable Assessment Inputs (i.e., PIs and SDP Results) and Are Commensurate with the Risk of the Issue and Overall Plant Risk
- **Definition**: Audit all assessment-related letters and count the number of Action Matrix deviations. Evaluate the causes of these deviations and identify changes to the ROP, if any, to improve the guidance documents.
- **Criteria:** Expect few deviations, with a stable or declining (i.e., improving) trend.

Goals Supported: Objective, Risk-Informed, Open

The table below shows the number of new and renewed deviations in effect each year since CY 2004.

CY	2004	2005	2006	2007	2008	2009	2010	2011	2012
New Deviations	2	3	1	1	0	0	3	0	2
Renewed Deviations	1	1	2	2	1*	0	0	0	0

*This deviation was renewed in December 2008 and was in effect in CY 2009.

Analysis: Two new Action Matrix deviations were opened in CY 2012. On September 5, 2012, the EDO approved a deviation from the ROP Action Matrix to provide increased resources for the oversight of the Seabrook Station related to the degradation of safety-related concrete structures because of the alkali-silica reaction (ASR). On May 16, 2012, the NRC issued a Confirmatory Action Letter (CAL) to confirm commitments made by the licensee regarding the ASR concrete degradation issue. The staff will perform additional inspection and analysis to support the review of licensee commitments and planned large-scale concrete specimen testing. The additional resources will also be used to develop staff technical guidance and communicate with stakeholders via outreach activities. The staff anticipates closure of the deviation memo when the NRC has concluded (1) that all CAL commitments have been satisfactorily completed, and (2) an acceptable basis has been established to ensure that the continued operability of concrete structures will be maintained.

On November 8, 2012, the EDO approved a deviation from the ROP Action Matrix to provide increased resources for the oversight of the Palisades plant related to safety culture issues at the site and also technical issues for which initial NRC review revealed no immediate safety concerns. The increased inspection is needed to ensure that the licensee is (1) implementing appropriate corrective actions to improve the organization and strengthen the safety culture on-site, and (2) assessing the sustainability of these actions. Furthermore, the additional inspection is needed to ensure that planned actions for the technical issues are effective, so these issues will not lead to more significant safety concerns. The staff also expects to conduct enhanced communication with the communities in southwest Michigan regarding the NRC's mission, the status of site improvement initiatives, and resolution of technical issues at Palisades.

Because the number of deviations is stable and few, the staff considers this metric met. However, both of these deviations involve additional resources to resolve issues unrelated to inputs to performance, and neither deviation resulted in a transition in the Action Matrix. As a result, numerous internal stakeholders questioned the appropriateness of these deviations. The staff has submitted ROP Feedback Forms 0305-1815 and 0305-1868 to allow the regions to publically document the application of additional inspection resources within the baseline inspection program and thereby reserve the Action Matrix deviation process solely for regulatory action that is inconsistent with the range of actions described in the pertinent column of the Action Matrix. Additionally, the ROP Enhancement effort may lead to additional actions for improvement in the Action Matrix Deviation process.

- AS-2 Number and Scope of Additional Actions Recommended as a Result of the Agency Action Review Meeting Beyond Those Actions Already Taken Are Limited
- **Definition**: Review the results of the Agency Action Review Meeting (AARM).
- **Criteria:** Expect few additional actions, with a stable or declining (i.e., improving) trend.
- Goals Supported: Understandable, Predictable, Objective
- Analysis: The AARM was held on April 25, 2012, in Bethesda, MD. After reviewing the ROP self-assessment results, the completed or planned courses of action, and continued improvement to the safety and security PIs, NRC senior managers determined that the ROP is meeting the agency's strategic goals. Based on the AARM discussions, NRC senior managers determined that no actions beyond those already planned for reactor facilities were necessary.

AS-3 Assessment Program Results (Assessment Reviews, Assessment Letters, and Public Meetings) Are Completed in a Timely Manner

- **Definition**: Track the number of instances in which the timeliness goals stipulated in IMC 0305, "Operating Reactor Assessment Program," were not met for (1) the conduct of quarterly, mid-cycle, and end-of-cycle reviews, (2) the issuance of assessment letters, and (3) the conduct of public meetings.
- **Criteria:** Expect few instances in which timeliness goals were not met, with a stable or declining trend.

Goals Supported: Effective, Open, Predictable



The graph below presents the number of untimely actions per calendar year.

Analysis: Timeliness goals for assessment-related activities include the following: (1) quarterly reviews are completed within five weeks of the end of the first and third quarters, (2) mid-cycle reviews are completed within seven weeks of the end of the second quarter, (3) end-of-cycle reviews are completed within seven weeks of the end of the fourth quarter, (4) assessment letters are issued within two weeks of the quarterly review and within nine weeks of the mid-cycle and end-of-cycle reviews, and (5) public meetings are completed within 16 weeks of the end of the assessment period.

Of all the aforementioned activities, all but two of the assessment results met the timeliness goals. Because there were only two occurrences when the timeliness goal was not met and the trend is stable over time, this metric is met.

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AS-4 The NRC's Response to Performance Issues Is Timely

- **Definition**: Count the number of days between issuance of an assessment letter discussing an issue having more than very low safety significance and completion of the supplemental inspection (by exit meeting date, not issuance of the inspection report).
- **Criteria:** Expect a stable or declining trend.

Goals Supported: Effective, Predictable

The chart below presents the average number of days between the issuance of the assessment letter and the completion date of the supplemental inspection for safety-significant findings per calendar quarter.



Calendar Year

Analysis: The average time elapsed in CY 2012 was higher than the yearly average of all prior years. To be consistent with metric determinations from prior years, the staff considers this metric not met. Although delays in performing the supplemental inspections were often caused by the licensee not being ready for the inspection, regulatory actions need to be timely. The staff will add guidance to the next revision of IMC 0305, "Operating Assessment Program," to emphasize that supplemental inspections should be completed in a timely manner. The staff acknowledges that licensees play a significant role in the timely completion of supplemental inspections, which are not initiated until the licensee indicates its readiness. As part of its ROP Enhancement effort, the staff plans to examine additional ways to encourage the timely completion of supplemental inspections.

