

Resident Inspector Demographics

Scope and Objectives

This enclosure is the annual update on demographic data for inspectors assigned to the resident inspector (RI) program as originally requested by the Commission in its staff requirements memorandum (SRM) for COMGJD-98-001/COMEXM-98-002, "Discussion of Resident Inspector Demographics and the Balance between Expertise and Objectivity," dated April 8, 1998 (Agencywide Documents Access and Management System Accession No. ML003753515). The scope and breadth of this annual update have evolved over the years to address requests from the Commission in subsequent SRMs, recommendations from the Davis-Besse Lessons Learned Task Force (DBLLTF), and other enhancements to provide a more focused review.

The RI program demographic analyses examine three primary functional areas: inspector experience, inspector turnover, and site staffing. The results are discussed in Sections I, II, and III below and illustrated in Figures 1 through 7 at the conclusion of this enclosure. Several of the analyses separately examine data from the RI and senior resident inspector (SRI) groups while other analyses combine data from these groups into region-based or national analyses and trends. Section IV seeks to directly correlate the analyses of Sections I, II, and III, to prior agency actions to enhance relocation and retention of employees, the effectiveness of which was reviewed in SECY-11-0180, "Effectiveness Review of Actions to Enhance Relocation and Retention of Employees," dated December 21, 2011 (ADAMS ML11347A263). Finally, Section V provides conclusions.

I. Inspector Experience

In accordance with Appendix A to Inspection Manual Chapter (IMC) 0307, "Reactor Oversight Process Self-Assessment Program," dated March 23, 2009, experience analysis consists of the following four data sets:

- (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 the NRC. Examples of relevant non-NRC experience include operation, engineering, maintenance, or construction experience with commercial nuclear power plants, naval shipyards, U.S. Department of Energy facilities, or the U.S. Navy's nuclear power program.

In analyzing the following experience parameters, the staff used both mean and median values from November 2007 through November 2011. Calendar-year data were used for turnover and staffing analysis.

RI Group Experience Analysis

Analysis of the data summarized in Figure 1, RI Group Median Experience 5-Year Trend, reflects a downward trend in median relevant non-NRC experience for the RI group, declining from 10.4 years in 2007 to 4.5 years in 2011. The rate of decline is lessening. To better evaluate the total experience base, the median figures for NRC time and relevant non-NRC experience were summed to “total experience,” which declined from 14.6 years in 2007 to 9.8 years in 2010 but leveled off and remained constant at 9.8 years in 2011. This reflects a balance, between 2010 and 2011, between the rate of decline in relevant non-NRC experience and the rate of increase in NRC time. No other meaningful trend was observed for the RI group.

Analysis of the data summarized in Figure 1a, RI Group Mean Experience 5-year Trend, reflects trends similar to, but less pronounced than, those reflected in Figure 1. These trends include a downward lessening trend in mean relevant non-NRC experience for the RI group, declining from 11.6 years in 2007 to 7.1 years in 2011. Total experience likewise declined from 17.1 years in 2007 to 13.2 years in 2010 but rose slightly to 13.5 years in 2011. This reflects the result of a lessening downward trend in relevant non-NRC experience combined with an increasingly positive trend in NRC time, which increased from 5.7 years to 6.5 years between 2010 and 2011. No other meaningful trend was observed for the RI group.

Analysis of the data summarized in Figure 2, 2011 RI Group Median Experience by Region, reveals a Region I RI group median relevant non-NRC experience of 0.0 years (e.g., slightly more than half of the Region I RI group population reported no relevant non-NRC experience). This value remains unchanged from last year. The relevant non-NRC experience median ranges from 2.3 to 6.0 years among the other regions. The NRC average is 4.5 years. The lower Region I relevant non-NRC experience is offset by the Region I NRC time median of 6.2 years, which is higher than the other regions and the NRC average of 5.3 years. Analysis of the data summarized in Figure 2a, 2011 RI Group Mean Experience by Region, reveals no significant variability between regions in RI group mean experience values.

Overall, the RI group analysis revealed a five-year declining trend in Relevant Non-NRC experience from 2007 to 2011 and a recent increase in NRC time resulting in declining total experience between 2007 and 2010, stabilizing between 2010 and 2011.

According to SECY-11-0180, “Effectiveness Review of Actions to Enhance Relocation and Retention of Employees,” dated December 21, 2011, external events continue to cloud the effectiveness review and to challenge the effectiveness of actions to enhance relocation and retention of employees. The review specifically notes the distressed job and housing markets continue to be external influences on the decisions of RIs and on those considering the RI program. The same factors apply to determining the specific causes for those trends identified in this review.

SRI Group Experience Analysis

Analysis of the data summarized in Figure 3, SRI Group Median Experience 5-Year Trend, like the RI group, reflect a four-year upward trend in total resident time, rising from 6.8 years in 2008 to 8.6 years in 2011. Unlike the declining trend in relevant non-NRC experience in the RI group, the SRI group reflects only small fluctuations with the 2011 value of 9.4 years equal to that in 2008. Also unlike the increase in total experience between 2010 and 2011 in the RI group, the SRI group total experience declined slightly from 9.7 years in 2010 to 9.5 years in 2011.

Analysis of the data summarized in Figure 3a, SRI Group Mean Experience 5-Year Trend, reflects a steady increase in NRC time from 11.7 years in 2007 to 12.8 years in 2011. Likewise, Total resident time has trended upward from 8.8 years in 2007 to 9.8 years in 2011. Relevant non-NRC experience increased from 10.5 years in 2007 to 11.4 years in 2010 but subsequently declined to 10.7 years in 2011. Total experience trended upward from 22.2 years in 2007 to 23.9 years in 2010 but declined to 23.5 years in 2011.

