

## IMC 0307 APPENDIX A

### REACTOR OVERSIGHT PROCESS SELF-ASSESSMENT METRICS

#### I. PERFORMANCE INDICATOR PROGRAM METRICS

##### PI-1 Reliability of Performance Indicator Data

**Definition:** Independently verify Performance Indicator (PIs) using Inspection Procedure (IP) 71151, "PI Verification." Annually, count the number of 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."

**Criterion:** Expect few occurrences (less than 3).

**Goals Supported:** Objective, Predictable, Open

**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) 2013 after inspectors identified a PI discrepancy.. The Susquehanna Steam Electric Station, Unit 2, failed to report accurate PI data for the Unplanned Scrams with Complications PI (Inspection Report 05000388/2013002, dated May 14, 2013). The data contributed to the PI crossing into the white performance band during the fourth quarter of 2012. This was the only occurrence in 2013.

**Metric Criterion Met:** Yes

**PI-2            Consistent Interpretation of PI Guidance**

**Definition:**    Annually, count the number of new frequently asked questions (FAQs).

**Criterion:**     Expect low numbers (less than 18).

**Goals Supported:**   Understandable, Objective, Predictable, Open

**Analysis:**       Seven FAQs were introduced in CY 2013. The seven FAQs were related to four different cornerstones (Initiating Events [4], Mitigating Systems [1], and Emergency Preparedness [2]). The FAQs were submitted by seven different sites.

**Metric Criterion Met:** Yes

**PI-3            Timely Indication of Declining Plant Performance**

**Definition:**    Annually, 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.

**Criterion:**     Expect few occurrences (less than 3).

**Goals Supported:** Risk-Informed, Effective

**Analysis:**     During this assessment period (CY 2013), there were no occurrences of a PI that crossed multiple thresholds.

**Metric Criterion Met:** Yes

**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

**Analysis:**        Since no stakeholder surveys were conducted this metric is not applicable.

**Metric Criteria Met:** N/A

**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 U.S. Nuclear Regulatory Commission's (NRC) external Web site. Also note the number of late submittals from licensees that did not meet the 21-day timeliness goal.

**Criterion:** Expect few occurrences (less than 3 late Web postings and less than 5 late PI submittals).

**Goals Supported:** Effective, Open, Predictable

**Analysis:** All 2013 calendar quarter postings on the NRC's external Web site were performed in a timely manner. There were three late licensee PI data submittals in CY 2013 (two in the first quarter and one in the third quarter). Each submittal was less than one day late and had no significant impact on the NRC's ability to process the PI data in a timely manner.

**Metric Criterion Met:** Yes

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

**Analysis:**        Since no stakeholder surveys were conducted this metric is not applicable.

**Metric Criteria Met:** N/A

**PI-7                    Clarity of Performance Indicator Guidance**

**Definition:**    Survey external and internal stakeholders asking if IMC 0608, “Performance Indicator Program,” and NEI 99-02, “Regulatory Assessment Performance Indicator Guideline,” provide clear guidance regarding performance indicators.

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

**Goals Supported:**   Understandable, Open, Objective, Predictable

**Analysis:**        Since no stakeholder surveys were conducted this metric is not applicable.

**Metric Criteria Met:** N/A

## II. INSPECTION PROGRAM METRICS

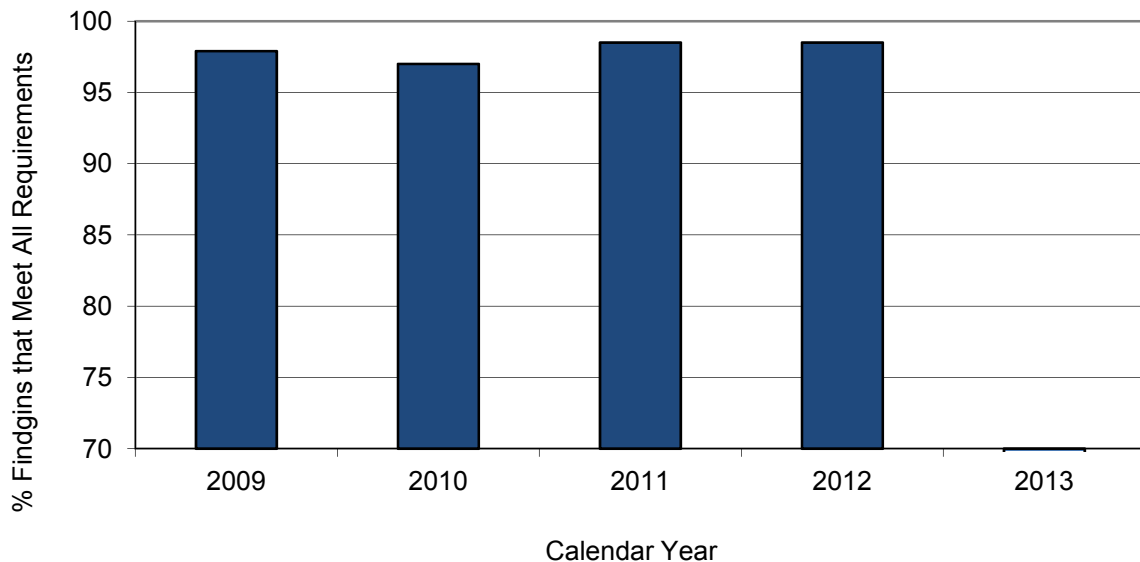
### IP-1 Inspection Results Documented In Accordance With Requirements

**Definition:** Audit selected inspection reports to verify compliance with program requirements (IMC 0612, "Power Reactor Inspection Reports"). Report identified weaknesses and corrective actions taken or planned.

**Criteria:** None; trend only. Report on audit results, including any recommended improvements in guidance and/or training to address identified concerns.

**Goals Supported:** Objective, Risk-Informed, Predictable, Understandable, Open, Effective

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



**Analysis:** The staff did not perform inspection report audits during CY 2013. Rather, staff resources were applied to Fukushima related inspections, Fort Calhoun restart activities, and the Reactor Oversight Process (ROP) Enhancement project effort.

**Metric Criteria Met:** None defined



**IP-2            Completion of Baseline Inspection Program**

**Definition:**    Annual completion of baseline inspection program.

**Criterion:**    Expect satisfactory completion of the baseline inspection program as defined in IMC 2515, "Light-Water Reactor Inspection Program - Operations Phase," in all regions.

**Goals Supported:**    Predictable, Effective

**Analysis:**    The inspection program independently verified that licensees operated plants safely and securely in CY 2013 and 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 completion of the baseline inspection program in a memorandum available in the Agencywide Documents Access and Management System (ADAMS) at Accession Nos. [ML14041A037](#) for Region I, [ML14045A362](#) for Region II, [ML14045A382](#) for Region III, and [ML14050A152](#) for Region IV. Additionally, the Office of Nuclear Security and Incident Response completed all security baseline inspections in CY 2013, as documented in a non-publically available memorandum (ML14016A237). All regions completed their baseline inspections in CY 2013 within the allocated resources. Component Design Inspections at South Texas Project and Palo Verde stations, which were initially scheduled to be completed during 4<sup>th</sup> quarter 2013, were deferred for completion in 1<sup>st</sup> quarter 2014 because of the Federal furlough in October of 2013.

**Metric Criterion Met:** Yes

**IP-3            Inspection Reports Are Timely**

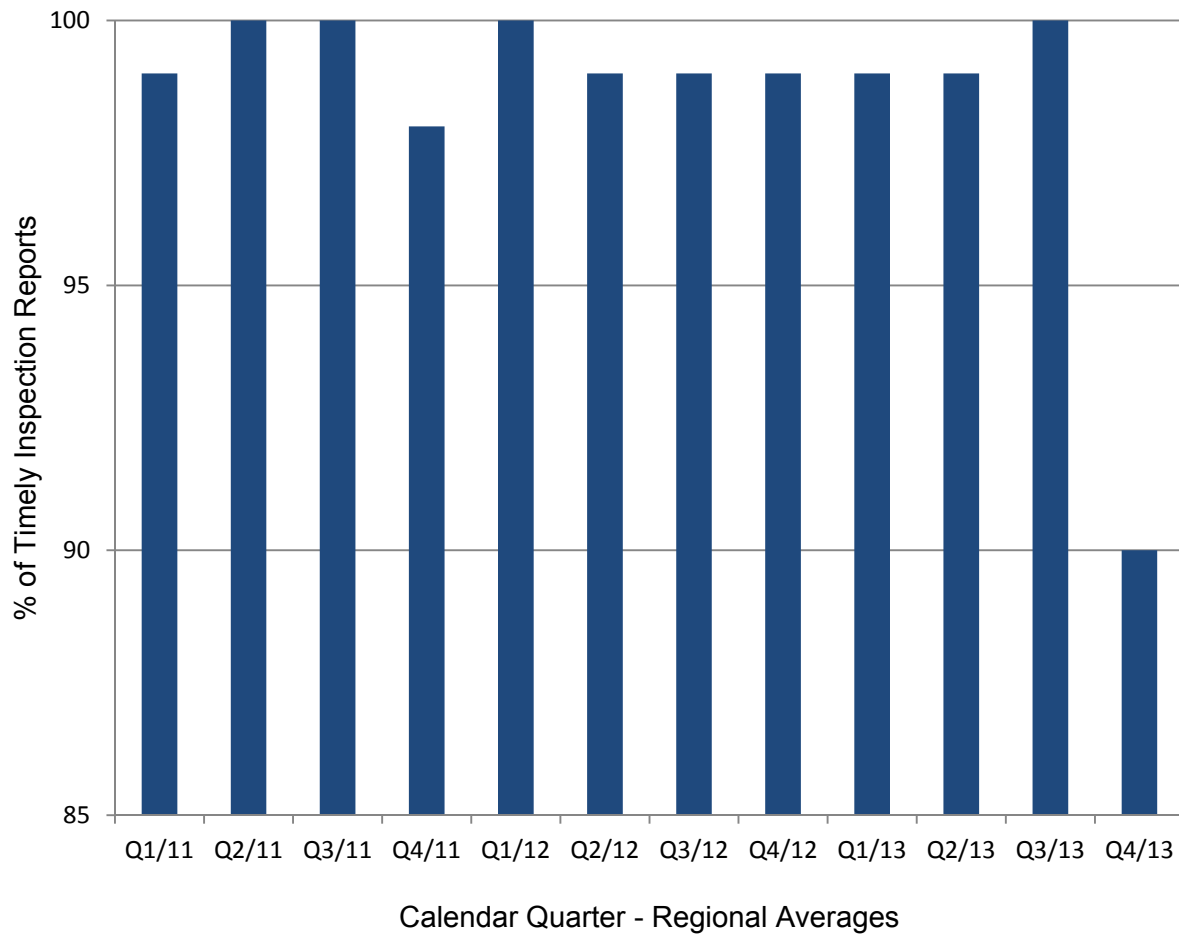
**Definition:** Obtain data from the Reactor Program System (RPS) on the total number of reports issued and the number issued within timeliness goals as stipulated in IMC 0612, "Power Reactor Inspection Reports."

