

## **Resident Inspector Demographics**

### **Scope and Objectives**

This enclosure is the annual update on demographic data for inspectors assigned to the resident inspector (RI) program, 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," issued April 8, 1998. This analysis seeks to determine whether the actions of the U.S. Nuclear Regulatory Commission (NRC) associated with the RI program have resulted in a stable or increasing RI experience base and to identify any necessary improvements. This enclosure also provides an update on site staffing.

### **Resident Inspector Demographic Data**

The NRC's staff review of the demographics included an analysis of the overall program data for the RI and senior resident inspector (SRI) groups (see Tables 1–7 and Figures 1–10). Inspection Manual Chapter (IMC) 0307, "Reactor Oversight Process Self-Assessment Program," includes details regarding the RI program demographic data analysis. The staff used median values from the month of November in 2005 for each year through 2009 for statistical comparison.

The demographic analysis consists of the following four distinct 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.

### **Analysis of the 2009 Resident Inspector Group**

The RI demographic data for 2009 (see Table 1) indicates that the RI turnover rate has been on a downward trend from 2007 through 2009 (46 percent, 31 percent, and 22 percent). This is significant, given the 46-percent turnover rate in 2007, compared with 20 percent for 2006. Of the 15 RIs who left during 2009, 6 were promoted to SRI positions, 7 were either promoted or laterally reassigned to a regional office or Headquarters, and 2 resigned from the NRC.

The high turnover in 2007 resulted in about half of the RIs being in new assignments, which likely contributed to the reduced turnover in the following two years. In addition, the current real estate market has been a negative incentive for turnover, and caused several SRIs and RIs to apply for extensions beyond seven years. Finally, as discussed later in this enclosure, the staff has implemented a number of initiatives to attract and retain resident inspectors which may also

have contributed to the reduction in turnover. The staff will continue to monitor the affect of these initiatives on resident staff turnover.

Concurrent with the reduction in 2007 through 2009, NRC time (nationally) has steadily increased, and relevant non-NRC experience has steadily decreased (Table 2). Both of these trends may have resulted from the 2007–2009 turnover reduction. Table 6 shows a breakdown of experience data for RIs by region. This table shows that Region II has significantly greater relevant non-NRC experience than the other regions.

**Table 1 RI Turnover**

	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
<b>Promoted to SRI</b>	10	11	13	10	6
<b>Promoted/ Reassigned</b>	9	2	13	8	7
<b>Retired</b>	2	1	3	1	0
<b>Resigned</b>	2	0	4	3	2
<b>Total</b>	<b>23</b>	<b>14</b>	<b>33</b>	<b>22</b>	<b>15</b>
<b>Turnover Rate</b>	32%	20%	46%	31%	22%

**Table 2 RIs  
(Median Values in Years)**

	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
<b>NRC Time</b>	3.36	4.04	4.25	4.48	5.42
<b>Total Resident Time</b>	2.31	2.39	1.87	1.28	1.79
<b>Current Site Time</b>	2.25	2.23	1.85	1.28	1.79
<b>Relevant Non-NRC Experience</b>	10.63	10.75	10.38	9.00	6.25

**Analysis of the 2009 Senior Resident Inspector Group**

SRI demographic data for 2009 (see Tables 3 and 4) indicate that the SRI turnover rate for 2007 through 2009 steadily declined (26 percent, 18 percent, and 11 percent). The factors that influenced the reduction in RI turnover discussed previously also likely influenced the reduction in SRI turnover. In 2009, 7 of 66 SRIs left their SRI position at a specific site. Of these, 4 were promoted, 2 were reassigned (including SRIs who were laterally reassigned to another site),

and 1 resigned from the NRC. Table 4 indicates little variation nationally for the experience criteria. However, Table 7 indicates wide variance among regions for all but current site time.

**Table 3 SRI Turnover**

	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
<b>Promoted</b>	5	7	7	5	4
<b>Reassigned</b>	4	7	7	4	2
<b>Retired</b>	1	1	1	1	0
<b>Resigned</b>	0	1	2	2	1
<b>Total</b>	<b>10</b>	<b>16</b>	<b>17</b>	<b>12</b>	<b>7</b>
<b>Turnover Rate</b>	15%	24%	26%	18%	11%

**Table 4 SRIs  
(Median Values in Years)**

	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
<b>NRC Time</b>	8.84	9.28	10.11	10.86	10.06
<b>Total Resident Time</b>	7.54	7.77	7.93	6.78	7.71
<b>Current Site Time</b>	2.63	3.21	2.52	2.28	2.44
<b>Relevant Non- NRC Experience</b>	7.96	9.08	10.04	9.38	9.51

### **Resident Inspector Attraction 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 the 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. Therefore, because of the importance of maintaining an experienced and stable onsite inspection presence, the NRC initiated several actions to help alleviate the burden associated with the transient nature of the RI program.