Analysis of the data summarized in Figure 4, 2011 SRI Group Median Experience by Region, and in Figure 4a, 2011 SRI Group Mean Experience by Region, reveals no significant variability between regions in SRI group experience values.

Overall, the SRI group experience analysis revealed no substantial trends or regional deviations. Experience levels remain relatively high. However, given that the SRI group is comprised predominantly of former RIs (e.g., 9 of 14 RIs that turned over in 2011 became SRIs), there is a reasonable likelihood that some RI group experience trends, such as the declining trend in relevant non-NRC experience, will migrate into the SRI group as those RIs are promoted to SRI positions.

II. Inspector Turnover

The rate of RI program inspector turnover is evaluated and trended, and turnovers are categorized for the RI and SRI groups, pooled across regions. This analysis supports the identification and evaluation of agency actions to manage turnover rates. Turnovers tabulated in Figures 5 and 6 reflect those RI and SRI departures from current positions during the calendar year that were for causes listed in the respective figures. Departures for causes not specifically listed in the tables, such as RI and SRI site-to-site transfers, are not captured as turnovers. Turnover rates were calculated by dividing the total turnovers by the reported population, which was comprised of 72 RIs and 66 SRIs in 2011.

2011 RI Group Turnover

Analysis of the data summarized in Figure 5, RI Group 5-Year Turnover Trend, reveals that the rate of turnover continues to trend downward from a high of 46 percent in 2007 to 19 percent in 2011, with a 23 percent bump in 2010. Seventy-two RI group positions were tabulated for turnover analysis in 2011. Consistent with prior years, promotion to SRI dominates RI turnovers, accounting for 9 of 14. The second leading cause of RI turnover continues to be movement to non-RI positions within the NRC, accounting for 3 of 14. Finally, 2 of 14 RI turnovers were the result of resignations from the NRC, a rate that has remained constant for the last 3 years.

As a result of the high turnover in 2007 (46 percent), about half of the RIs were in new assignments, which likely contributed to the reduced turnover in the following 3 years. In addition, external forces, such as the current real estate market, have resulted in a negative incentive for turnover and have caused several SRIs and RIs to apply for extensions beyond 7 years. Finally, as discussed in SECY-11-0180, the staff has implemented a number of initiatives to enhance retention of employees, which may also have contributed to the reduction in turnover.

2011 SRI Group Turnover

Analysis of the data summarized in Figure 6, SRI Group 5-Year Turnover Trend, reveals a 5-year trend that began with a high of 26 percent in 2007, trended downward to a low of 11 percent in 2009, followed by a slightly upward trend to 12 percent in 2011. Sixty-six SRI group positions were tabulated for turnover analysis in 2011. SRI turnover in 2011 was dominated by lateral movement to non-SRI positions within the NRC, accounting for 6 of 8 SRI turnovers and promotion to higher non-SRI positions accounting for 2 of 8 SRI turnovers. Unique to 2011, the data indicates that there were no SRI resignations or retirements.

III. Permanent Site Staffing

Site staffing analysis seeks to evaluate the agency's ability to provide continuity of regulatory oversight through timely assignment of permanent RI/SRI staff in response to a DBLLTF recommendation. Specifically, Item 3.3.5.3 recommended that the staff establish a measurement for RI/SRI staffing, including program expectations to satisfy minimum staffing levels. The staff developed and began tracking a site staffing metric of 90 percent programwide in response to that recommendation.

Permanent¹ inspector staffing levels at each of the reactor sites were analyzed for both RIs and SRIs to evaluate the agency's ability to provide continuity of regulatory oversight. Only 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," both dated December 29, 2011, were 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 fell below 90 percent was individually evaluated to establish reasons for any meaningful increase or decrease in the inspector staffing level. IMC 0307 provides details on the site staffing goal.

Analysis of the data summarized in Figure 7, 2011 Permanent Site Staffing Performance by Region, confirms that all regions exceeded the 90 percent criteria with a programwide 98.5 percent annual average for 2011. This was approximately equivalent to 2010 performance. Regional annual averages ranged from 97.0 to 99.9 percent. Quarterly averages ranged from 96.6 to 100.0 percent.

Analysis of the data summarized in Table 1, Individual Permanent Site Staffing Performance 5-Year Trend, reveals that, in 2011, three sites reported annual permanent site staffing rates of 84, 87, and 77 percent, respectively, and were evaluated individually. The first site, Brunswick, experienced periods when the RI position had a gap while the RI completed an SRI rotational assignment elsewhere and following permanent reassignment of the RI to SRI at another site. There were also periods when rotational assignees staffed the site for less than 6 weeks. At the second site, Vogtle, there was a gap in the RI position while the RI completed an SRI rotational

¹ Permanent in this context refers to inspectors assigned to the site permanently or through a rotation with a minimum duration of 6 weeks. Sites where permanently assigned RIs or SRIs are away from the site for a continuous period longer than 6 weeks will be considered gapped unless the positions are filled through a rotation with a minimum duration of 6 weeks. Away periods for training, meetings, team inspections, leave, or other temporary duties are not counted against the goal unless the absence exceeds 6 continuous weeks.

assignment elsewhere. The third site, Grand Gulf, had a gap due to difficulties in filling the RI position.