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

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

**Goals Supported:** Effective, Open, Predictable

The chart below presents the percentage of inspection reports that were issued on time.



**Analysis:** During CY 2013, the NRC issued 641 inspection reports. The regions met or exceeded the inspection report timeliness goal of 90 percent in each quarter throughout the year. In CY 2013, 622 out of 641 (97 percent) inspection reports met the timeliness requirements contained in IMC 0612. Some inspection reports issued during the 4<sup>th</sup> quarter of 2013 did not meet our normal timeliness goals because of the October government furlough. Inspection report timeliness was 90 percent for the 4<sup>th</sup> quarter of CY 2013.

**Metric Criterion Met:** Yes

**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.

**Criterion:**     Expect all TIs to be completed within TI timeliness requirements.

**Goals Supported:**    Effective, Predictable

**Analysis:**        In CY 2013, the staff completed 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." The staff completed these TIs at all plants within the established deadlines; therefore, the metric criterion was met.

**Metric Criterion Met:** Yes

**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

**Analysis:**        Since no stakeholder surveys were conducted this metric is not applicable.

**Metric Criteria Met:**    N/A

**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

**Analysis:**        Since no stakeholder surveys were conducted this metric is not applicable.

**Metric Criteria Met:** N/A

## **IP-7            Analysis of Baseline IPs**

**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 to this Chapter. 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:** Analysis of inspection procedure effectiveness should be performed for each of the baseline inspection procedures annually. IP review criteria discussed in IMC 0307 Appendix B, "Reactor Oversight Process Realignment," can be used as one method for performing an inspection procedure effectiveness review. Other self-assessment initiatives to determine inspection procedure effectiveness are also acceptable. Summarize and evaluate the individual inspection procedure reviews and propose program adjustments as necessary to address identified areas for improvement. 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:** In CY 2013, the Office of Nuclear Reactor Regulation (NRR) and regional staff and management performed an in-depth review of the reactor oversight program with the goal to address the following questions:

- Is the ROP helping us achieve what we need to achieve as a regulator?
- Is the ROP adequate for the current environment?
- What is the nexus between the ROP and industry safety performance?
- What is working? What is not? What should be improved?

This review was titled ROP Enhancement Project. The staff is finalizing their report on the results of the Baseline Inspection Program portion of the ROP Enhancement Project during CY 2014. The goals established for this portion of the project included enhancing the baseline inspection program to incorporate the inspection areas for the current environment, eliminate redundant or no longer necessary inspection areas, maximize efficient and effective use of our resources, and incorporate flexibility where appropriate. The baseline inspection procedures were divided into ten inspection areas. Additionally, special topics were identified as areas that should be included in the enhancement effort based

on feedback and the potential for these areas to impact the baseline inspection program.

**Metric Criteria Met:** Yes



### **III. SIGNIFICANCE DETERMINATION PROCESS (SDP) METRICS**

#### **SDP-1 The 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 adequate detail to enable an independent auditor to trace through the available documentation and reach the same significance color characterization.

**Criteria:** Expect at least 90 percent of SDP outcomes 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:** Twenty-two findings had greater-than-green significance in CY 2013. The staff audited a representative sample of twelve findings having greater-than-green final significance. The final risk significance of each finding was evaluated using the applicable appendices of IMC 0609 and other pertinent guidance. The documentation of the final risk characterization for eleven of the findings included adequate detail to support the final risk significance determination. One of the findings had a final risk characterization that was determined not to be predictable and repeatable because there were different staff interpretations on how to implement both technical and programmatic guidance for an inspection finding that caused an initiating event occurrence. In 2013 the staff held a public meeting with external stakeholders and industry to discuss approaches in modeling the safety significance of findings that cause initiating event occurrences. The staff plans to hold several public meetings in CY 2014 to establish a technically sound approach to characterizing the significance of inspection findings that involve events. If the established approach involves potential changes in Commission Policy governing the SDP, the staff will obtain Commission approval before proceeding with revisions to applicable program guidance documents. The staff determined that 92 percent of the samples chosen for review were predictable and repeatable.

**Metric Criteria Met:** Yes

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

**Definition:** Track the total number of appeals of final SDP results for white, yellow, or red inspection findings.

**Criteria:** Expect few successful appeals (less than three) of SDP significance that result in a final determination being overturned across all regions for any white, yellow, or red inspection findings. 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 of any findings in CY 2013. The metric criteria are met because there were no successful appeals of significance determinations.

**Metric Criteria Met:** Yes

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

**Definition:**    Survey internal stakeholders 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

**Analysis:**      Since no stakeholder surveys were conducted this metric is not applicable.

**Metric Criteria Met:**    N/A

**SDP-4      The SDP Results in an Appropriate Regulatory Response and Focus Attention on Significant Performance Issues**

**Definition:** Survey external and internal stakeholders asking if the SDP results in an appropriate regulatory response and focus attention on significant performance issues.

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

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

**Analysis:** Since no stakeholder surveys were conducted this metric is not applicable.

**Metric Criteria Met:** N/A

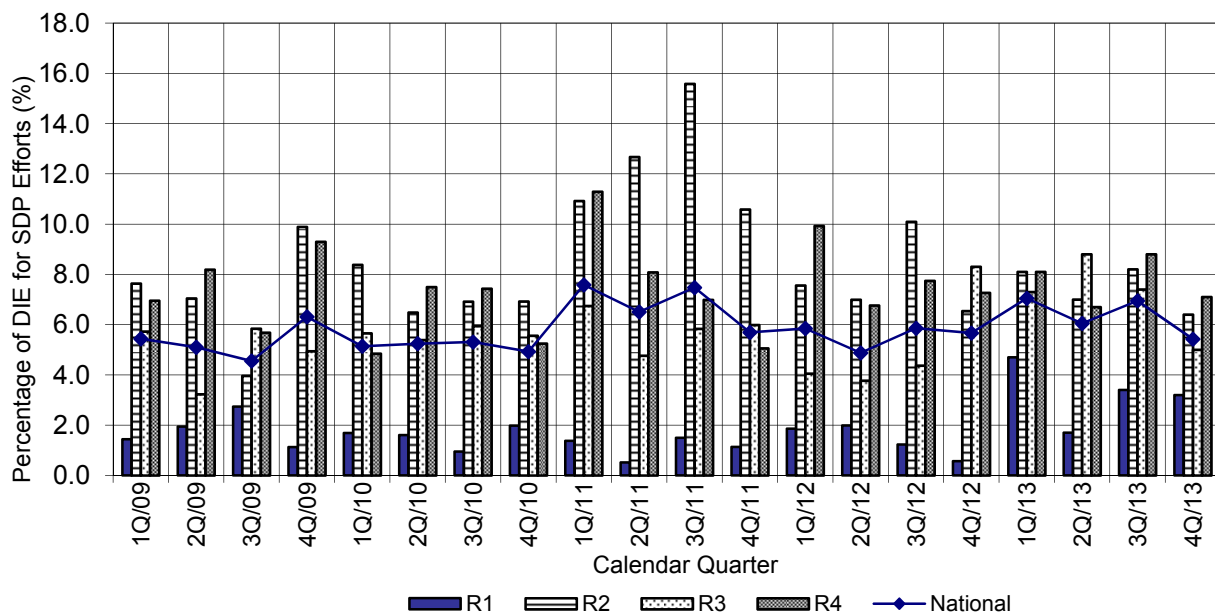
**SDP-5      The Resources (Direct Charges and Support Activities) Expended Are Appropriate**

**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.

**Criteria:** Total SDP expenditures should not exceed 10 percent of the total regional direct inspection effort (DIE) with 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 quarterly average for the past four years has remained steady between 5 and 7 percent. The regional contributions to the national average are reflected in the chart above.