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 current relocation and retention processes. Some of the enhancements, initially considered in connection with the RI program, may apply to other agency positions for which the agency might need to enhance its efforts to relocate or retain employees in the future.

In its SRM dated June 26, 2009, the Commission reaffirmed the 7-year rotation policy for SRIs and RIs and approved the staff's proposals to use existing authorities to enhance the agency's current relocation and retention processes to address the turnover in SRI and RI positions. The SRM asked the staff to report to the Commission within 2 years on the effectiveness of these changes.

### **Site Staffing**

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 the timely assignment of permanent RI staff. Specifically, DBLLTF Item 3.3.5.3 recommended that the staff establish a measurement for RI staffing, including program expectations, to satisfy minimum staffing levels. IMC 0307 provides details regarding the site staffing metric and criterion.

Despite the turnover rates in the RI and SRI positions, the regions succeeded in meeting their site staffing metric of 90 percent. The average site staffing for all regions was 97.55 percent in calendar year 2009. However, five sites fell below the 90-percent site staffing requirement, though these sites were not recurrences from the previous year. All five sites were staffed above 76 percent and were supplemented by region-based inspectors to assist in completing the baseline inspection program. Meeting this metric was challenging and had a significant impact on inspectors and management, but the recent relocation and retention enhancements may improve future site staffing metric results. Table 5 tracks the number of sites since 2005 that did not meet the 90-percent site staffing goal.

**Table 5 Number of Sites Under 90-Percent Site Staffing**

	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
<b>Number of Sites</b>	3	1	9	5	5

**Table 6 RIs 2009 by Region  
(Median Values)**

<b>2009</b>	<b>NRC Time (years)</b>	<b>Total Resident Time (years)</b>	<b>Current Site Time (years)</b>	<b>Relevant Non- NRC Experience (years)</b>
<b>Region I</b>	5.45	1.63	1.63	6.42
<b>Region II</b>	5.18	2.34	2.34	11.46
<b>Region III</b>	5.24	1.65	1.65	5.96
<b>Region IV</b>	5.27	1.79	1.79	6.00
<b>All Regions</b>	<b>5.42</b>	<b>1.79</b>	<b>1.79</b>	<b>6.25</b>

**Table 7 SRIs 2009 by Region  
(Median Values)**

<b>2009</b>	<b>NRC Time (years)</b>	<b>Total Resident Time (years)</b>	<b>Current Site Time (years)</b>	<b>Relevant Non- NRC Experience (years)</b>
<b>Region I</b>	14.47	7.19	2.55	7.41
<b>Region II</b>	8.53	7.9	2.26	12.83
<b>Region III</b>	12.08	11.16	3.51	7.0
<b>Region IV</b>	7.42	5.31	2.28	9.42
<b>All Regions</b>	<b>10.06</b>	<b>7.71</b>	<b>2.44</b>	<b>9.51</b>

**Conclusions**

The staff has concluded that sites continue to be staffed with knowledgeable and experienced RIs and senior resident inspectors (SRIs). The demographic data indicate that:

- there is an improving trend in the turnover rate for both SRIs and RIs as indicated in Tables 1 and 3.
- regional training efforts (“inspector pipelines”) are having a positive impact on the NRC experience level for RIs as indicated in Figure 1.

In addition, feedback from licensees noted that the inspectors performed high quality and effective inspections that correctly characterized the licensee's performance (as discussed in Enclosure 2, "Regulatory Impact Summary").

Many of the RI program incentives described in SECY-09-0050 have only recently been implemented or are in the process of being implemented. Therefore, improvements in the RI demographics are expected to continue. Notwithstanding, the NRC will continue to monitor SRI and RI staffing and retention to identify any adverse trends early.

The effectiveness of the enhancements to the relocation and retention initiatives described in SECY-09-0050 will be discussed in a separate paper to the Commission in CY 2011 in accordance with its associated SRM dated June 26, 2009.

- (1) **NRC Time:** NRC time for the RIs increased about the same for all regions from 2008 to 2009, as indicated by parallel lines on the graph. NRC time for the SRIs increased in Regions I and III, decreased in Region II, and remained relatively constant in Region IV.