Site coverage at all three sites was maintained using nonpermanent inspector assignments. As reflected in Table 1, the number of sites reporting challenges in maintaining 90 percent permanent annual site staffing has declined steadily. The year 2011 equals 2010's best recorded performance since 2007 at three sites with less than 90 percent permanent annual site staffing.

Table 1 Individual Permanent Site Staffing Performance 5-Year Trend

<i>Instances of Annual Site-Specific Staffing < 90%</i>	2007	2008	2009	2010	2011
Number of Sites with < 90% site staffing	9	5	5	3	3

IV. Effectiveness Review of Actions to Enhance Relocation and Retention

Staff turnover within the NRC, whether caused by promotion, reassignment, retirement, or resignation, is an ongoing process from which the RI program is not insulated. To ensure that the RI program can continue to fulfill its mission, the Commission directed the staff in SRM M070531, "Briefing on Results of the Agency Action Review Meeting (AARM)," dated June 14, 2007, to evaluate recruitment, training, and development to confirm that there are adequate human resources to meet changing needs.

SECY-09-0050, "Actions to Enhance Relocation and Retention for Employees," dated March 30, 2009, informed the Commission of staff actions to enhance the relocation and retention of employees. The staff identified existing authorities and flexibilities that could be further developed and appropriately used to enhance the agency's relocation and retention processes. In the SRM for SECY-09-0050, dated June 26, 2009, the Commission approved the staff's proposals to use existing authorities to enhance the agency's relocation and retention processes to address the turnover in SRI and RI positions, and asked the staff to report to the Commission within 2 years on the effectiveness of these changes. In accordance with this SRM, the staff reported on the effectiveness of the relocation and retention enhancements for SRIs and RIs in SECY-11-0180, "Effectiveness Review of Actions to Enhance Relocation and Retention of Employees," dated December 21, 2011.

V. Conclusions

The staff has concluded that sites continue to be staffed with experienced RIs and SRIs. The staff largely credits the Commission's support and ongoing efforts to develop and maintain a pool of capable potential resident inspector candidates to fill anticipated and unanticipated vacancies for this continuing success.

Staff turnover rates in both the RI and SRI ranks have remained relatively stable since 2009.

Nationwide analysis confirms that staffing remains stable and well above the 90 percent staffing goal while the number of instances of individual site staffing below 90 percent remains low and stable.

The NRC initiated several actions to ensure an experienced and stable RI and SRI program, as described in SECY-09-0050. The agency recently reported on the effectiveness of these enhancements in SECY-11-0180.

The staff plans to continue to closely monitor RI and SRI demographics and site staffing in 2012.