**Metric Criteria Met:** Yes

## SDP-6 Final Significance Determinations Are Timely

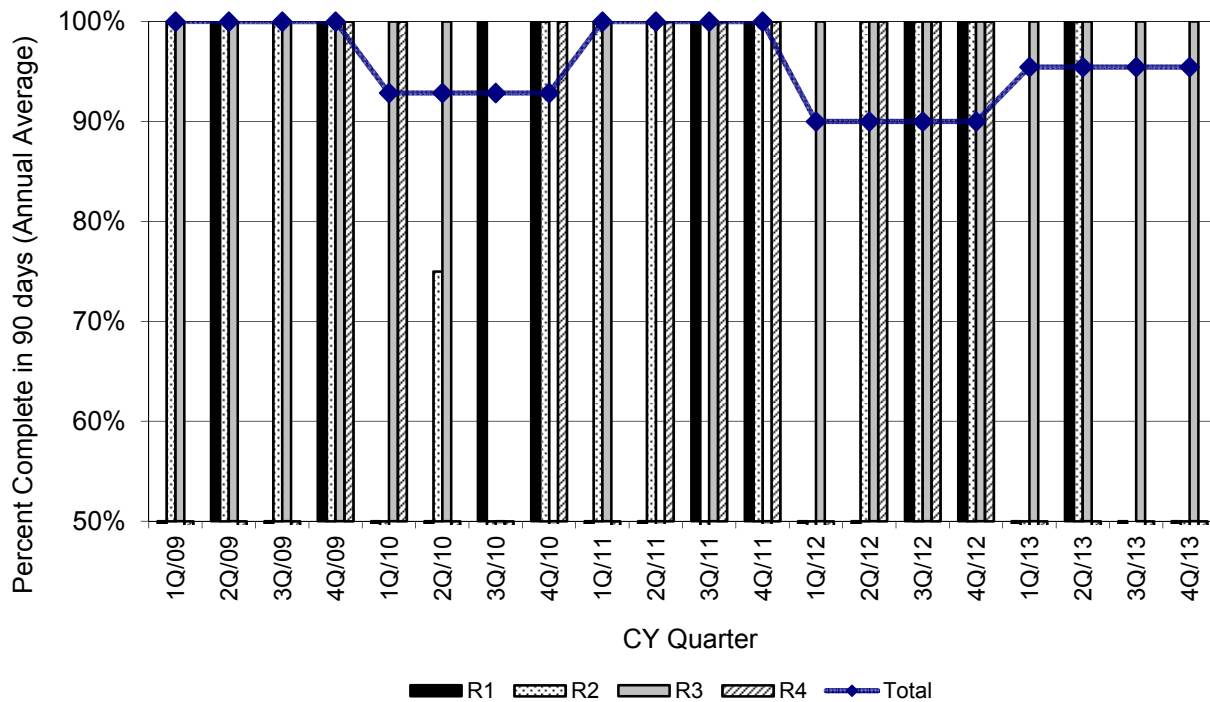
**Definition:** Conduct a quarterly audit to identify the total number of inspection items finalized as greater than green that were under review for more than 90 days since:

- (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 or finding pending completion of a significance determination and not counted in the above category.

**Criteria:** Expect at least 90 percent of all SDP results that are counted per the criteria above should be finalized within 90 days. All issues greater than 90 days will be assessed to determine causal factors and to recommend process improvements.

**Goals Supported:** Effective, Open, Predictable

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



**Analysis:** All but 1 of the 22 greater-than-green findings in CY 2013 met the 90-day goal. Final significance determinations have been consistently completed on time for the past seven years.

**Metric Criteria Met:** Yes

#### **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:** Annually, track the number of deviations from the Action Matrix. Evaluate the causes for these deviations and identify changes to the ROP, if any, to improve the guidance documents.

**Criterion:** Expect few new deviations (less than three).

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

**Analysis:** The staff opened one new deviation in CY 2013 at the Perry Nuclear Power Plant. On January 11, 2013, the Executive Director for Operations approved a deviation from the ROP Action Matrix to maintain Perry in the Degraded Cornerstone Column (Column 3) and not move it to the Repetitive Degraded Cornerstone (Column 4). Perry entered Column 3 in the second quarter of 2011 because of a White inspection finding and a White PI in the Occupational Radiation Safety Cornerstone. The NRC implemented IP 95002, "Supplemental Inspection for One Degraded Cornerstone or Any Three White Inputs in a Strategic Performance Area," in November 2012. The inspection team found that the licensee did not successfully address all of the IP objectives. Because the performance issues were not successfully addressed and the finding remained open, IMC 0305 specified that Perry should transition from Column 3 to Column 4 of the Action Matrix because it met the definition of a repetitive degraded cornerstone. However, degraded licensee performance appeared to be limited to the Occupational Radiation Safety Cornerstone. There were no additional indications of significant performance problems in any other ROP cornerstones. For these reasons, the regulatory actions specified for Column 3 of the Action Matrix were deemed more appropriate. Therefore, Region III requested, and the Executive Director for Operations approved, a deviation from the Action Matrix to retain Perry in Column 3.

**Metric Criterion Met:** Yes

**AS-2        The Number and Scope of Additional Actions Recommended as a Result of the Agency Action Review Meeting (AARM) Beyond Those Actions Already Taken Are Limited**

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

**Criterion:**    Expect few additional actions (less than two).

**Goals Supported:**    Understandable, Predictable, Objective

**Analysis:**    The AARM was held on April 24, 2013 . 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.

**Metric Criterion Met:** Yes



**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 95 percent of timeliness goals be met for each of the three assessment activities noted in the definition.

**Goals Supported:**    Effective, Open, Predictable

**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 end of the mid-cycle and end-of-cycle assessment periods; and (5) public meetings are completed within 16 weeks of the end of the assessment period for plants that were in Columns 3, 4, or 5 of the Action Matrix, and they are scheduled during the year at a time that presents the best opportunity to engage public stakeholders for plants in Columns 1 or 2.

Timeliness goals in CY 2013 were met as follows:  
Quarterly, mid-cycle, and end-of-cycle reviews – 100 percent  
Assessment letters issued – 100 percent  
Public meetings held – 98.5 percent

The public meeting for Columbia was delayed beyond 16 weeks because staff decided to wait until the 95002 supplemental inspection was completed so they could discuss the results in the public assessment meeting.

**Metric Criteria Met:** Yes

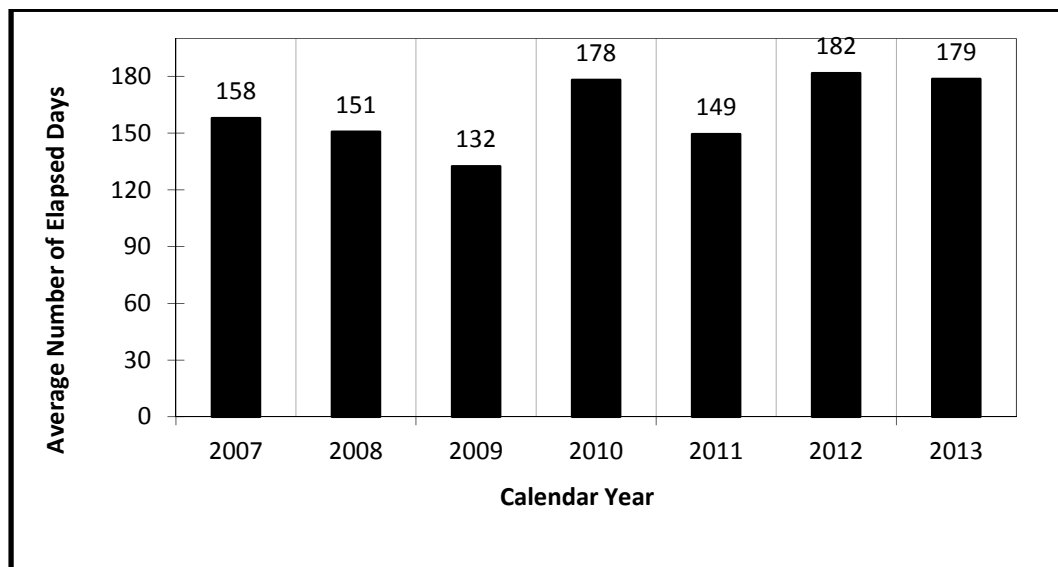
#### AS-4 ROP Response to Performance Issues Is Timely

**Definition:** Count the number of days between issuance of an assessment letter discussing an issue of more than very low safety significance and completion of the supplemental inspection (by exit meeting date, not issuance of the inspection report). Note that this metric is intended to evaluate the effectiveness of the program, which relies on timely implementation by both the NRC and the industry.

**Criteria:** Expect a stable or declining trend.

**Goals Supported:** Effective, Predictable

**Analysis:** 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 year.



The average time elapsed in CY 2013 was consistent with the elapsed time for CY 2012, and relatively stable over the past few years. Therefore, the staff considers this metric met. After subtracting the elapsed time for completion of the Browns Ferry 95003 supplemental inspection, the CY 2013 average decreases to 146 days, which is a significant reduction from prior years. However, staff recognizes that there is room for improvement to ensure regulatory actions are timely. Staff is evaluating timeliness of supplemental inspections under the ROP enhancement project.

**Metric Criteria Met:** Yes

**AS-5                      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

**Analysis:** Since no stakeholder surveys were conducted this metric is not applicable.

**Metric Criteria Met:** N/A

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

**Definition:** Survey external and internal stakeholders asking whether the information contained in assessment letters is relevant, useful, and written in plain English.

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

**Goals Supported:** Understandable, Effective, Open

**Analysis:** Since no stakeholder surveys were conducted this metric is not applicable.

**Metric Criteria Met:** N/A

**AS-7            Significant Degradations in Plant Performance Allow for Adequate Agency Engagement of the Licensees Prior to Unacceptable Performance**

**Definition:**    Annually, track the number of instances in which plants enter either the IMC 0350 process or the Unacceptable Performance Column of the ROP Action Matrix from the Licensee Response or Regulatory Response Column. Consistent with the ROP basis as described in SECY-99-007, this metric is designed to ensure that the ROP provides adequate margin in the assessment of licensee performance so that appropriate licensee and NRC actions are taken before unacceptable performance occurs.