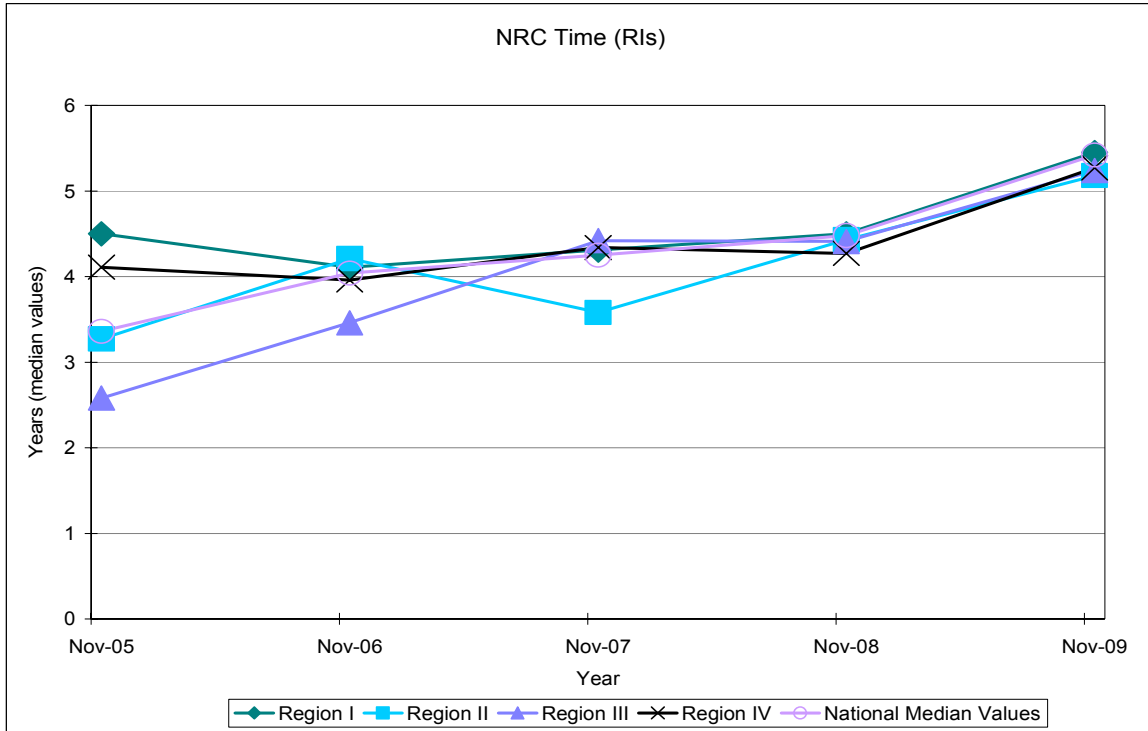


Figure 1

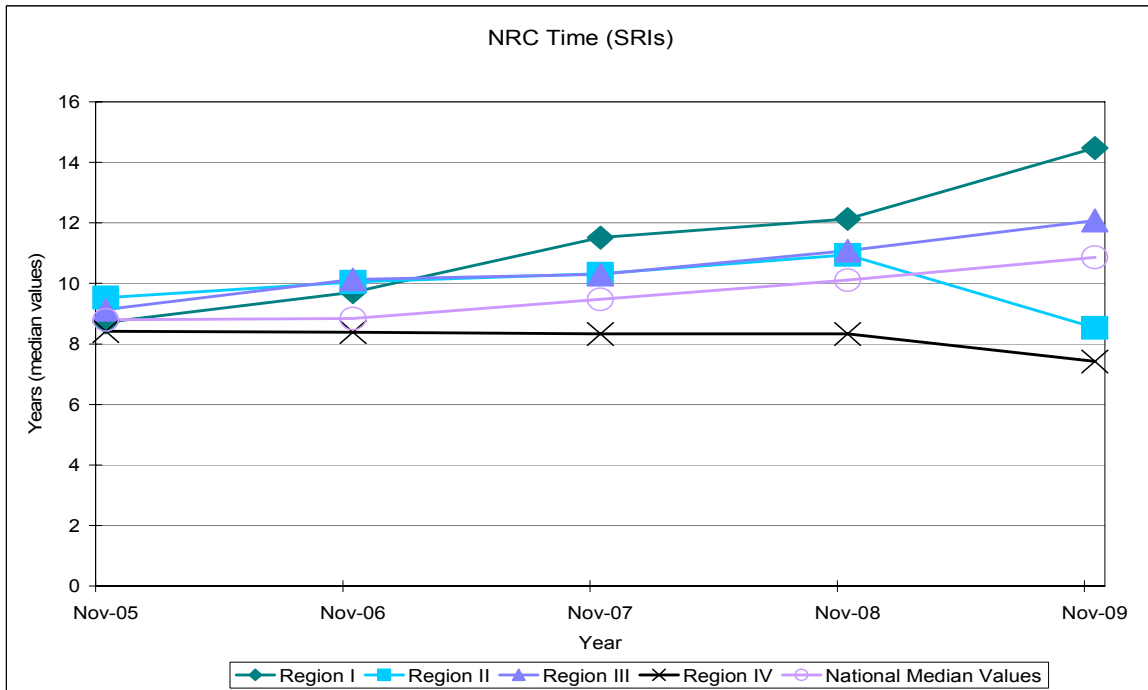


Figure 2

- (2) **Total Resident Time:** From 2008 to 2009, total resident time for the RIs increased in all regions. Total resident time for the SRIs decreased in Region II and increased in the other regions.