Metric Criteria Met: No

AS-5 The NRC Takes Appropriate Actions To Address Performance Issues

- **Definition:** Survey external and internal stakeholders asking whether the NRC takes appropriate actions to address performance issues for those plants outside the Licensee Response Column of the Action Matrix.
- **Criteria:** Expect stable or increasingly positive perception over time.

Goals Supported: Effective, Understandable, Open

Thirteen internal survey questions address this metric, plus and additional three for the security assessment program (which was separate for the first half of CY2012). The table below presents the questions and the resultant percentages of agreement.

ROP Assessment Measures	2002	2004	2006	2008	2010	2012
The assessment process provides an appropriate range of regulatory actions in response to safety issues.	78%	80%	89%	92%	86%	88%
The assessment process provides for timely resolution of issues commensurate with safety significance.	N/A	N/A	74%	80%	75%	76%
The assessment process properly incorporates enforcement actions.	N/A	N/A	82%	84%	82%	82%
The assessment process focuses resources on areas of greatest safety significance.	80%	81%	78%	82%	85%	85%
The assessment process minimizes duplication/rework in preparation for assessment meetings (i.e., mid-cycle, end-of- cycle, agency action review, public meetings).	N/A	N/A	65%	59%	68%	64%
The assessment process provides objective assessments of licensee performance.	78%	84%	88%	81%	89%	79%
The assessment process provides understandable regulatory guidance to assess licensee performance.	76%	77%	91%	81%	82%	77%

The assessment process uses appropriate actions to address performance issues for those licensees outside of the Licensee Response Column of the Action Matrix.	80%	85%	87%	87%	89%	86%
The assessment process provides sufficient attention to licensees whose performance is in the Licensee Response Column (i.e., appropriateness of the baseline inspection and performance indicators for these licensees).	76%	81%	88%	88%	89%	89%
The assessment process establishes reasonable timeliness goals for documentation, data collection, etc.	N/A	N/A	89%	85%	85%	85%
Security Assessment Measures	2002	2004	2006	2008	2010	2012
The security assessment process						
provides an appropriate range of regulatory actions in response to security issues.	N/A	N/A	N/A	88%	89% ¹	86%
provides an appropriate range of regulatory actions in response to security issues. The security assessment process provides for timely resolution of issues commensurate with security significance.	N/A N/A	N/A N/A	N/A N/A	88% 89%	89% ¹ 80% ¹	86%

¹ Added 'security' in front of assessment for clarity.

Analysis: Internal stakeholders continued to generally agree that the NRC takes appropriate actions to address performance issues and the data shows stable trends over time. However, one area that has consistently scored lower than most areas is minimizing the duplication of work in preparation for the assessment meetings. The assessment meeting guidance provides flexibility for the regions to ensure that meetings are run as efficiently as possible and will not be changed at this time. Regional management may request additional information beyond what is required by governing guidance. The program office will continue to afford flexibility to conduct assessment meetings as the regional leadership deems necessary.

AS-6 Assessment Reports Are Relevant, Useful, and Written in Plain Language

- **Definition**: Survey external and internal stakeholders asking whether the information contained in assessment reports is relevant, useful, and written in plain English.
- **Criteria:** Expect stable or increasingly positive perception over time.

Goals Supported: Understandable, Effective, Open

Five internal survey questions address this metric. The table below presents the questions and the resultant percentages of agreement.

Measure	2002	2004	2006	2008	2010	2012
The information contained in the assessment letters is relevant.	N/A	N/A	N/A	90%	88%	84%
The information contained in the assessment letters is useful.	N/A	N/A	N/A	79%	78%	69%
The information contained in the assessment letters is written in plain English.	N/A	N/A	N/A	83%	84%	70%
The information contained in the assessment letters is communicated in a timely fashion.	N/A	N/A	N/A	90%	86%	82%
The information contained in the assessment letters is communicated accurately.	N/A	N/A	N/A	94%	97%	90%

Analysis: The data supporting this metric indicate a declining perception over time so the staff considers this metric not met. This result is consistent with survey results for metric O-3 (Stakeholders Perceive the ROP to be Understandable) and a measure within metric IP-5 (Inspection Reports Are Relevant, Useful, and Written in Plain Language). Planned actions to address the results for O-3 and IP-5 are discussed in the applicable sections of this report. During the next year, the staff will consider ways to make assessment letters more relevant and useful and rewrite the templates using more plain language. The staff has initiated ROP feedback form 0305-1869 to track this action. The staff will engage internal stakeholders to gain additional insights and clarification on stakeholder concerns in the areas measured by this metric.

Metric Criteria Met: No

AS-7 Degradations in Plant Performance Are Gradual and Allow Adequate Agency Engagement of the Licensees

- **Definition**: Track the number of instances each quarter in which plants move more than one column to the right in the Action Matrix (as indicated on the Action Matrix Summary).
- **Criteria:** Expect few instances in which plant performance causes a plant to move more than one column to the right in the Action Matrix. Provide a qualitative explanation of each instance in which this occurs. Expect a stable or declining trend.

Goals Supported: Risk-Informed, Predictable

The graph below shows the number of units that moved more than one column to the right in the Action Matrix per calendar quarter.



Analysis: In CY 2012, six units moved from Column 1 to Column 3. Because of the high number of units crossing multiple columns, the staff considers this metric not met. An explanation for this high number is that one finding caused three units to move two columns in the action matrix because the finding was a site-wide issue.

The staff notes that the ROP was not expected to preclude plants from crossing more than one column to the right in the Action Matrix. The ROP was designed to provide adequate margin in the assessment of licensee performance so that appropriate licensee and NRC actions are taken before unacceptable performance occurs (SECY-99-007). Therefore, this metric does not indicate whether or not the ROP is functioning as it was originally intended. This metric will be revised in early CY 2013 to more accurately measure the goals of the ROP, and the updated metric will be used for the CY 2013 metric analysis.