**Criteria:**        Expect no instances in which significant degradations in plant performance cause a prompt change in Agency response as described above. Evaluate and provide a qualitative explanation of each instance in which this occurs.

**Goals Supported:**   Risk-Informed, Effective, Predictable

**Analysis:**        There were no instances in CY 2013 in which a licensee transitioned to the Unacceptable Performance column of the Action Matrix, nor were there any instances where a licensee transitioned to IMC 0350 oversight during the calendar year. Therefore, the staff considers this metric met.

**Metric Criteria Met:** Yes

**V. OVERALL REACTOR OVERSIGHT PROCESS (ROP) 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 stable or increasing positive perception over time.

**Goals Supported:** Objective, Predictable, Effective, Open

**Analysis:** Since no stakeholder surveys were conducted this metric is not applicable.

**Metric Criteria Met:** N/A

**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

**Analysis:**        Since no stakeholder surveys were conducted this metric is not applicable.

**Metric Criteria Met:** N/A

**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

**Analysis:**        Since no stakeholder surveys were conducted this metric is not applicable.

**Metric Criteria Met:** N/A



**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

**Analysis:**        Since no stakeholder surveys were conducted this metric is not applicable.

**Metric Criteria Met:** N/A

**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

**Analysis:**        Since no stakeholder surveys were conducted this metric is not applicable.

**Metric Criteria Met:** N/A

**O-6                    Stakeholders Perceive That the ROP Ensures Openness and That There are Sufficient Opportunities for Public Participation in the Process**

**Definition:**    Survey external and internal stakeholders asking if the ROP ensures openness and provides sufficient opportunities for the public to participate in the regulatory process.

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

**Goals Supported:**    Open, Effective

**Analysis:**        Since no stakeholder surveys were conducted this metric is not applicable.

**Metric Criteria Met:** N/A

**O-7                    Stakeholders Perceive the NRC To Be Responsive to its Inputs and Comments**

**Definition:**    Survey external and internal stakeholders asking if the NRC is responsive to stakeholder inputs and comments on the ROP.

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

**Goals Supported:**    Open, Effective

**Analysis:**        Since no stakeholder surveys were conducted this metric is not applicable.

**Metric Criteria Met:** N/A

**O-8                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

**Analysis:**        Since no stakeholder surveys were conducted this metric is not applicable.

**Metric Criteria Met:** N/A

**O-9            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 (i.e., undesirable results that were not planned or anticipated and may adversely affect reactor safety or the overall effectiveness of the ROP).

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

**Goals Supported:**    Effective, Open

**Analysis:**        Since no stakeholder surveys were conducted this metric is not applicable.

**Metric Criteria Met:** N/A

**O-10            Stakeholders Perceive That the ROP Adequately Addresses Safety Culture and Focuses Attention Appropriately**

**Definition:**    Survey external and internal stakeholders asking whether safety culture is adequately incorporated into the ROP to 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

**Analysis:**        Since no stakeholder surveys were conducted this metric is not applicable.

**Metric Criteria Met:** N/A

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

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

**Criteria:** Expect no major programmatic deficiencies.

**Goals Supported:** Effective, Predictable

**Analysis:** The NRC conducted no IITs and one AIT in CY 2013 at Arkansas Nuclear One. The staff did not identify any lessons learned regarding ROP programmatic deficiencies from the reactive inspection.

**Metric Criteria Met:** Yes



## **O-12      Analysis of Inspection Hours and Resource Expenditures**

**Definition:** Annually, collect and analyze resource data (e.g., direct inspection effort, preparation/documentation, and 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 for 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 ROP self-assessment Commission paper.

**Goals Supported:** Effective, Predictable

**Analysis:** In CY 2013, the overall resource expenditures decreased, when compared to CY 2011 and CY 2012. This can be primarily attributed to the decommissioning of the San Onofre, Kewaunee, and Crystal River plants and Indian Point Unit 2 and 3 transitioning from two single-unit site staffing with four resident inspectors to a dual-unit unique site budget model with three resident inspectors. With respect to Indian Point, based on a number of years of inspection results and assessment insights, and the fact that Entergy has implemented site-wide processes and integrated their staff into a common organization, Region I concluded that an integrated site inspection and oversight program provided by a unique site budget model and informed by remaining site differences and stakeholder involvement was warranted.

Baseline inspection hours include direct inspection effort, baseline inspection preparation and documentation, and plant status activity. Baseline inspection hours decreased commensurate with the overall reduction in resource expenditures discussed above. The extended shutdowns at Fort Calhoun and Arkansas Nuclear One further contributed to reductions in this area. The extended shutdowns effectively reduce the number of appropriate baseline inspection sample opportunities that can be completed under certain baseline inspection areas. Additionally, the Government shutdown and the corresponding government employee furlough resulted in cancelling and rescheduling some long-lead resource intensive team inspections, such as Component Design Bases Inspections.

Plant-specific inspections include supplemental inspections conducted in response to greater-than-green inspection findings and performance indicators, reactive inspections in response to events, and the infrequently performed inspections listed in Appendix C, “Special and Infrequently Performed Inspections,” to NRC IMC 2515, “Light-Water Reactor Inspection Program—Operations Phase,” and Appendix C, “Generic, Special, and Infrequent Inspections,” to IMC 2201, “Security Inspection Program for Commercial Nuclear Power Reactors,” which are not part of the baseline or supplemental inspection programs. Plant specific inspection effort increased in 2013 when compared to 2011 and 2012. This can be primarily attributed to IP 95003, “Supplemental Inspection for Repetitive Degraded Cornerstones, Multiple Degraded Cornerstones, Multiple Yellow Inputs or One Red Input,” being performed at Browns Ferry and Fort Calhoun, which are highly resource intensive.

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 inspections related to potential aircraft threats, the industry initiative to control degradation of underground piping and tanks, and the Near-Term Task Force recommendation reviews in response to the Fukushima Dai-Ichi Accident. The hours expended during the 3-year period shown in Table 1 demonstrate the variation in the level of effort that is possible in this area from year to year.

Regional effort for licensee performance assessment decreased commensurate with the overall reduction in resource expenditures discussed above, particularly the decommissioning of three plants.

The effort reported for other activities includes inspection-related travel, the significance determination process (SDP), and routine communications necessary for regional support, enforcement support, and the review of technical documents. Resource expenditures for other activities decreased primarily due to the decommissioned reactors and government employee furloughs.

**Metric Criteria Met: Yes**

### **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 - the total time the individual has accumulated as an NRC employee.
- (2)    Total resident time - the total time the individual has accumulated as an RI or SRI.
- (3)    Current site time - the total time the individual has spent as an RI or SRI at the current site.
- (4)    Relevant non-NRC experience - the total time the individual has gained relevant nuclear power experience outside of the NRC. Examples of relevant non-NRC experience are operation, engineering, maintenance, or construction experience with commercial nuclear power plants, naval shipyards, Department of Energy facilities, and/or the U.S. Navy nuclear power program.

**Criteria:** None; trend only. Provide reasons for any meaningful increase or decrease in any of these resident demographic metrics.

**NOTE:** This metric is intended primarily for tracking and trending resident inspection experience. The results are used to make any necessary modifications to the RI and/or SRI programs in order to attract and retain highly qualified inspectors to the respective programs. A detailed resident demographic and staffing analysis is included in the annual ROP self-assessment Commission paper.

**Goals Supported:** Effective, Predictable

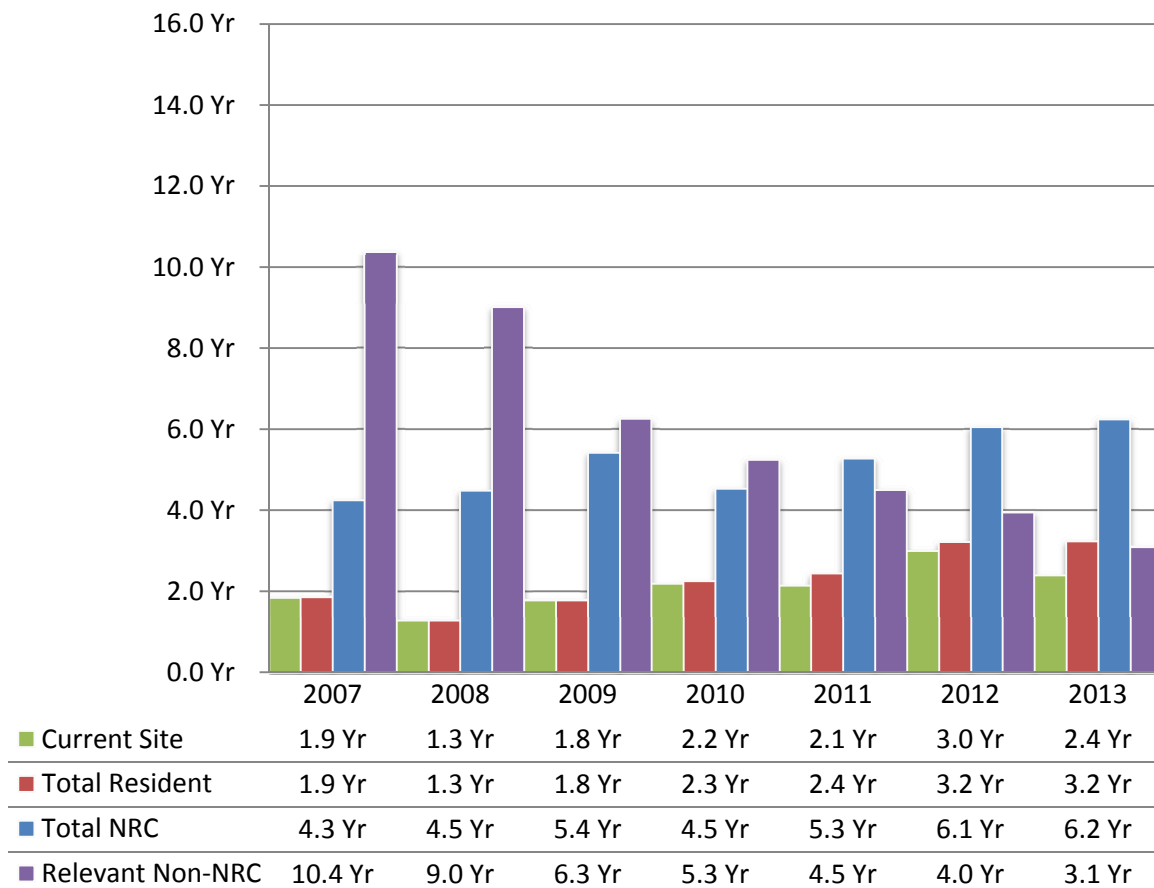
**Analysis:** Median and average statistical descriptors of the above data sets are plotted below for both RI and SRI groups in Figures 1a, 1b, 2a, 2b, 3a, 3b, 4a, and 4b. Figures 1a, 1b, 3a, and 3b depict national trend data from 2007 through 2013 while Figures 2a, 2b, 4a, and 4b depict 2013 data by 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.