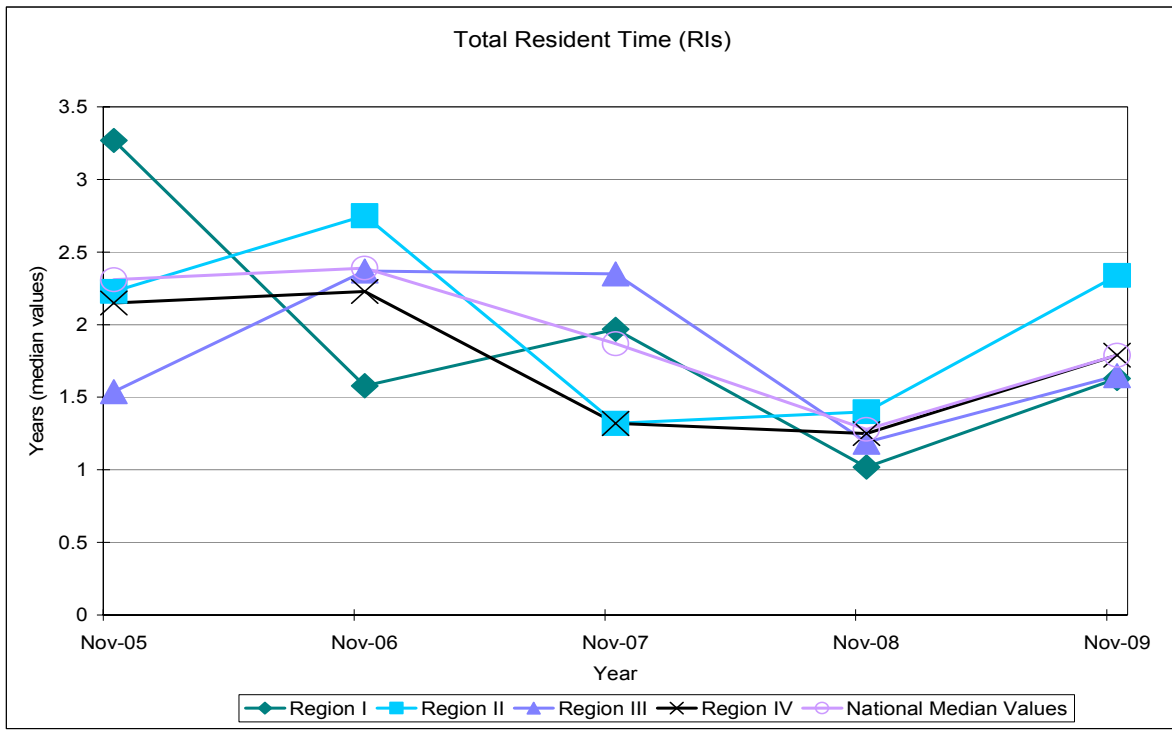


Figure 3

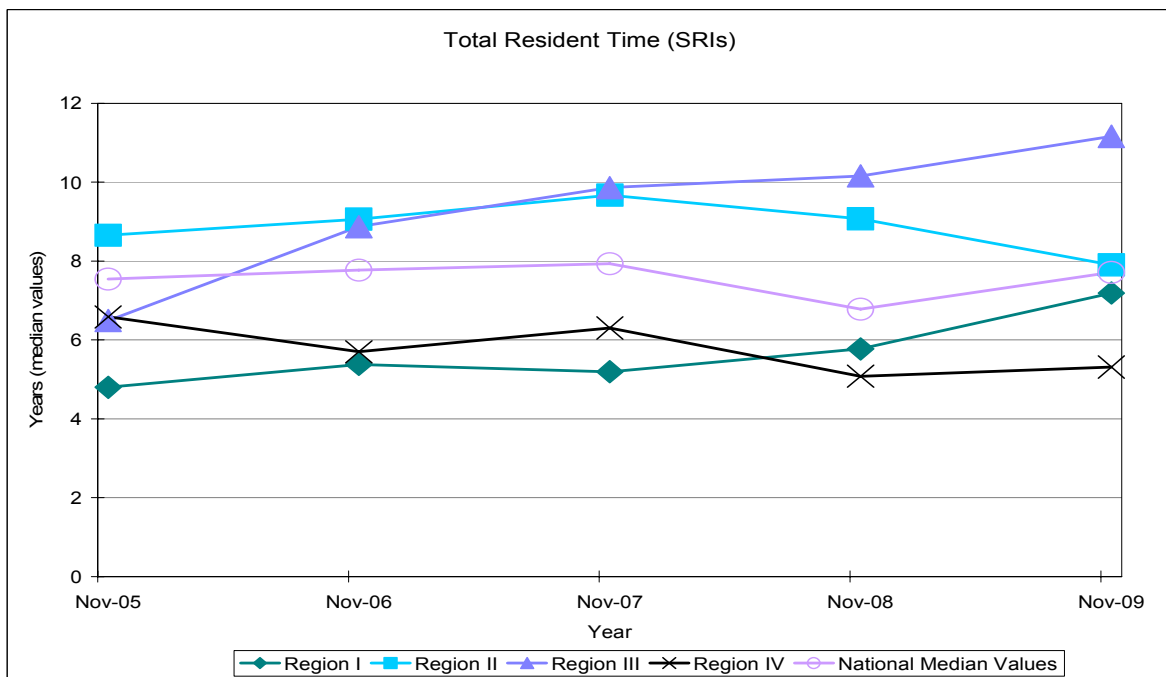


Figure 4



- (3) **Current Site Time:** From 2008 to 2009, current site time for the