Figure 1 RI Group Median Experience 5-Year Trend

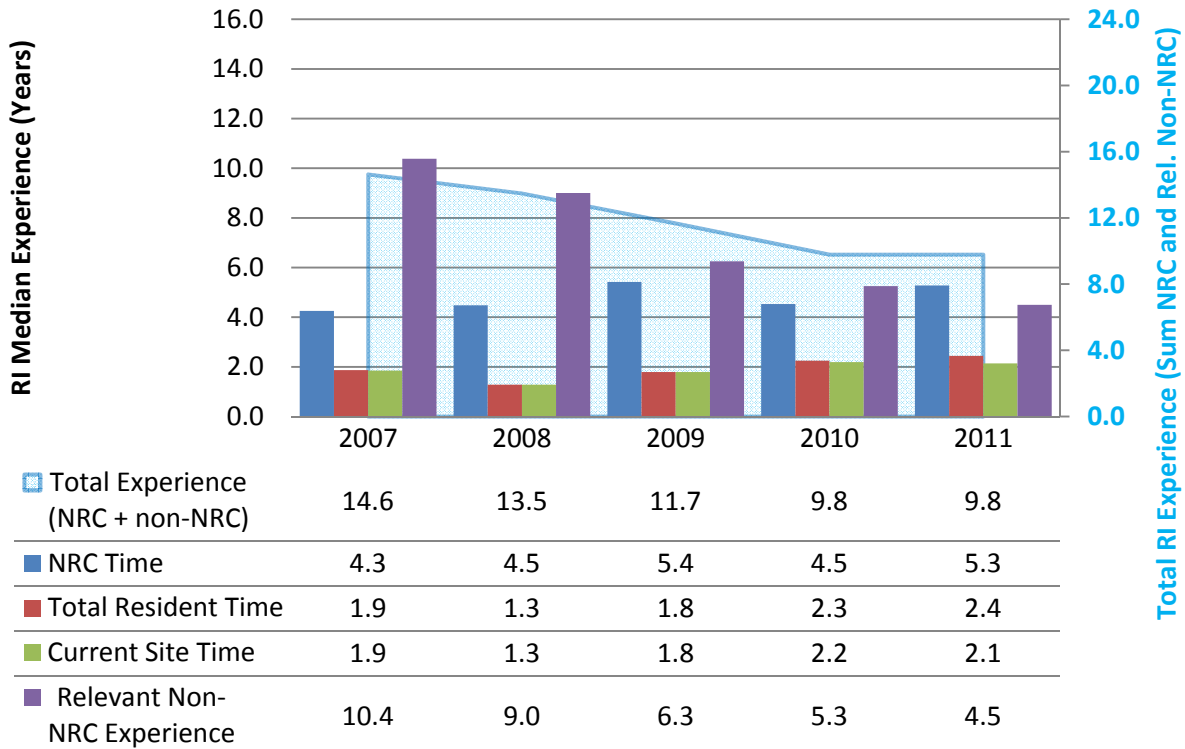


Figure 1a RI Group Mean Experience 5-Year Trend

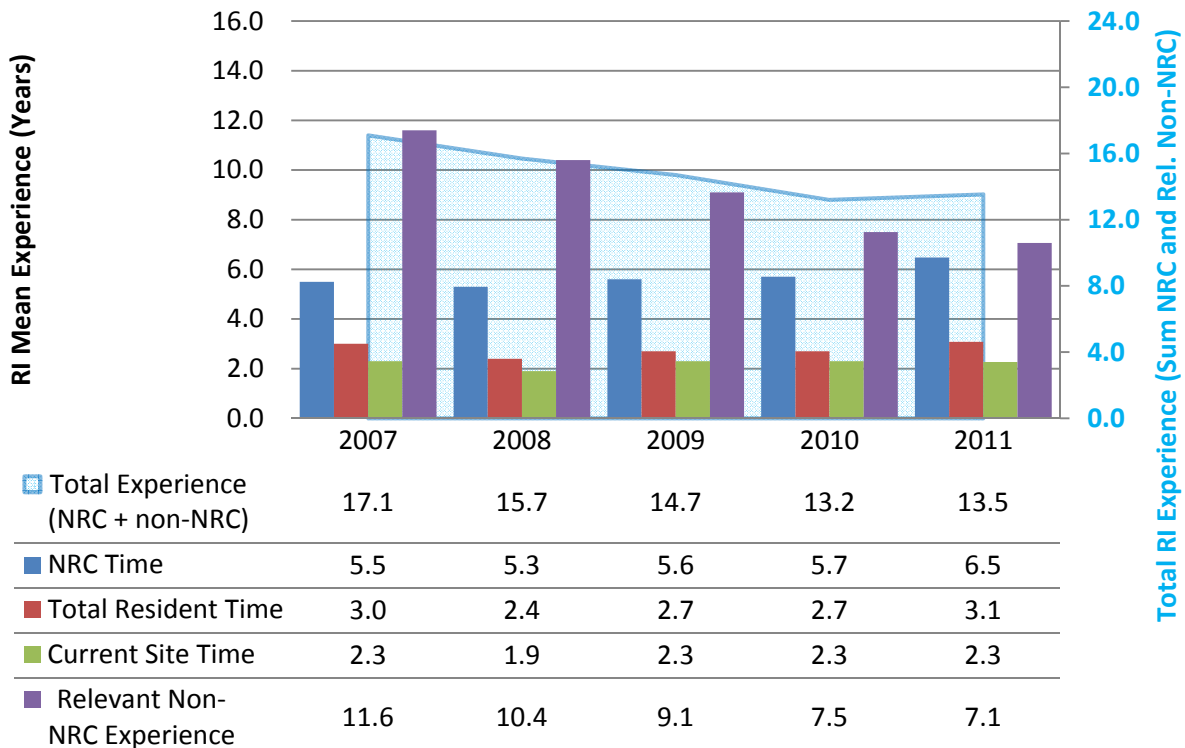