Metric Criteria Met: No

AS-8 Perceived Effectiveness of Safety Culture Enhancements to ROP

- **Definition:** Survey external and internal stakeholders asking whether the ROP safety culture enhancements help in identifying licensee safety culture weaknesses and focusing licensee and NRC attention appropriately.
- **Criteria:** Expect stable or increasingly positive perception over time.

Goals Supported: Effective, Open

The internal survey questions were revised from the 2008 survey to solicit feedback about specific aspects of the ROP safety culture enhancements. The table below presents the questions and the resultant percentages of agreement.

ROP Cross-Cutting Process Measure	2002- 2008	2010	2012
The cross-cutting issue process provides insights into a licensee's safety culture.	~68%	66%	69%
The cross-cutting issue process supports the objectives of the ROP (risk-informed, objective, predictable and understandable).	N/A	66%	62%
The thresholds for requesting a licensee to perform a safety culture assessment in response to long- standing substantive cross-cutting issues are appropriate.	N/A	71%	66%
The ROP provides adequate guidance for evaluating safety culture assessments performed in response to long-standing substantive cross- cutting issues.	N/A	53%	55%
ROP Safety Culture-Related Guidance Measure	2002- 2008	2010	2012
The ROP safety culture-related guidance helps identify licensee safety culture weaknesses.	~60%	62%	56%
The ROP safety culture-related guidance helps focus licensee and NRC attention appropriately.	~60%	64%	60%
Adequate resources (time and personnel) are available to implement the ROP safety culture-related guidance.	N/A	55%	58%

The ROP safety culture-related guidance meets the objectives of the ROP (risk-informed, objective, predictable and understandable).	N/A	65%	58%
Supplemental Inspection Procedure Measure	2002- 2008	2010	2012
Adequate guidance for reviewing the licensee's evaluation of the safety culture components.	~68%	72%	71%
Adequate guidance for evaluating licensees' safety culture assessments.	N/A	68%	62%
Adequate guidance for performing safety culture assessments.	N/A	62%	63%

Analysis: Internal stakeholders continue to generally agree that the safety culture enhancements to the ROP are effective. The staff noted a decrease in agreement for many measures since the last internal survey in CY2010 and recognizes there is room for improvement. However, some survey questions for this metric have limited data and the staff will continue to evaluate these measures for meaningful trends in the future. Since 2010, there have been only minor changes to inspection procedures and guidance documents. However, the staff did include a Safety Culture Assessor Qualification Card in the Inspection Manual Chapter 1245 set of inspector qualifications. This qualification program will allow a greater number of staff to be trained and qualified to review and conduct safety culture assessments, such as those required by IP 95002 and 95003. In addition, the staff has been working with the Technical Training Center to enhance and update existing training courses with more detailed information about safety culture and how to assess it.

> In addition to these activities, the NRR engaged the Institute for Nuclear Power Operations (INPO), the Nuclear Energy Institute (NEI) and other external stakeholders to develop a common safety culture language. This language, which was finalized in early CY 2013, aligns the industry's language and NRC's language to allow for a shared characterization of licensee performance. The staff will update ROP guidance and inspection documents to incorporate the new common safety culture language.

V. OVERALL REACTOR OVERSIGHT PROCESS METRICS

O-1 Stakeholders Perceive the ROP To Be Predictable and Objective

- **Definition:** Survey external and internal stakeholders asking if ROP oversight activities are predictable (i.e., controlled by the process) and reasonably objective (i.e., based on supported facts, rather than relying on subjective judgment).
- **Criteria:** Expect a stable or increasingly positive perception over time.

Goals Supported: Objective, Predictable, Effective, Open

Three internal survey questions addressed this metric. The table below presents the questions and the resultant percentages of agreement.

Measure	2004	2006	2008	2010	2012
ROP generally is reasonably objective (i.e., based on supported facts, rather than relying on subjective judgment).	81%	88%	87%	94% ¹	87%
ROP generally is predictable (well controlled by the process) to oversight.	73%	88%²	91%	91% ³	86%
ROP generally is a consistent approach to oversight	84%	85% ³	85%	91%	84%

¹ Changed from "...provides appropriate objectivity to the process."

² In prior years' surveys, the staff framed these two questions in the context of comparing the attributes with the previous oversight process. ³ Changed from ", provides a predictable approach to everyight"

- ³ Changed from "...provides a predictable approach to oversight"
- **Analysis:** Internal stakeholders continue to generally agree that the ROP is predictable and objective. The staff noted a slight decrease in agreement for all three measures since the last internal survey in CY 2010; however, the data trends show increasingly positive perception over time. Additionally, survey comments indicated that respondents perceived the ROP to be predictable and objective.

O-2 Stakeholders Perceive the ROP To Be Risk-Informed

- **Definition:** Survey external and internal stakeholders asking if the ROP is risk-informed, in that actions and outcomes are appropriately graduated on the basis of increased significance.
- **Criteria:** Expect stable or increasingly positive perception over time.
- Goals Supported: Risk-Informed, Effective, Open

Two internal survey questions addressed this metric. The table below presents the questions and the resultant percentages of agreement.

Measure	2004	2006	2008	2010	2012
ROP generally provides an effective risk- informed approach to oversight	74%	79%	83%	89%	86%
ROP generally is risk-informed (actions and outcomes that are appropriately graduated on the basis of increased significance).	N/A	N/A	N/A	89%	90%

Analysis: Internal stakeholders generally agree that the ROP provides an effective, riskinformed approach to oversight and that actions are appropriate at each risksignificance level. The trend for metric reveals an increasingly positive perception over time; however, one of the two survey questions supporting the metric has limited data. The staff will continue to evaluate both measures for meaningful trends in future surveys.

O-3 Stakeholders Perceive the ROP To Be Understandable

- **Definition:** Survey external and internal stakeholders asking if the ROP is understandable and if the processes, procedures, and products are clear and written in plain English.
- **Criteria:** Expect stable or increasingly positive perception over time.
- Goals Supported: Understandable, Effective, Open

Six internal survey questions addressed this metric. The table below presents the questions and the resultant percentages of agreement.