The use of percent change and percent plus or minus regional variance provides a more intuitive and objective sense of the magnitude of the respective trend or regional variation.

### **RI Experience Analysis**

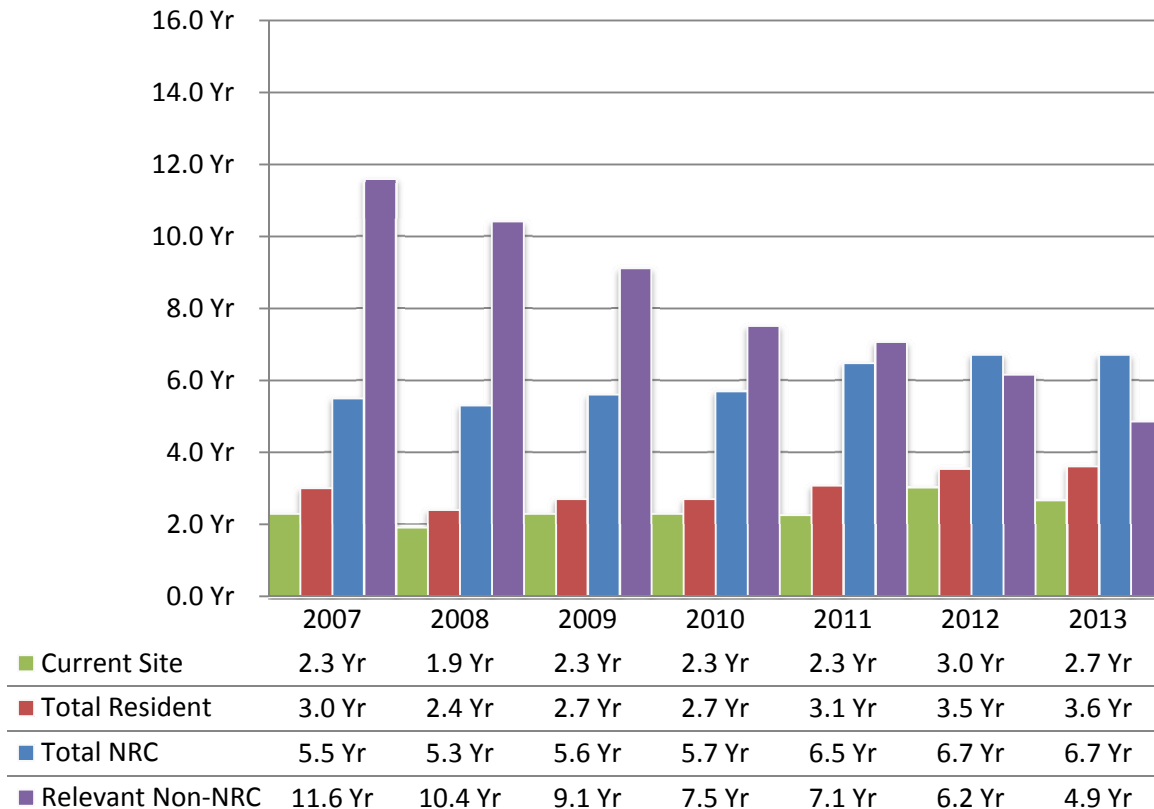
Analysis of Figure 1a, “Median Resident Inspector Experience Trend (Metric O-13)” reflecting median RI experience trends from 2007 to 2013, reveals increasing trends in Total Resident (up 1.3 years / 73 percent) and Total NRC (up 1.9 years / 47 percent). However, it also reveals a declining trend in Relevant Non-NRC Experience (down 7.3 years / 70 percent). In terms of the change, in years, of median resident experience from 2007 to 2013, the decline in Relevant Non-NRC Experience, at 7.3 years, is dominant, almost twice the other experience changes combined and continuing to decline. The steady decline in Relevant Non-NRC Experience from 2007 to 2013 is attributed to a number of factors, including an emphasis on college recruitment (which generally produces RI’s with no Relevant Non-NRC Experience). Additionally, recent clarifications in reporting requirements explicitly excluded demographic data from a small population of non-ROP residents (e.g. new construction and fuel facility inspectors) with higher levels of Relevant Non-NRC Experience.

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



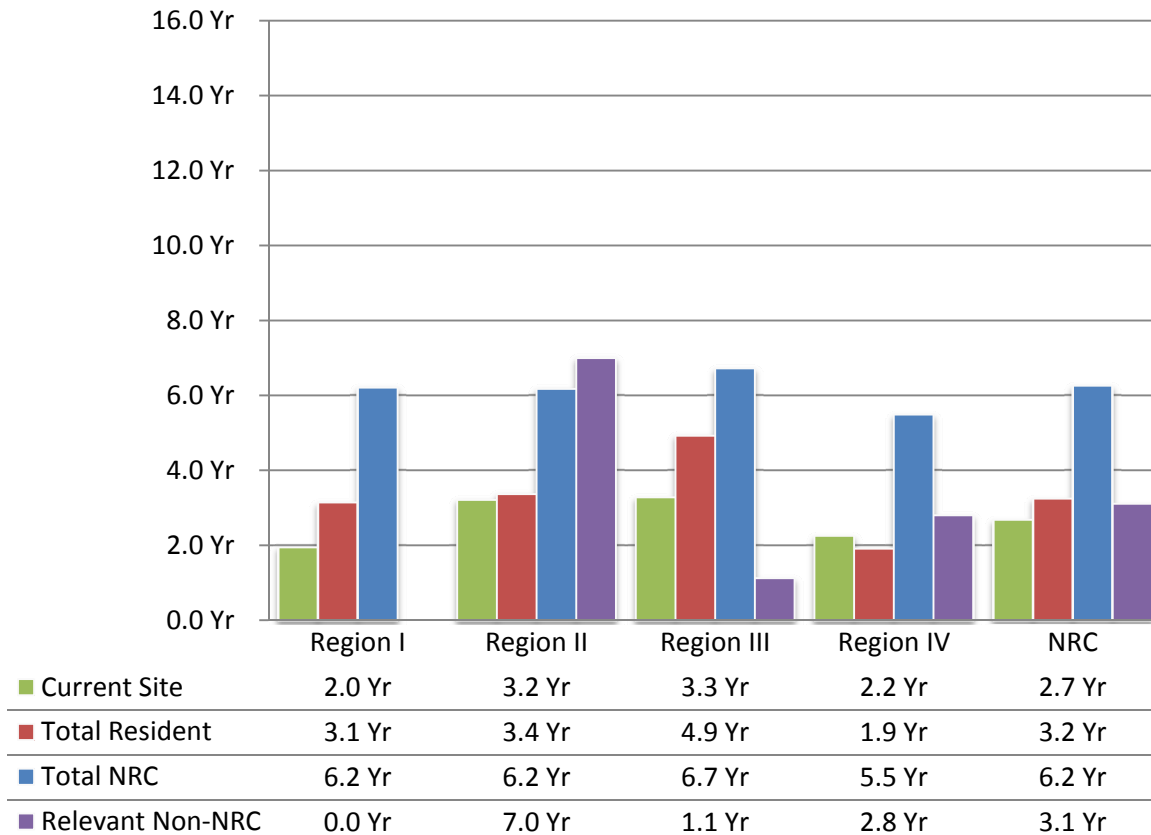
Analysis of Figure 1b, “Average Resident Inspector Experience Trend (Metric O-13),” reflecting average RI experience trends from 2007 to 2013, reveals (in a way similar to Figure 1a) moderately increasing trends in Total NRC (up 1.2 years / 22 percent) and Total Resident (up 0.6 years / 20 percent). However, it also reveals a declining trend in Relevant Non-NRC Experience (down 6.7 years / 58 percent). In terms of the change, in years, of average resident experience from 2007 to 2013, the decline in Relevant Non-NRC Experience, at 6.7 years, is dominant, more than three times the other experience changes combined and continuing to decline.