Figure 2 2011 RI Group Median Experience by Region

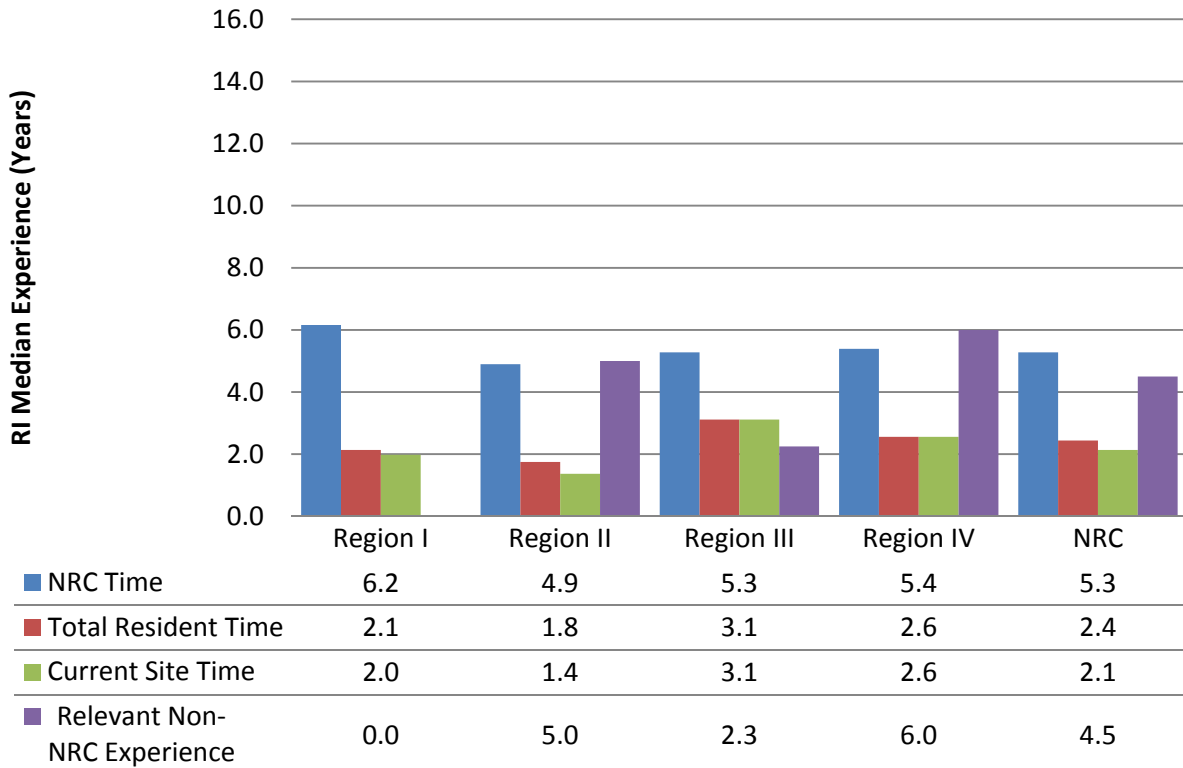


Figure 2a 2011 RI Group Mean Experience by Region

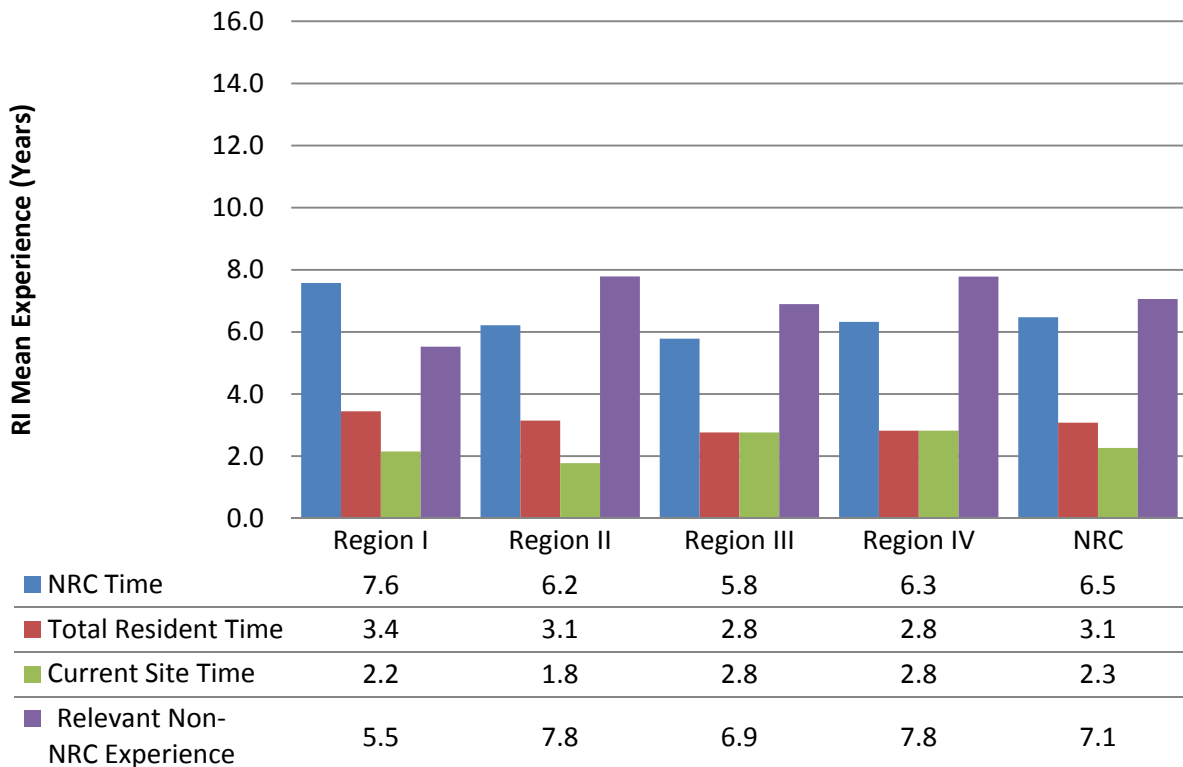