Measure	2004	2006	2008	2010	2012
The ROP generally communicates effectively through use of plain English in official correspondence (e.g., inspection reports, assessment reports, letters to licensees).	79%	82%	86%	88%	71%
The information on plant performance (e.g., inspection reports, PI data, PIM data, etc.)provided on the ROP Web page is timely.	N/A	94%	91%	82%	79%
The information on plant performance provided on the ROP Web page is understandablewritten in plain English.	89%	93%	88%	86%	81%
The information on plant performance provided on the ROP Web page is accurate.	N/A	95%	95%	91%	90%
The information on plant performance provided on the ROP Web page is adequate to keep NRC internal stakeholders informed.	N/A	94%	89%	90%	84%
The information on plant performance provided on the ROP Web page is organized for easy retrieval.	N/A	87%	81%	78%	77%

Analysis: Internal stakeholders continue to generally agree that the ROP is understandable and written in plain English; however, all measures for this metric have decreasing trends over time. For two consecutive internal surveys, there has been a decline in agreements on the timeliness, accuracy, ease of retrieval, and understandability of information presented in the ROP Web page. The staff is working with information technology support staff to identify and implement improvements to the ROP Web page.

Additionally, the staff noticed a significant decline in respondents' view of the effectiveness of ROP communications. As part the ROP Enhancement Initiative, the staff is developing enhanced communication tools for the ROP that are more oriented to the public. The staff developed a pocket-sized, plain-language brochure about the ROP, NUREG-BR-0508, "Reactor Oversight Process," to be handed out at public meetings and other forums. The staff presented a poster illustrating the ROP framework and recent ROP activities during the 2013 Regulatory Information Conference (RIC) and manned the station to answer questions and distribute ROP brochures. The staff also is in the process of revising NUREG-1649, "Reactor Oversight Process," which is written in plain language and provides more detailed information about the ROP.

Metric Criteria Met: No

O-4 Stakeholders Perceive that the ROP Provides Adequate Regulatory Assurance that Plants are Operated and Maintained Safely and Securely

- **Definition:** Survey external and internal stakeholders asking if the ROP provides adequate regulatory assurance, when combined with other NRC regulatory processes, that plants are being operated and maintained safely and securely.
- **Criteria:** Expect stable or increasingly positive perception over time.

Goals Supported: Effective, Open

Three internal survey questions addressed this metric. The table below presents the questions and the resultant percentages of agreement.

Measure	2004	2006	2008	2010	2012
The ROP generally provides appropriate assurance that plants are being operated safely.	84%	90%	89%	90%	87%
The ROP generally focuses regulatory attention to licensees with performance problems.	81%	88%	88%	90%	82%
The ROP generally identifies declining safety performance before there's a significant reduction in safety margins.	57%	68%	73%	74%	65%

Analysis: Internal stakeholders continue to generally agree that the ROP maintains safety. The staff noted a decrease in agreement for all three measures since the last internal survey in CY 2010; however, the long-term trends are positive over time.

Some internal stakeholders expressed concerns regarding the ability of the ROP to identify declining safety performance before there is a significant reduction in safety margins. The staff submitted ROP Feedback Form 0305-1875 to solicit additional insights and clarification on concerns regarding this measure.

O-5 Stakeholders Perceive the ROP To Be Effective (e.g., High Quality, Efficient, Realistic and Timely)

- **Definition:** Survey external and internal stakeholders asking whether NRC actions related to the ROP are high quality, efficient, realistic, and timely.
- **Criteria:** Expect stable or increasingly positive perception over time.

Goals Supported: Effective, Open

Four internal survey questions addressed this metric. The table below presents the questions and the resultant percentages of agreement.

Measure	2004	2006	2008	2010	2012
The ROP generally provides a realistic approach to oversight.	75%	84%	86%	93%	88%
The ROP generally has a timely approach to oversight.	67%	79% ¹	90%	88%	81%
The ROP generally is efficient and effective.	71%	77% ¹	78%	80%²	72%
The ROP appropriately captures relevant operating experience and incorporates it into the ROP.	N/A	N/A	N/A	86%	79%

¹ In prior years' surveys, the staff framed these two questions in the context of comparing the attributes with the previous oversight process.

² Changed from "... provides appropriate efficiency and effectiveness to the oversight process "

Analysis: Most internal stakeholders agree that the ROP provides a realistic, timely, efficient, and effective approach to oversight. The staff noticed a decrease in agreement for all measures since the last internal survey in CY2010, but the data trend shows increasingly positive perception over time for three out of the four measures. One survey question supporting this metric has limited data and the staff will continue to evaluate this measure for a meaningful trend in future surveys.

O-6 Stakeholders Perceive That the ROP Ensures Openness

- **Definition:** Survey external and internal stakeholders asking if the ROP ensures openness in the regulatory process.
- **Criteria:** Expect stable or increasingly positive perception over time.

Goals Supported: Open, Effective

Two internal survey questions addressed this metric. The table below presents the questions and the resultant percentages of agreement.

Measure	2004	2006	2008	2010	2012
The ROP generally provides sufficient information to keep the public informed of the agency oversight activities related to the plants	77%	89%	85%	89%	82%
The ROP generally allows appropriate communication between inspectors and licensees	86%	95%	93%	94% ¹	91%

¹ Changed from "...provides appropriate inspector and licensee communication"

Analysis: Internal stakeholders continue to generally agree that the ROP ensures openness. The staff noted a slight decrease in agreement for both measures since the last internal survey in CY 2010; however, the data trend reveals increasingly positive perception over time.

0-7 Opportunities for Public Participation in the Process

- **Definition:** Survey external and internal stakeholders asking if there are sufficient opportunities for the public to participate in the process.
- **Criteria:** Expect stable or increasingly positive perception over time.

Goals Supported: Open, Effective

Two internal survey questions addressed this metric. The table below presents the questions and the resultant percentages of agreement.

Measure	2004	2006	2008	2010	2012
The ROP generally provides sufficient opportunities for the public to participate in the process	N/A	N/A	N/A	86%	79%
The ROP generally provides sufficient opportunities for internal stakeholders to participate in the process	N/A	N/A	N/A	92%	87%

Analysis: This metric reveals a generally positive perception. Although there was a decrease in agreement for both measures since the last internal survey in CY 2010, both survey questions supporting the metric provide limited data. The staff will continue to evaluate the measures for meaningful trends in future surveys. Additionally, survey comments revealed general agreement that sufficient opportunities exist for both the public and internal stakeholders to participate in the Reactor Oversight Process.