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



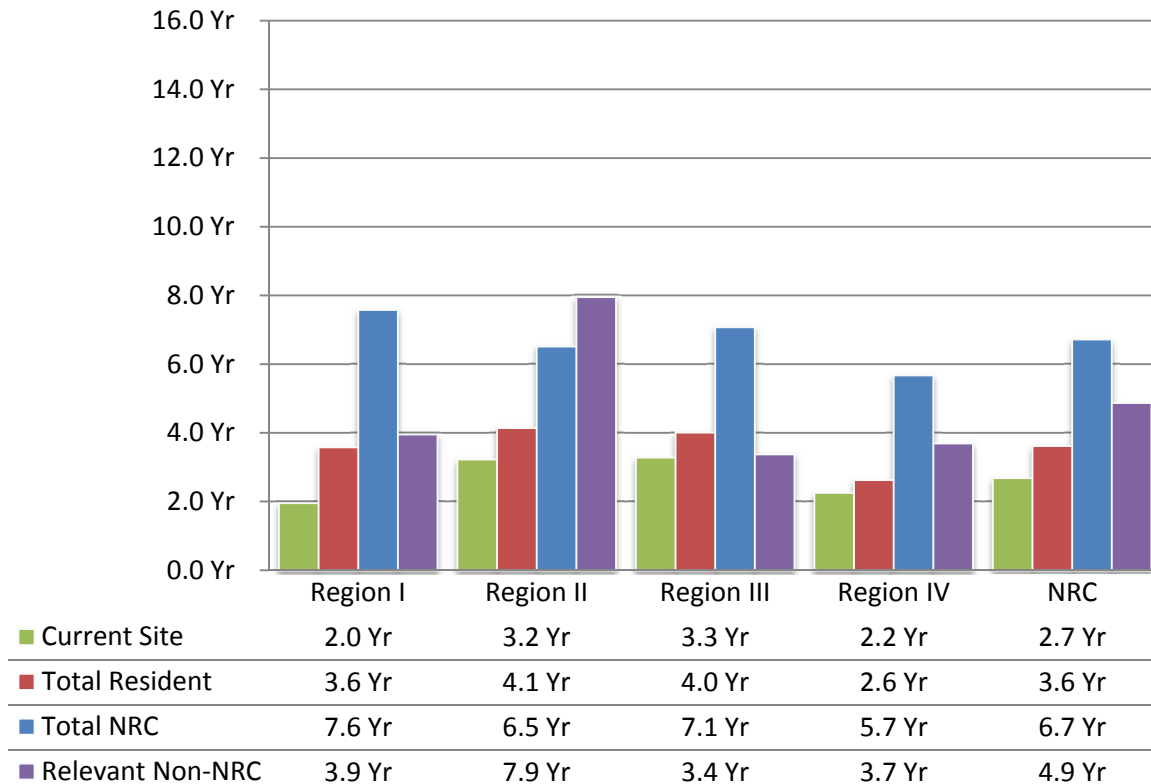
Analysis of Figure 2a, “2013 Median Resident Inspector Experience by Region (Metric O-13),” reflecting 2013 median RI experience by region, reveals the least regional variance in Total NRC (from minus-12 to plus-7 percent of the NRC value). The greatest regional variance was observed in Relevant Non-NRC (from minus-100 to plus-126 percent). Regional variance for Total Resident and Current Site fell in between.

**Figure 2a 2013 Median Resident Inspector Experience by Region (Metric O-13)**



Analysis of Figure 2b, “2013 Average Resident Inspector Experience by Region,” reflecting the 2013 average RI experience by region, reveals (in a way similar to Figure 2a, above) the least regional variance in Total NRC (from minus-15 to plus-13 percent). Also similar to Figure 2a: The greatest regional variance was observed in Relevant Non-NRC (from minus-30 to plus-64 percent). Regional variance for Total Resident and Current Site fell in between.

**Figure 2b 2013 Average Resident Inspector Experience by Region (Metric O-13)**



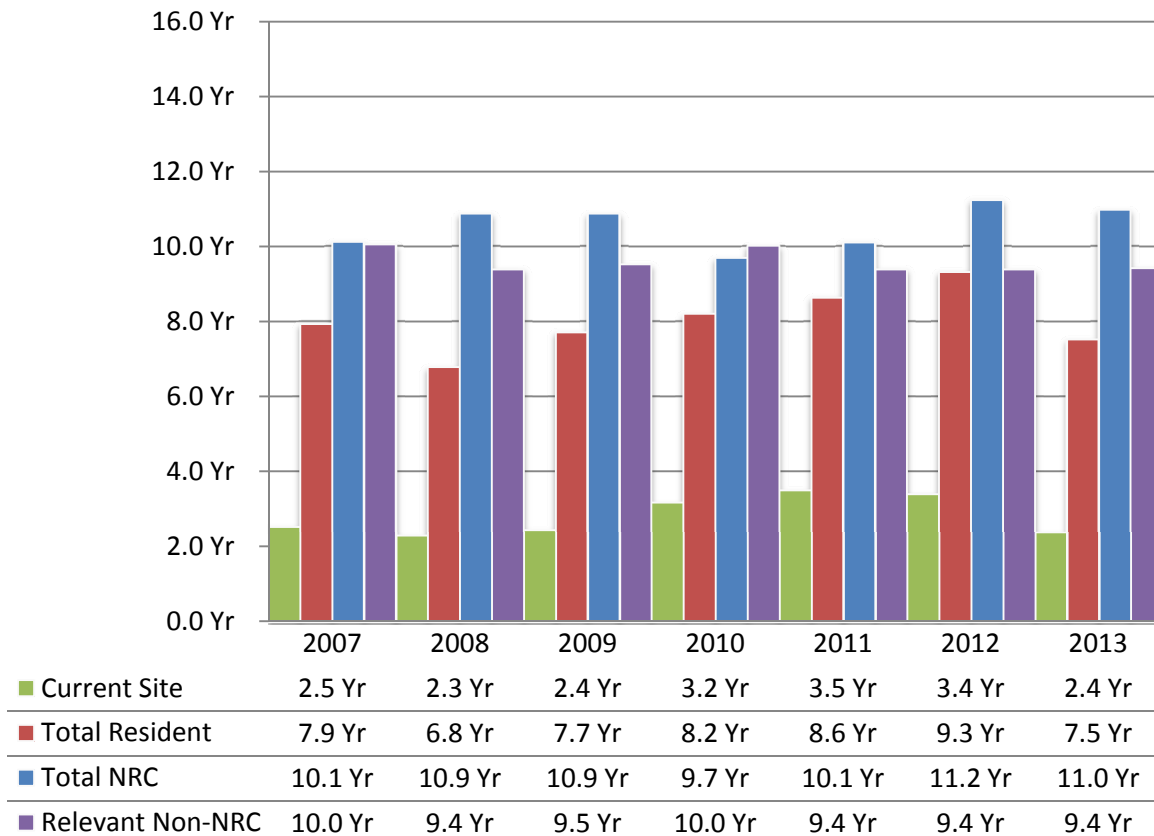
Overall, the RI experience analysis reveals a 2007 to 2013 increasing trend in Total NRC Time and Total Resident Time but a declining trend in Relevant Non-NRC experience. Likewise, the 2013 regional comparison analysis revealed substantially higher regional variation in RI Relevant Non-NRC experience than in any of the other RI experience parameters.



### Senior Resident Experience Analysis

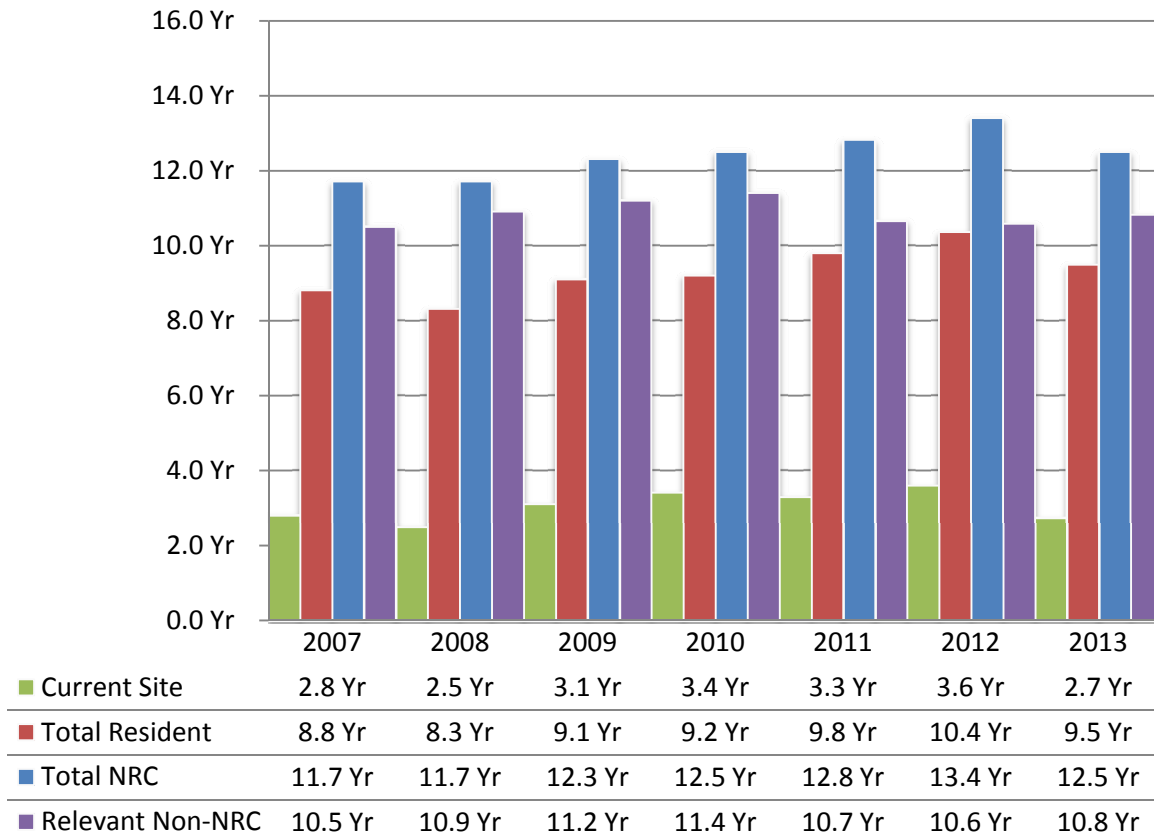
Analysis of Figure 3a, “Median Senior Resident Experience Trend (Metric O-13),” reflecting median SRI experience trends from 2007 to 2012, reveals minimal change. Unlike in analysis of Figure 2a, the declining trend in median Relevant Non-NRC Experience has not emerged, but it is expected to mirror the RI experience trend as RIs are promoted to SRI positions in the future.