Figure 3 SRI Group Median Experience 5-Year Trend

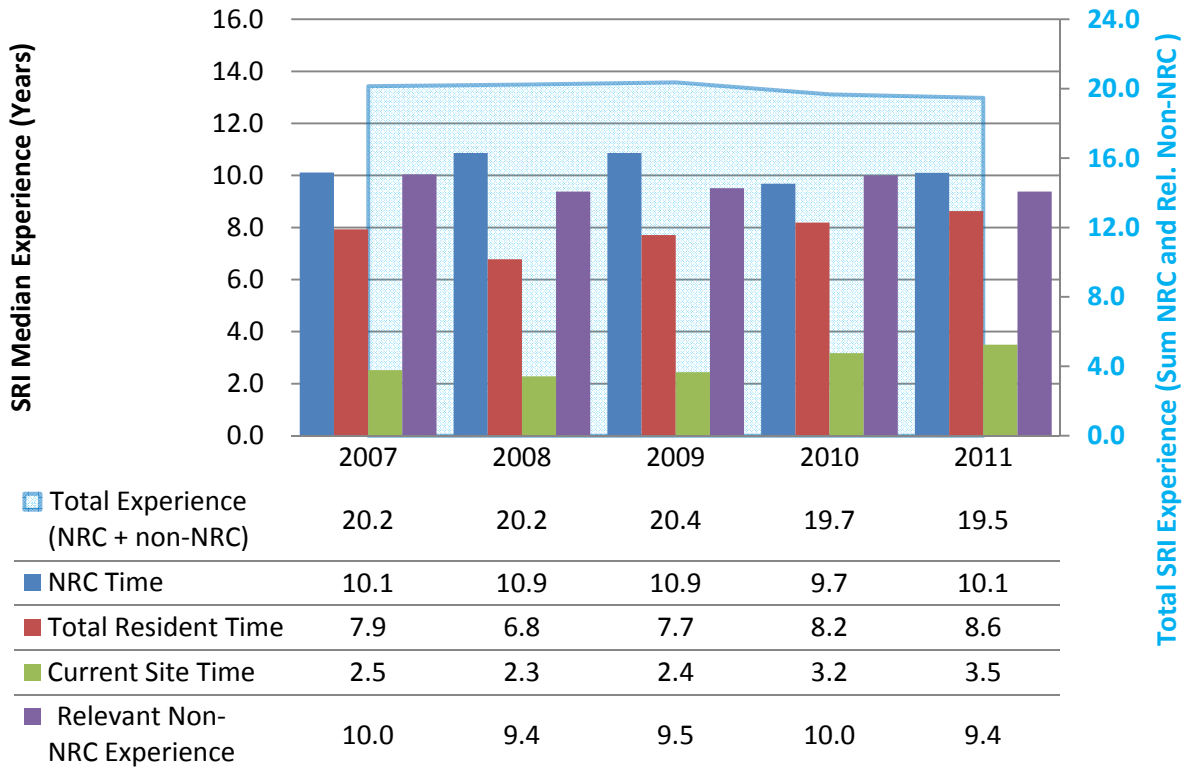


Figure 3a SRI Group Mean Experience 5-Year Trend

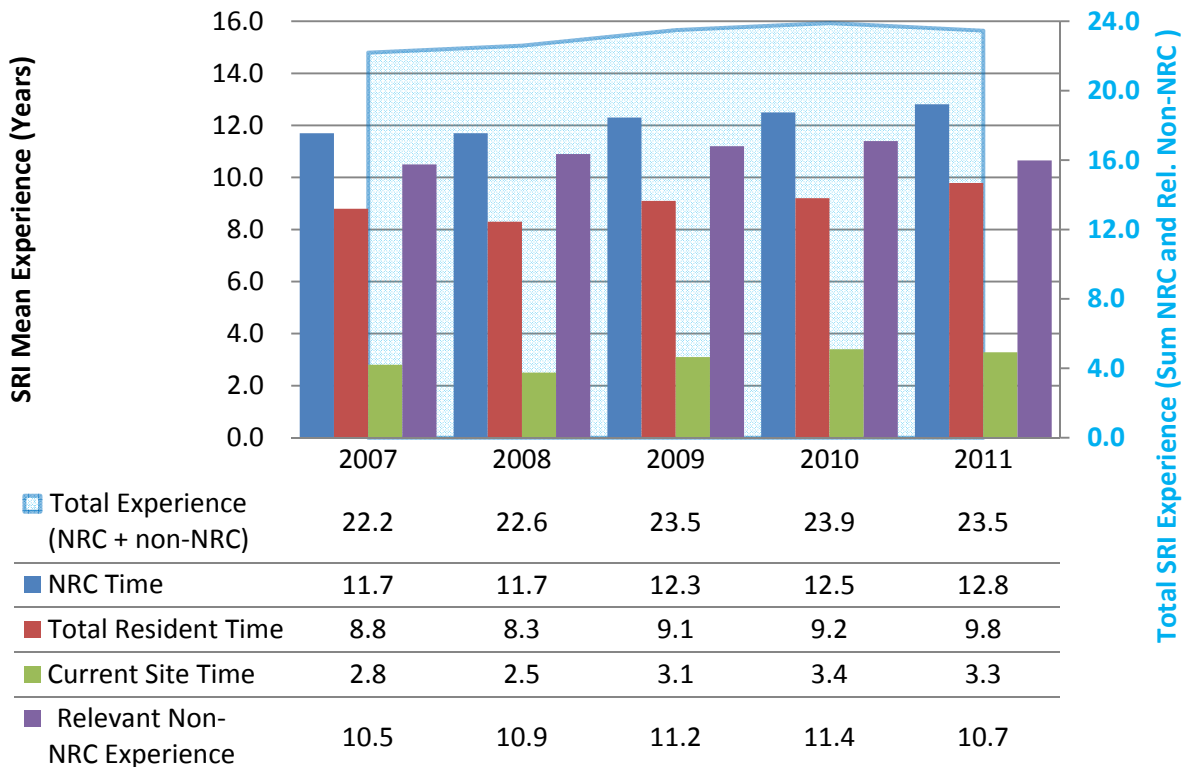


Figure 4 2011 SRI Group Median Experience by Region