O-8 Stakeholders Perceive the NRC To Be Responsive to Their Inputs and Comments

- **Definition:** Survey external and internal stakeholders asking if the NRC is responsive to the public's inputs and comments on the ROP.
- **Criteria:** Expect stable or increasingly positive perception over time.

Goals Supported: Open, Effective

Four internal survey questions addressed this metric. The table below presents the questions and the resultant percentages of agreement.

Measure	2004	2006	2008	2010	2012
Responses to feedback forms in the ROP Feedback Process (IMC 0801) are timely.	47%	50%	58%	65% ¹	51%
Responses to feedback forms in the ROP Feedback Process (IMC 0801) provides sufficient staff interaction.	N/A	N/A	N/A	72%	68%
Responses to feedback forms in the ROP Feedback Process (IMC 0801) provides effective feedback resolution and inspection program changes.	N/A	N/A	N/A	71%	67%
Responses to feedback forms in the ROP Feedback Process (IMC 0801) result in effective program changes.	N/A	N/A	N/A	68%	62%

¹ Changed from "Responses from feedback forms sent to headquarters are timely"

Analysis: Internal stakeholders generally agree that the agency is responsive to their feedback and input. However, the staff noted a significant decrease in agreement with the timeliness of responses to feedback forms since the last internal survey was conducted in CY 2010 and the relatively low agreement with the measures for this metric, as compared to measures for other metrics. The staff submitted ROP Feedback Form 0801-1873 to revise IMC 0801, "ROP Feedback Process," with timeliness goals for responding to feedback forms.

Metric Criteria Met: No

O-9 Stakeholders Perceive That the ROP Is Implemented as Defined

- **Definition:** Survey external and internal stakeholders asking if the ROP has been implemented as defined by program documents.
- **Criteria:** Expect stable or increasingly positive perception over time.

Goals Supported: Predictable, Understandable, Open

One internal survey question addressed this metric. The table below presents the question and the resultant percentage of agreement.

Measure	2004	2006	2008	2010	2012
The ROP generally is implemented consistently as defined by program documents.	N/A	N/A	N/A	84%	72%

Analysis: The data supporting this metric indicate a positive perception that the ROP is implemented consistently as defined by program documents. However, the staff noted a significant decrease in agreement for this measure, and some internal stakeholders expressed concerns that various aspects of the ROP are not implemented consistently throughout the agency. The staff will respond to these comments in the consolidated report. Additionally, because the survey question that supports the metric has limited data, the staff will continue to evaluate this measure for a meaningful trend in future surveys.

Metric Criteria Met: No

O-10 Stakeholders Perceive That the ROP Does Not Result in Unintended Consequences

- **Definition:** Survey external and internal stakeholders asking if the ROP results in unintended consequences.
- **Criteria:** Expect stable or increasingly positive perception over time.

Goals Supported: Effective, Open

Three internal survey questions addressed this metric. The table below presents the questions and the resultant percentages of agreement.

Measure	2004	2006	2008	2010	2012
The ROP generally ensures that there will be no un-intended consequences.	N/A	N/A	64%	65%	54%
The ROP generally allocates sufficient resources needed to oversee licensees.	N/A	75%	74%	74% ¹	72%
The ROP generally encourages the licensees to self-improve.	N/A	67%	82%	78%²	79%

¹ Changed from "...provides appropriate resources needed to oversee licensees"

² Changed from "...provides encouragement to the licensees for self improvement"

Analysis: The data for this metric reflect a generally positive perception. The staff noted a large decrease in agreement that the ROP does not cause unintended consequences since the last internal survey in CY 2010; however, this measure has limited data and the staff will continue to evaluate this measure in future surveys for meaningful trends. The measure for ROP resources showed an approximately stable trend and the measure for licensee self-improvement showed a positive trend over time. Within survey comments, some internal stakeholders expressed concerns regarding insufficient resources. The staff will respond to feedback in the consolidated response to stakeholder comments from the ROP internal survey.

O-11 Analysis of the NRC's Responses to Significant Events

- **Definition:** Review reports from incident investigation teams (IITs) and augmented inspection teams (AITs) to collect lessons learned regarding ROP programmatic deficiencies (i.e., did the baseline inspection program inspect this area? did the SDP accurately characterize resultant findings?). IITs already have the provision to determine NRC program deficiencies. The Office of Nuclear Reactor Regulation/Division of Inspection and Regional Support will review AITs to identify any weaknesses.
- **Criteria:** Expect no major programmatic voids.

Goals Supported: Effective, Predictable

Analysis: The NRC conducted no IITs and three AITs in CY 2012 at Wolf Creek, San Onofre, and River Bend. The staff did not identify any lessons learned regarding ROP programmatic deficiencies from the reactive inspections at Wolf Creek and River Bend. The lessons learned from the San Onofre AIT have not been completed but the staff does not expect ROP programmatic deficiencies will be identified based on a preliminary review of the inspection report.

O-12 Analysis of Inspection Hours and Resource Expenditures

- **Definition:** Annually, collect and analyze resource data (e.g., DIE, preparation and documentation, plant status hours) for baseline, supplemental/plant-specific, and safety issues inspections, and other ROP activities.
- **Criteria:** (1) Significant deviations are not expected on an annual basis. Explore reasons for any deviations that may be evident.
 - (2) Track and trend resource usage for the baseline inspection program and supplemental/plant-specific inspections. Analyze causes of any significant departure from established trend.
 - (3) Track and trend resource usage for preparation, documentation, and other ROP activities and assess the effects on budgeted resources.

NOTE: This metric is intended primarily for tracking and trending resource usage for the ROP. The results are used to improve the efficiency and effectiveness of the ROP and to make management and budget decisions. A detailed ROP resource analysis is included in the annual Commission paper on ROP self-assessment.

Goals Supported: Effective, Predictable

Analysis: Overall staff effort in CY 2012 remained consistent with CY 2010 and CY 2011 resource expenditures.