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



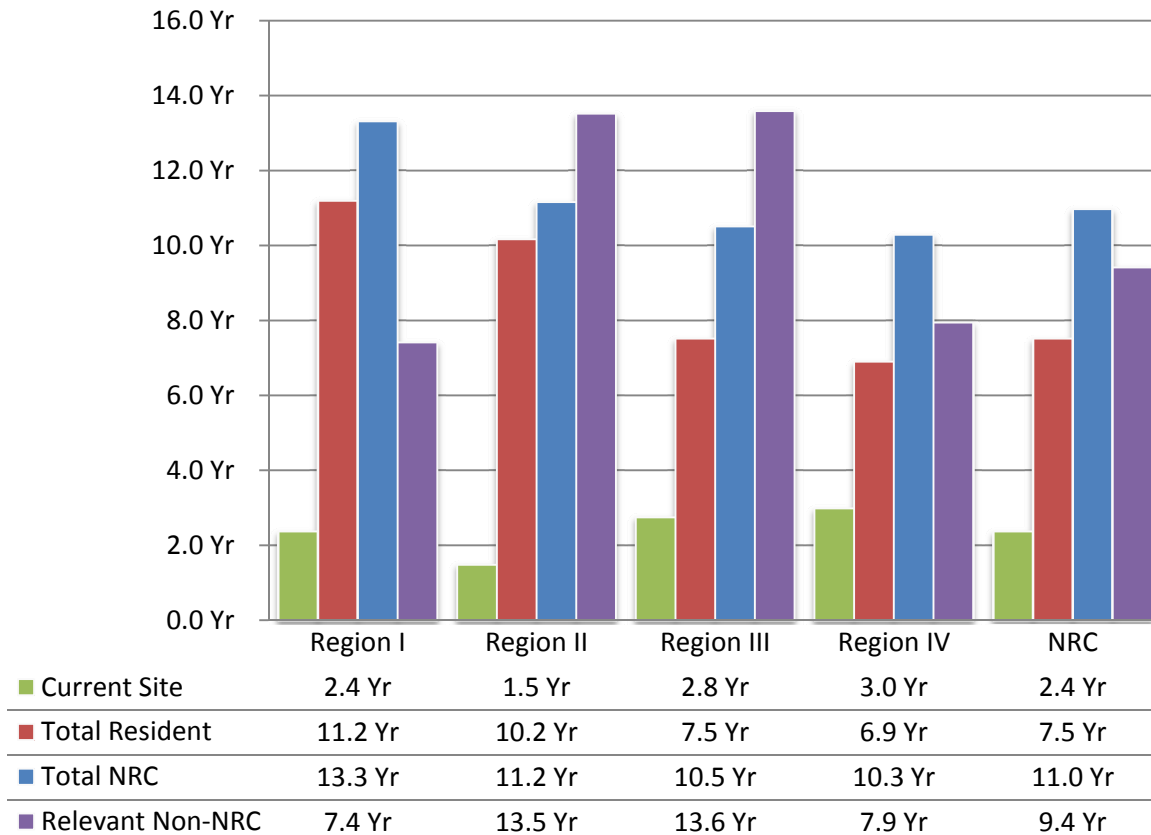
Analysis of Figure 3b, “Average Senior Resident Experience Trend (Metric O-13),” reflecting average SRI experience trends from 2007 to 2013 reveals (like Figure 3a above) minimal change. Unlike in analysis of Figure 2b, the declining trend in average Relevant Non-NRC Experience has not emerged but it is expected to mirror the RI experience trend as RI’s are promoted to SRI positions in the future.

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



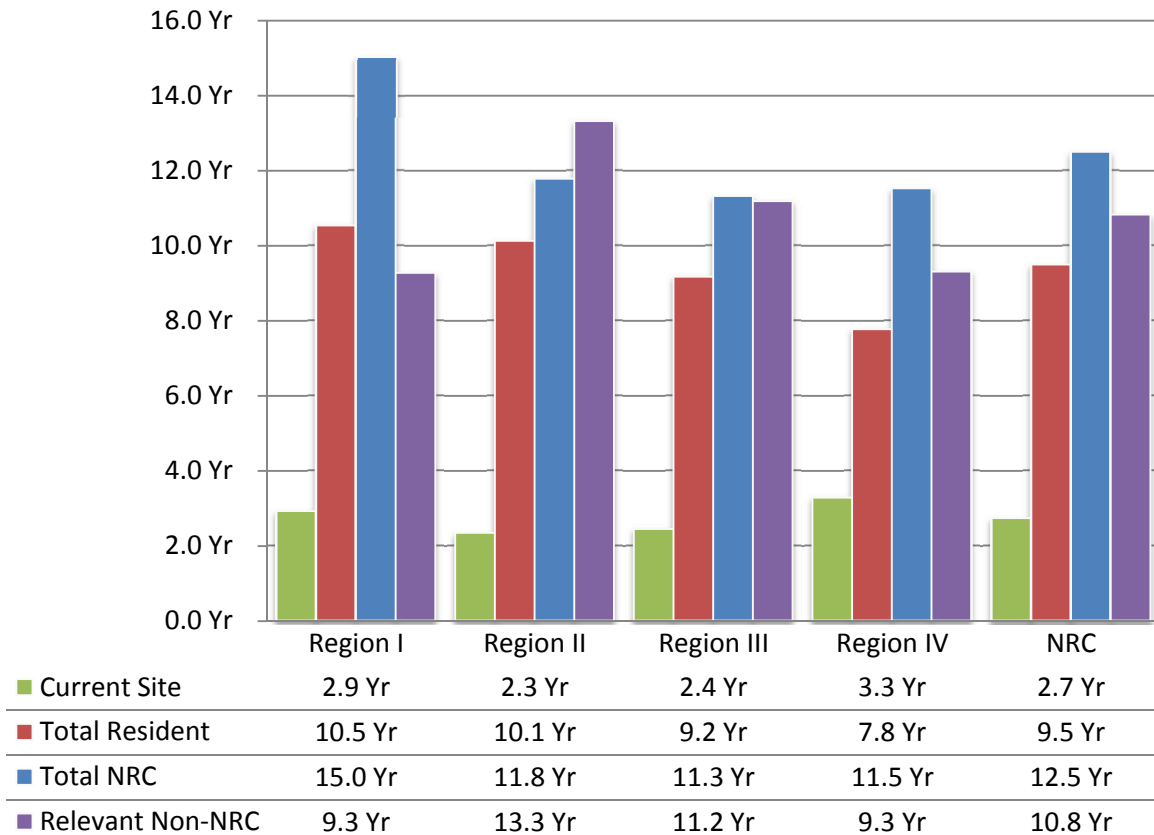
Analysis of Figure 4a, “2013 Median Senior Resident Experience by Region (Metric O-13),” reflecting the 2013 median SRI experience by region, reveals the least regional variance in Total NRC (from minus-6 to plus-21 percent). The greatest regional variance was observed in Relevant Non-NRC (from minus-21 to plus-44 percent). Regional variance for Total Resident and Current Site fell in between.

**Figure 4a 2013 Median Senior Resident Experience by Region (Metric O-13)**



Analysis of Figure 4b, “2013 Average Senior Resident Experience by Region (Metric O-13),” reflecting the 2013 average SRI experience by region, reveals the least regional variance in Total Resident (from minus-18 to plus-11 percent). In a way similar to Figure 4a, it reveals the greatest regional variance in Relevant Non-NRC (from minus-14 to plus-23 percent). Regional variance for Total NRC and Current Site fell in between.

**Figure 4b 2013 Average Senior Resident Experience by Region (Metric O-13)**



Overall, the SRI experience analysis reveals relatively stable levels during the period from 2007 to 2013. A relatively high 2013 SRI turnover rate appears to have contributed to a slight reduction in 2013 Current Site Time to the lowest level in four years. The remaining SRI experience measures have remained relatively constant.

### **Inspector Experience Conclusions**

- Analysis of 2007 through 2013 experience trends in Figures 1a, 1b, 3a, and 3b revealed:
  - A declining trend in RI Relevant Non-NRC Experience;
  - A 2013 reduction in SRI Current Site Time to the lowest level in four years—attributed, in part, to a high 2013 SRI turnover rate (see Section II, “Inspector Turnover”);
  - An increasing trend in RI Total NRC Time and Total Resident Time; and
  - Relatively stable SRI experience levels elsewhere
- Analysis of 2013 experience by region comparing Figures 2a, 2b, 4a, and 4b revealed:
  - The greatest regional variance in both RI and SRI experience was in Relevant Non-NRC Experience
  - The least regional variance in RI experience was in Total NRC Time.
  - The least regional variance in SRI experience was in Total NRC and Total Resident Experience
- The dominant declining trend and the high regional variance observed in RI Relevant Non-NRC Experience have not yet emerged in the SRI demographic. They could be expected to do so in the future as SRI’s with higher non-NRC experience levels and lower regional variance depart and current RI’s, which have lower levels of non-experience, are promoted to SRI positions

### **Recommendations**

Staff recommends no changes to the RI program at this time.