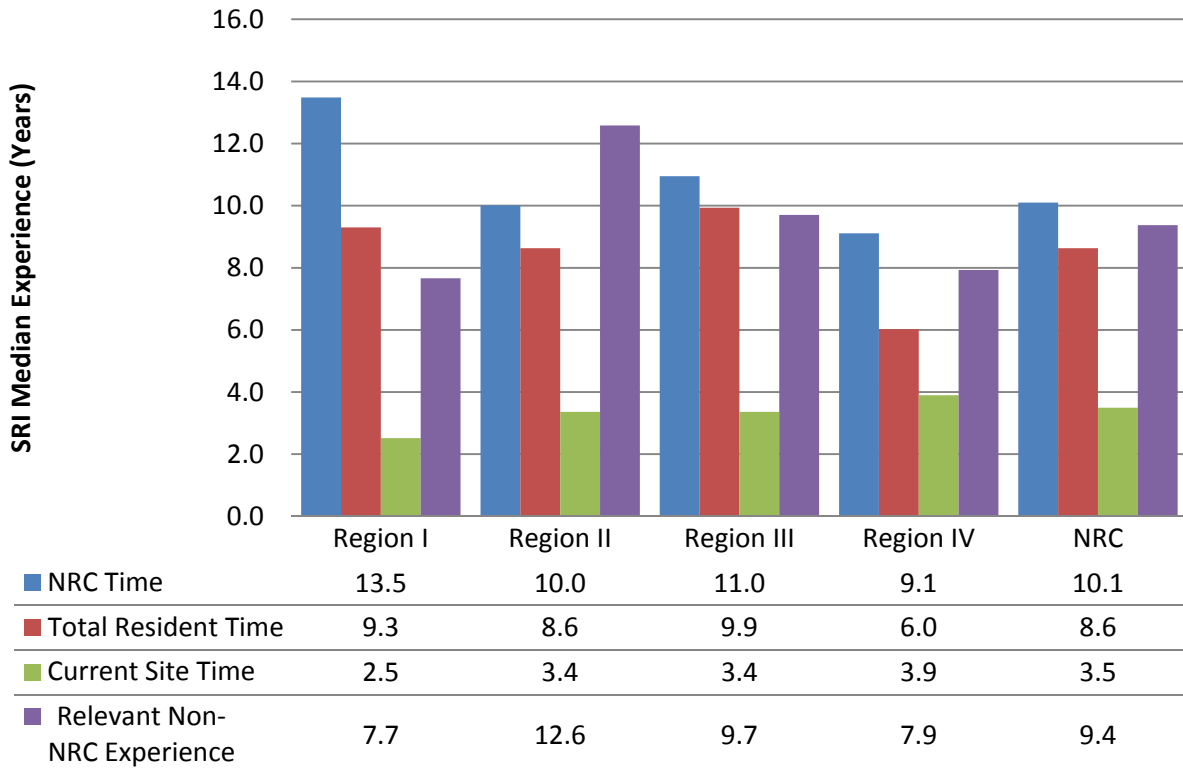


Figure 4a 2011 SRI Group Mean Experience by Region

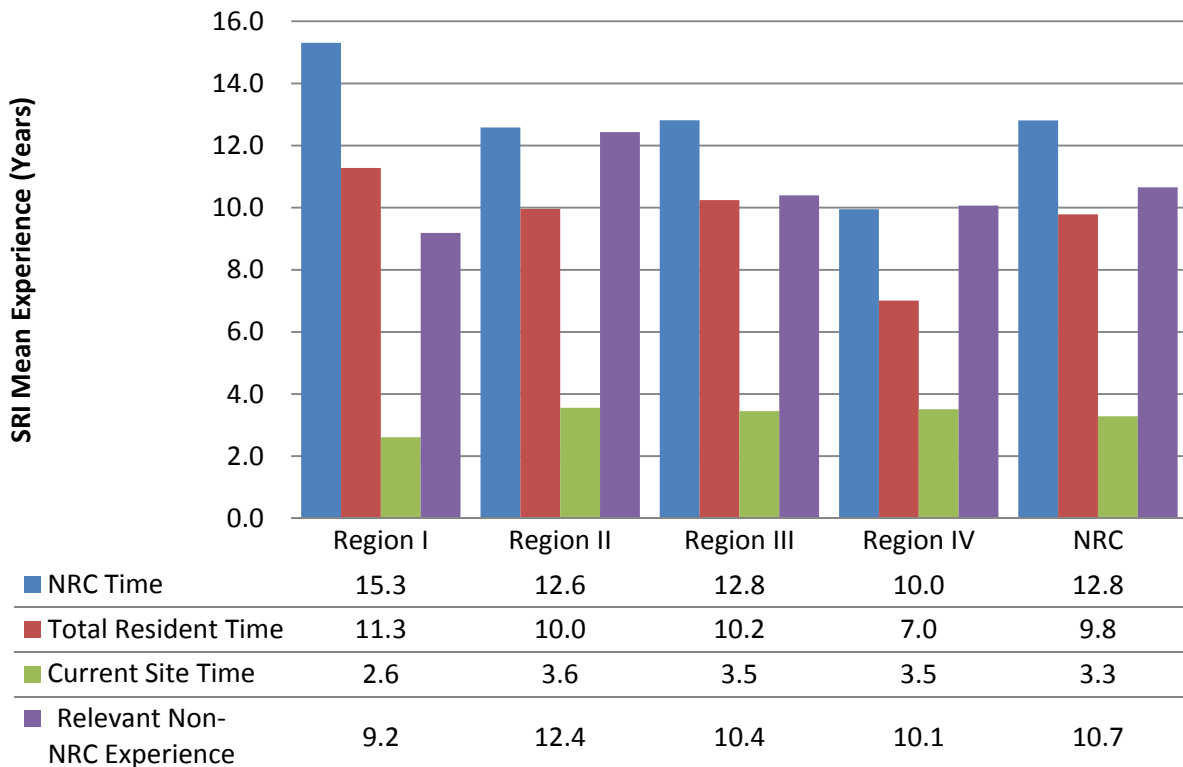


Figure 5 RI Group 5-Year Turnover Trend