Baseline inspection hours include direct inspection effort, baseline inspection and documentation, and plant status activity. Baseline inspection hours decreased slightly in 2012 when compared with 2010 and 2011. The staff attributes the slight reduction in baseline resource expenditures to the extended shutdowns at Crystal River, San Onofre, and Fort Calhoun. Extended shutdowns effectively reduce the number of appropriate baseline inspection sample opportunities that the staff can complete under certain baseline inspection areas.

Plant-specific inspections include supplemental inspections conducted in response to greater-than-green inspection findings and performance indicators; reactive inspections, such as augmented team inspections and special inspections performed in response to events; and the infrequently performed inspections listed in Appendix C, "Special and Infrequently Performed Inspections," to NRC Inspection Manual Chapter (IMC) 2515. "Light-Water Reactor Inspection Program—Operations Phase," dated April 26, 2012, and Appendix C, "Generic, Special, and Infrequent Inspections," to IMC 2201, "Security Inspection Program for Commercial Nuclear Power Reactors," dated September 8, 2009 which are not part of the baseline or supplemental inspection programs. Plant-specific inspection effort increased in 2012 when compared to 2010 and 2011. This can be attributed in part to the performance of three augmented team inspections at Wolf Creek, San Onofre and River Bend nuclear power plants. During 2010 and 2011 only one augmented team inspection was performed. In addition, substantial inspection activities were undertaken at Fort Calhoun in accordance with IMC 0350, "Oversight of Reactor Facilities in a

Shutdown Condition Due to Significant Performance and/or Operational Concerns." Further, Palisades and Seabrook received additional inspections as a result of Action Matrix deviations. Considering these activities, the increase in plant-specific resource expenditures is expected given the scope of the required inspections compared to previous years.

Generic safety issue inspections are typically one-time inspections of specific safety and security issues, with significant variability in effort possible from year to year. Resource expenditures for generic safety issue inspections remain relatively high, primarily due to the seismic and flooding walk-down inspections being conducted in response to the events at the Fukushima Daiichi Nuclear Station in Japan.

Regional effort for licensee performance assessment continues to remain consistent with 2010 and 2011 resource expenditures.

The effort reported for other activities includes inspection-related travel, the significance determination process (SDP), and routine communication that encompasses regional support, enforcement support, and the review of technical documents. The effort in this area remained consistent with CY 2010 and CY 2011 resource expenditures.

O-13 Analysis of Resident Inspector Demographics and Experience

- **Definition:** Annually, collect and analyze data in order to determine the relevant inspection experience of the resident inspector (RI) and senior resident inspector (SRI) population. The following four parameters will be measured and analyzed for both RIs and SRIs to ensure that the NRC maintains a highly qualified resident inspection staff:
 - (1) "NRC time" is the total number of years the individual has accumulated as an NRC employee.
 - (2) "Total resident time" is the total number of years the individual has accumulated as an RI or SRI.
 - (3) "Current site time" is the total number of years spent as an RI or SRI at the current site.
 - (4) "Relevant non-NRC experience" is nuclear power experience acquired outside of the NRC. Examples of relevant non-NRC experience are operation, engineering, maintenance, or construction experience with commercial nuclear power plants, naval shipyards, U.S. Department of Energy facilities, or the U.S. Navy nuclear power program.
- **Criteria:** None; trend only. Provide reasons for any meaningful increase or decrease in these resident demographic metrics.

NOTE: This metric is intended primarily for tracking and trending resident inspection experience. The results are used to make any modifications to the RI and/or SRI programs necessary to attract and retain highly qualified inspectors to the respective programs. The annual Commission paper on ROP self-assessment presents a detailed resident demographic and staffing analysis, including additional graphs, data, and analysis for this metric.

Goals Supported: Ensure Safety, Ensure Effectiveness

Analysis: Median and average statistical descriptors of the above data sets are plotted for both resident and SRI groups in Figures 1a, 1b, 2a, 2b, 3a, 3b, 4a, and 4b. Figures 1a, 1b, 3a, and 3b plot national trend data from 2007 through 2012 while Figures 2a, 2b, 4a, and 4b plot 2012 data by region and nationally. Plotted data is presented in fractional years. Analysis of the plots describes (a) percent change over time in national trend analyses or (b) percent plus or minus regional variance from national data in regional comparison analysis. This provides the reader with a more intuitive and objective sense of the magnitude of the respective trend or region variation.

Resident Inspector Experience Analysis

The following analysis supports IMC 0307 Metric O-13 "Analysis of Resident

Inspector Demographics and Experience," a trend-only metric. The following analysis is intended primarily for tracking and trending RI experience. The results of this analysis are used to make any necessary modifications to the RI program to attract and retain highly qualified inspectors to the program. Conclusions are discussed in Section IV.

Analysis of Figure 1a, below, reveals moderately increasing trends in <u>median</u> RI total resident time, current site time, and NRC time. However, it also reveals a more dominant declining trend in relevant non-NRC experience - down 62 percent from 10.4 to 4.0 years.



Figure 1a Median Resident Inspector Experience Trend (Metric O-13)

Analysis of Figure 1b, below, similar to Figure 1a, reveals increasing trends in <u>average</u> RI current site time, NRC time, and total resident. However, it also reveals a more dominant declining trend in relevant non-NRC experience – down 47 percent from 11.6 to 6.2 years.



Figure 1b Average Resident Inspector Experience Trend (Metric O-13)

Analysis of Figure 2a, below, explores the variation between 2012 <u>median</u> regional RI experience. The analysis reveals the least regional variation in NRC time from 5.4 to 6.3 years compared with the NRC median of 6.1 years, a variance of minus 7 percent to plus 9 percent. The greatest regional variation was in relevant non-NRC experience from 0.0 to 6.0 years compared with the NRC median of 4.0 years, a minus 100 percent to plus 41 percent variance. Regional variations for total resident time and current site time fell between the above extremes.