**Metric Criteria Met:** Yes

## **O-14      Analysis of Site Staffing**

**Definition:** Annually, collect and analyze data in order 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.

**Criteria:** Expect the staffing levels to be at least 90 percent program-wide. 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 reactors sites.

**NOTE:** Inspectors assigned to the site permanently or through a rotation with a minimum duration of six weeks shall be counted. Inspectors on six week or longer rotational assignments will be identified as such. Inspectors assigned to the site for less than six weeks will not be counted, but should be indicated as such. Additionally, the regions shall indicate sites where permanently assigned resident or senior resident inspectors are away from the site for an extended period of time (one continuous time period which is greater than 6 weeks). Only inspectors who have attained at least a basic inspector certification status, as defined by Appendix A to Inspection Manual Chapter 1245, shall be counted.

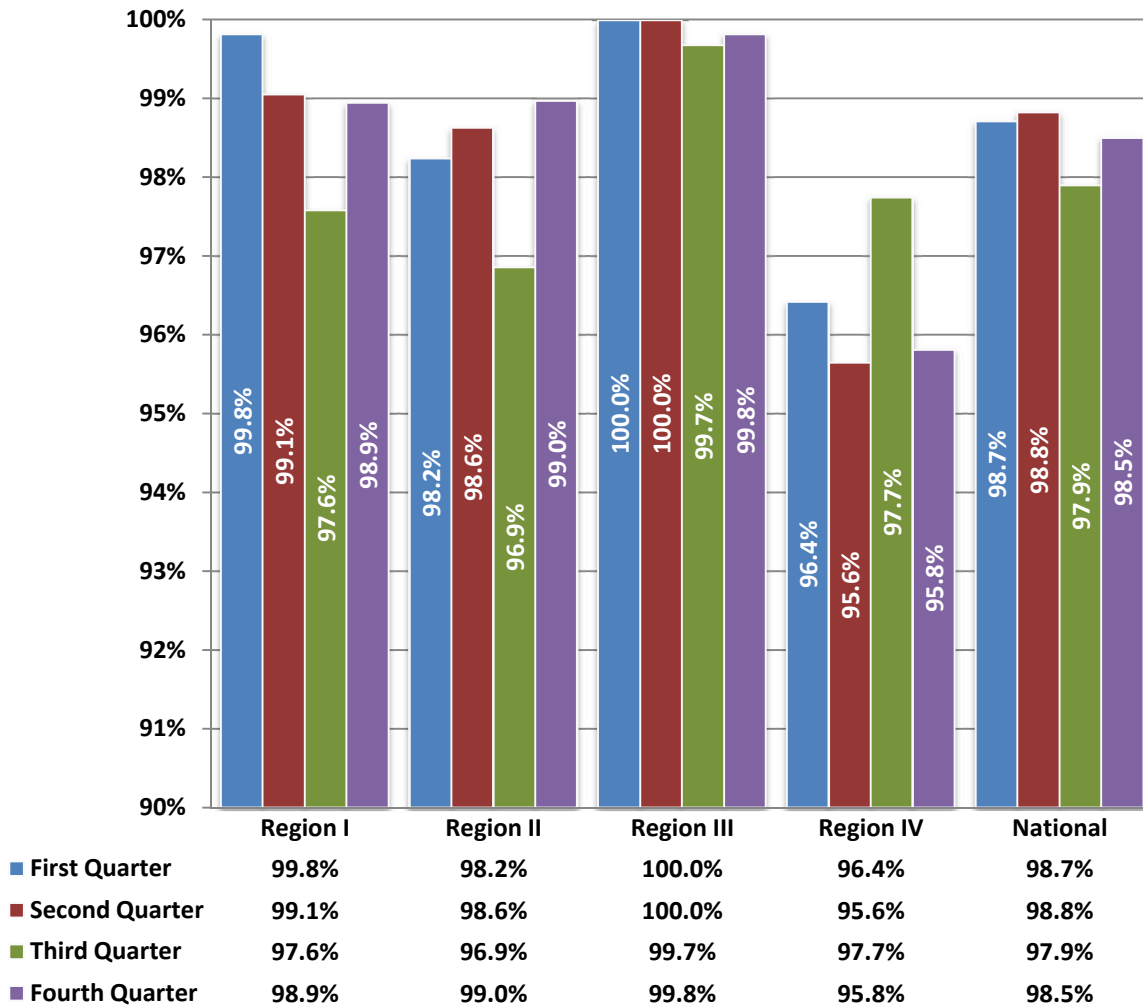
Data will indicate number of days a qualified resident and senior resident inspector are permanently assigned to the site during the year divided by the number of days in the year. Number of days spent on training; meetings away from the site; participation in team inspections; leave; or other temporary duties (e.g. acting for branch chiefs in his/her absence) will not be counted against the metric unless the absence exceed 6 continuous weeks.

**Goals Supported:** Effective, Predictable

**Analysis:** Permanent inspector staffing levels at each reactor site were analyzed for both RIs and SRI. Only those inspectors who have attained at least a basic inspector certification status, as defined in Appendix A, "Basic-Level Training and Qualification Journal," to IMC 1245, "Qualification Program for Operating Reactor Programs," 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, 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, “2013 Resident Program Permanent Staffing Levels,” below, confirms that all regions exceeded the 90 percent criteria by at least five percent with a national annual average of 98.5 percent for 2013. This reflects very slight decline over 2012 in which the national annual average was 99.4 percent. In 2013, national quarterly averages ranged from 98.0 to 98.6 percent while regional quarterly averages ranged from 95.5 percent to 100 percent.

**Figure 7 - 2013 Resident Program Permanent Site Staffing Levels**



Analysis of the data summarized in Table 1, “Individual Permanent Site Staffing Performance Trend,” below reveals that, in 2013, all sites satisfied the 90 percent permanent annual site staffing metric criteria.

**Table 1 Individual Permanent Site Staffing Performance Trend**

<i>Instances of Annual Site-Specific Staffing &lt; 90 percent</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>
Number of Sites with < 90 percent annual site staffing	9	5	5	3	3	0	0

### **Permanent Site Staffing Conclusions**

- During the period from 2007 through 2013, inspector permanent site staffing trends remained relatively stable or improving.
  - Permanent Site Staffing, at the regional quarterly and annual level, remains stable and well above the 90 percent staffing goal.
  - Individually, all sites satisfied the 90 percent staffing goal established metric.

### **Recommendations**

Staff recommends no changes to the RI program at this time.

**Metric Criteria Met:** Yes



## **O-15      Analysis of ROP Training and Qualifications**

**Definition:** Annually, evaluate the implementation of IMC 1245, "Qualification Program for the Office of Nuclear Reactor Regulation Programs," 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. An evaluation of training effectiveness is included in the annual ROP self-assessment Commission paper.

**Goals Supported:** Effective, Predictable, Understandable

**Analysis:** The staff continued to use the ROP feedback process to improve the initial and continuing inspector training programs to produce and maintain well-qualified, competent inspectors. Recommendations identified by the staff were reviewed and incorporated into inspector training standards, as appropriate.

The staff developed and implemented near-term, basic training on common safety culture language for nuclear power reactors to ensure clearer and more consistent communication between the NRC and industry. The staff is evaluating whether more comprehensive training is needed.

In response to an Office of Inspector General audit, a training needs assessment (TNA) will be conducted in CY 2014 to evaluate the effectiveness of training programs used to certify different types of inspectors. In addition, the staff is exploring new methods to deliver training beyond the traditional classroom model to increase use of technology, social learning, and advanced knowledge transfer techniques. Insights from the TNA will be used to improve training effectiveness and to identify delivery methods that reduce travel, shorten time to qualification, and improve access to learning materials.

The staff developed refresher training on the operability determination process that will be conducted in CY 2014. The staff identified that additional training was needed on the use of Standardized Plant Analysis Risk model tools, specifically, the SDP workspace and Plant Risk Information eBook. This training is planned to be implemented in 2014.

The staff of the Office of Nuclear Security and Incident Response (NSIR) conducted training on the baseline inspection program and related refresher training before implementing the newly revised baseline inspection program. To promote consistency in the assessment and evaluation of licensee cyber security programs, the NSIR staff continues to accompany inspectors during cyber security

inspections and to vet associated cyber security findings through the Security Issues Forum. Additionally, systems and target set training was provided to the Cyber Technical Contractors to enhance their support of Cyber Security Inspection activities.

**Metric Criteria Met:** Yes

**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. A detailed regulatory impact summary is included in the annual ROP self-assessment Commission paper.

**Goals Supported:** Effective, Open, Understandable

**Analysis:** The staff received and evaluated feedback from licensees as part of the regulatory impact process. Over the past year, the staff received and compiled feedback from numerous site visits to reactor sites across all four regions. The favorable percentage remained high and the distribution of comments was similar to previous years. The few unfavorable comments were focused primarily in discreet areas, including the cumulative effects of regulation and the lack of clear guidance for transitioning from operating to decommissioning status. Enclosure 2, "Regulatory Impact Summary," of the ROP self-assessment Commission paper discusses the feedback and the staff's evaluation.

**Metric Criteria Met:** Yes