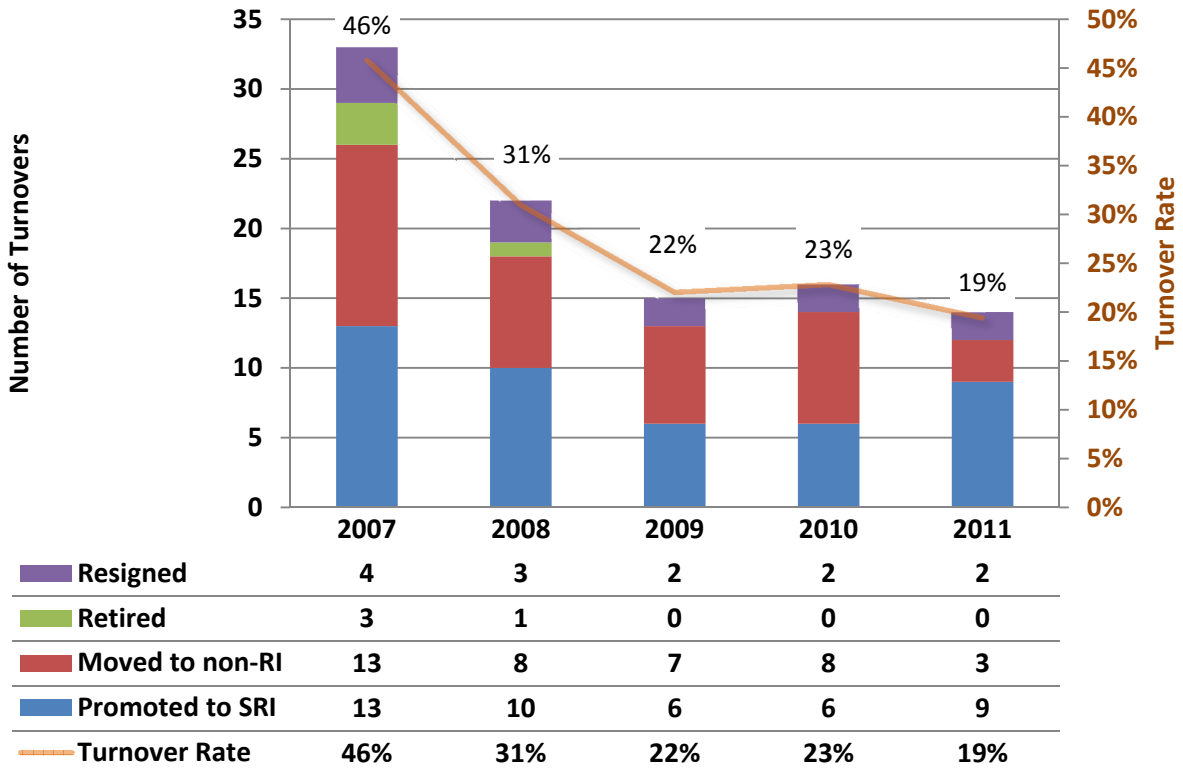


Figure 6 SRI Group 5-Year Turnover Trend

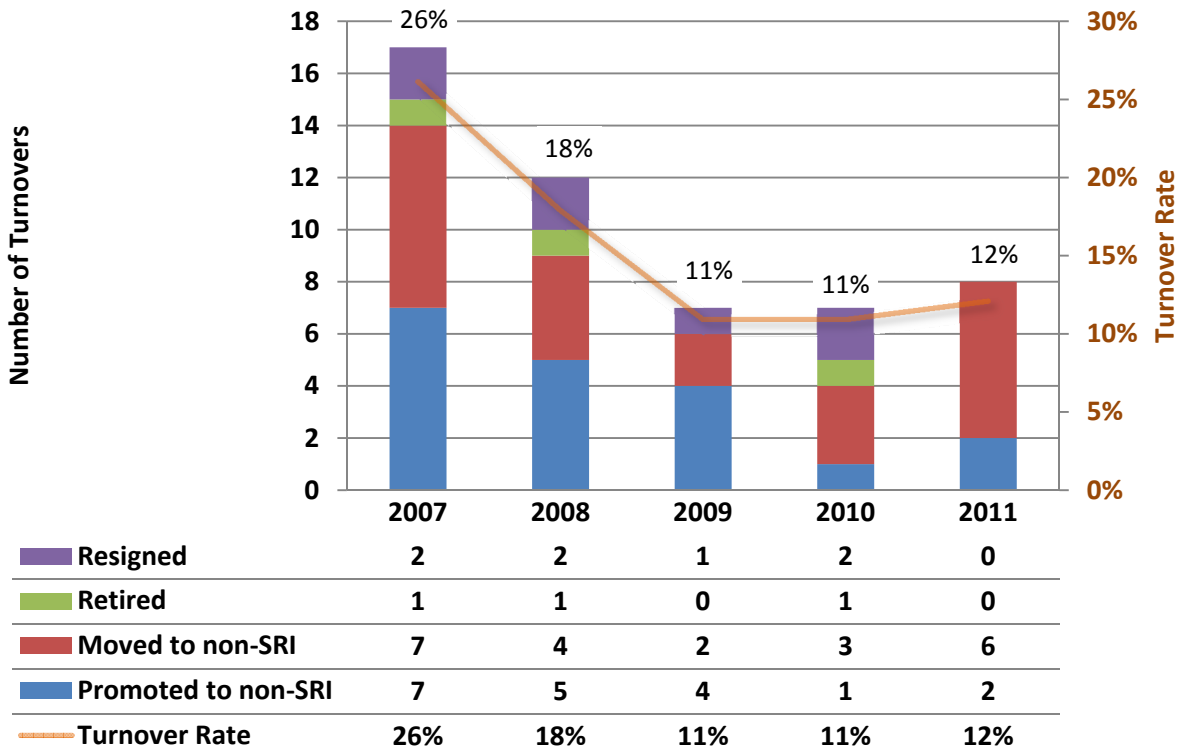


Figure 7 2011 Permanent Site Staffing Performance by Region