Figure 2a 2012 Median Resident Inspector Experience by Region (Metric O-13)

Analysis of Figure 2b, below, explores the variation between 2012 <u>average</u> regional RI experience. The analysis reveals the least regional variation in total resident time from 3.2 to 3.6 years compared with the NRC average of 3.5 years, a variance of minus 5 percent to plus 6 percent. The greatest regional variation was in relevant non-NRC experience from 4.5 to 7.9 years compared with the NRC average of 6.2 years, a minus 29 percent to plus 24 percent variance.



Figure 2b 2012 Average Resident Inspector Experience by Region (Metric O-13)

Overall, the RI experience analysis reveals an increasing 2007 to 2012 trend in NRC time, current site time, and total resident time but a declining trend in relevant non-NRC experience. Likewise, the 2012 regional comparison analysis revealed the highest regional variations in relevant non-NRC experience.

Senior Resident Experience Analysis

The following analysis supports IMC 0307 Metric O-13 "Analysis of Resident Inspector Demographics and Experience," a trend-only metric. The following analysis is intended primarily for tracking and trending SRI experience. The results of this analysis are used to make any necessary modifications to the SRI program in order to attract and retain highly qualified inspectors to the program. Conclusions are discussed in Section IV.

Analysis of Figure 3a, below, reveals no notable trends in <u>median</u> SRI experience. Unlike analysis of Figure 2a, the declining trend in median relevant non-NRC experience has not fully emerged but can be expected to do so in the future as RI's promote to SRI positions.



Figure 3a Median Senior Resident Experience Trend (Metric O-13)

Analysis of Figure 3b, below, reveals no notable trends in <u>average</u> SRI experience. Unlike analysis of Figure 2b, the declining trend in average relevant non-NRC experience has not emerged but can be expected to do so in the future as RI's promote to SRI positions.



Figure 3b Average Senior Resident Experience Trend (Metric O-13)

Analysis of Figure 4a, below, explores the variation between 2012 <u>median</u> regional SRI experience. The analysis reveals the least regional variation in NRC relevant non-NRC experience from 7.8 to 10.1 years, a variance of minus 16 percent to plus 8 percent. The greatest regional variation for was in current site time from 2.4 to 4.5 years, a minus 28 percent to plus 34 percent variance.



Figure 4a 2012 Median Senior Resident Experience by Region (Metric O-13)

Analysis of Figure 4b, below, explores the variation between 2012 <u>average</u> regional SRI experience. The analysis reveals the least regional variation in relevant non-NRC experience from 9.7 to 10.6 years compared with the NRC average of 10.6 years, a variance of minus 8 percent to plus 0 percent. The greatest regional variation was in total resident time from 7.2 to 11.5 years compared with the NRC average of 10.4 years, a minus 28 percent to plus 14 percent variance.



Figure 4b 2012 Average Senior Resident Experience by Region (Metric O-12)

Overall, the SRI experience analysis reveals a 2007 to 2012 trend of increasing average and median experience in all areas except relevant non-NRC experience which remained relatively constant.

Conclusions

During the period from 2007 through 2012, 3 of 4 inspector experience trends were stable or improving.

- RI total resident time, current site time, and NRC time all trended moderately upward in both median and average whereas relevant non-NRC experience trended downward. It should be noted that the 2012 average NRC time, of 6.7 years, and total resident time of 3.5 years, represent significant regulatory and inspection experience and provide assurance the declining relevant non-NRC experience is not a significant concern.
- SRI experience trending and regional variances were not noteworthy.
- The dominant declining trend and high degree of regional variance observed in relevant non-NRC RI experience have not yet emerged in the SRI demographic data but can be expected to do so in the future as RI's promote to SRI positions.

In 2012, regional variations in 3 of 4 inspector experience metrics were minimal.

- Regional variations in both median and average RI total resident time, current site time, and NRC time were relatively low.
- Regional variations in *average* RI relevant non-NRC experience, in contrast to the variations above, were relatively high.
- Regional variations in *median* RI relevant non-NRC experience were strikingly high, ranging from 0.0 to 6.0 years. This reflects that at least half of one region's RI's possessed no relevant non-NRC experience.
- Regional variations in SRI experience were relatively low in both median and average across all four experience parameters.
- Regional variations in SRI relevant non-NRC experience had not yet begun to reflect higher variations observed in RI non-NRC experience but are expected to trend upward in the future as RI's promote to SRI positions.

The downward trend in RI relevant non-NRC experience is attributed to a focus on the hiring, training, and assignment of inspectors directly from college with no relevant non-NRC experience. As these inspectors enter and remain in the resident program, it is not unexpected that a declining trend in the non-NRC experience will occur. Based on the evaluation of ROP performance, the declining trend and high regional variability in RI relevant non-NRC experience have not adversely impacted ROP effectiveness.

O-14 Analysis of Site Staffing

Definition: Annually, collect and analyze data to measure the permanent inspector staffing levels at each of the reactor sites for both RIs and SRIs in order to evaluate the agency's ability to provide continuity of regulatory oversight.

The staff developed a site staffing metric of 90 percent programwide in response to a recommendation by the Davis-Besse Lessons Learned Task Force (DBLLTF). The purpose of the metric is to evaluate the agency's ability to provide continuity of regulatory oversight through timely assignment of permanent RI/SRI staff. Specifically, DBLLTF Item 3.3.5.3 recommends that the staff establish a measurement for RI/SRI staffing, including program expectations to satisfy minimum staffing levels.

Criteria: The criterion is set at 90 percent programwide. Any single site that falls below 90 percent will be individually evaluated. Provide reasons for any meaningful increase or decrease in the inspector staffing level at reactor sites.

NOTE: Inspectors assigned to the site permanently or through a rotation with a minimum duration of 6 weeks shall be counted. Inspectors on 6-week or longer rotational assignments will be identified as such. Inspectors assigned to the site for less than 6 weeks will not be counted but should be indicated as such. Additionally, the regions shall indicate sites where permanently assigned RIs or SRIs are away from the site for an extended time (one continuous period greater than 6 weeks). Only inspectors who have attained at least a basic inspector certification status, as defined by Appendix A, "Basic-Level Training and Qualification Journal," to IMC 1245, "Qualification Program for Operating Reactor Programs," shall be counted.

Data will indicate the number of days a qualified RI and SRI are permanently assigned to the site during the year divided by the number of days in the year. Number of days spent on training, meetings away from the site, participation in team inspections, leave, or other temporary duties (e.g., acting for Branch Chiefs in their absence) will not be counted against the metric unless the absence exceeds 6 continuous weeks.

Goals Supported: Effective, Predictable

Analysis: Permanent inspector staffing levels at each reactor site were analyzed for both RIs and SRIs. Only those inspectors who have attained at least a basic inspector certification status, as defined in <u>Appendix A</u>, "<u>Basic-Level Training and Qualification Journal</u>," to IMC 1245, "Qualification Program for Operating Reactor <u>Programs</u>," dated December 19, 2012, are counted. The data reflect the number of days a qualified RI and SRI were permanently assigned to the site divided by the number of days in the period. In accordance with the metric criterion in Appendix A to IMC 0307, any site that falls below 90 percent is individually evaluated. Reasons for any meaningful increase or decrease in the inspector staffing level are provided. IMC 0307 provides further details on the site staffing goal.

Analysis of the data summarized in Figure 7, below, confirms that all regions exceeded the 90 percent criteria with a national annual average of 99.4 percent for 2012. This reflects an improvement over 2011 in which the national annual average was 98.5 percent. 2012 national quarterly averages ranged from 98.8 to 99.9 percent while regional quarterly averages ranged from 96.8 percent to 100 percent.



Figure 7 - 2012 Resident Program Permanent Site Staffing Levels

Analysis of the data summarized in Table 1, below, reveals that, in 2012, for the first time in the trending period, all sites exceeded the 90 percent permanent annual site staffing metric criteria.

Table 1 Individual Permanent Site Staffing Performance Trend

Instances of Annual Site-Specific Staffing < 90 percent	2007	2008	2009	2010	2011	2012
Number of Sites with < 90 percent site staffing	9	5	5	3	3	0

Conclusions

During the period from 2007 through 2012, inspector permanent site staffing trends were stable or improving.

- Permanent Site Staffing remains stable and well above the 90 percent staffing goal.
- In 2012, no individual site documented annual permanent site staffing levels below 90 percent - the first time this has occurred during the 2007-2012 trending period.

O-15 Analysis of ROP Training and Qualifications

- **Definition:** Annually, evaluate the implementation of IMC 1245, particularly as it pertains to ROP implementation.
- **Criteria:** None; trend only. Summarize and evaluate the training accomplished over the previous year and propose program improvements as necessary to address noted concerns.

NOTE: This metric is intended primarily for tracking and trending the effectiveness of the ROP training and qualifications programs. The annual Commission paper on ROP self-assessment includes a discussion of training effectiveness.

Goals Supported: Effective, Predictable, Understandable

Analysis: Through data and comments collected through the survey, the staff noted a generally lower level of satisfaction with training activities. Respondents were most concerned with specific elements, such as the effectiveness of safety culture training, the availability of rotational assignments, and the reduction in contract training courses. The staff has been working to improve the effectiveness of safety culture training for a number of years. The training and qualification process is mature and no significant changes were made in CY 2012. Survey comments complimented the quality of the initial qualification process and NRC instructors. Respondents were most satisfied with the level of encouragement received to maintain a questioning attitude while conducting inspections. The staff will evaluate the survey results with regional inspectors to identify improvement actions and will continue to monitor these measures for meaningful trends in future surveys.

The staff continued to use the ROP feedback process to improve the initial and continuing inspector training programs in order to produce and maintain wellqualified, competent inspectors. Recommendations identified by the staff were reviewed and incorporated into inspector training standards, as appropriate.

The staff implemented a number of initiatives to address previous concerns in the safety culture area. Specifically, the staff worked with the Technical Training Center to enhance existing required training courses to improve inspectors' understanding of safety culture and how to assess it. The staff issued a safety culture assessor qualification program to qualify more specialists in October 2011 and updated the program in September 2012. In addition to these activities, the staff actively engaged with the Institute for Nuclear Power Operations (INPO), The Nuclear Energy Institute (NEI) and external stakeholders to develop common safety culture terminology.

The availability of rotational and training assignments may have been adversely impacted by demands on inspectors, such as, the need to conduct IMC 0350 inspections at Fort Calhoun, reactive and supplemental inspections, and two new temporary instructions (TIs). Inspectors completed training and implemented TI

2515/187, "Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns" and TI 2515/188, "Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns."

Inspectors maintained proficiency in CY 2012, by completing refresher training on IMC 0620, "Inspection Documents and Records." Additionally, the staff of the Office of Nuclear Security and Incident Response conducted two cyber security training courses for regional inspectors and is in the final process of issuing a qualification standard for cyber security inspectors. Additionally, the staff conducted two pilot inspections, issued a cyber security TI, and is issuing a significant determination process (IMC 0609 Appendix E Part IV) to evaluate cyber security issues. Cyber security inspections have commenced this calendar year and NSIR staff is accompanying the inspectors to assess and evaluate the oversight process.

O-16 Analysis of Regulatory Impact

- **Definition:** Annually, collect and analyze licensee feedback and develop a summary of regulatory impact forms that are critical of the ROP.
- **Criteria:** None; trend only. Summarize and evaluate the feedback received and propose program improvements as necessary to address common concerns.

NOTE: This metric is intended primarily for tracking and trending regulatory impact. The annual Commission paper on ROP self-assessment includes a detailed regulatory impact summary.

- Goals Supported: Effective, Open, Understandable
- Analysis: Over the past year, the staff received and compiled feedback from 94 site visits to 47 reactor sites across all four NRC Regions. These visits resulted in 199 distinct comments that fell into two main categories: inspector performance and formal communications with licensees. Of the comments compiled, 95 percent were favorable and 5 percent were unfavorable. The favorable percentage was slightly higher than previous years, and the distribution of comments was similar. The few unfavorable comments received appear to be isolated, and the staff has forwarded the specific feedback to the responsible managers for their consideration. Enclosure 2 of the 2012 annual ROP self-assessment SECY provides a summary of the feedback received and the staff's evaluation.