RIs increased in all regions. Current site time for the SRIs increased in Regions I, III, and IV, and decreased in Region II.

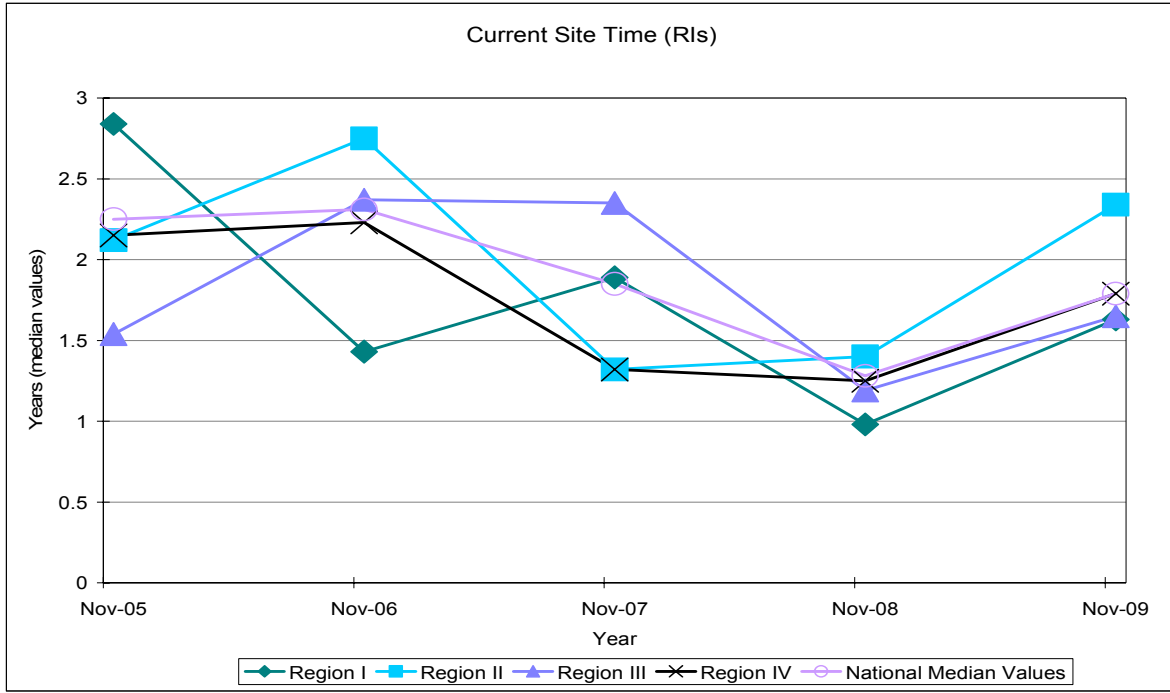


Figure 5

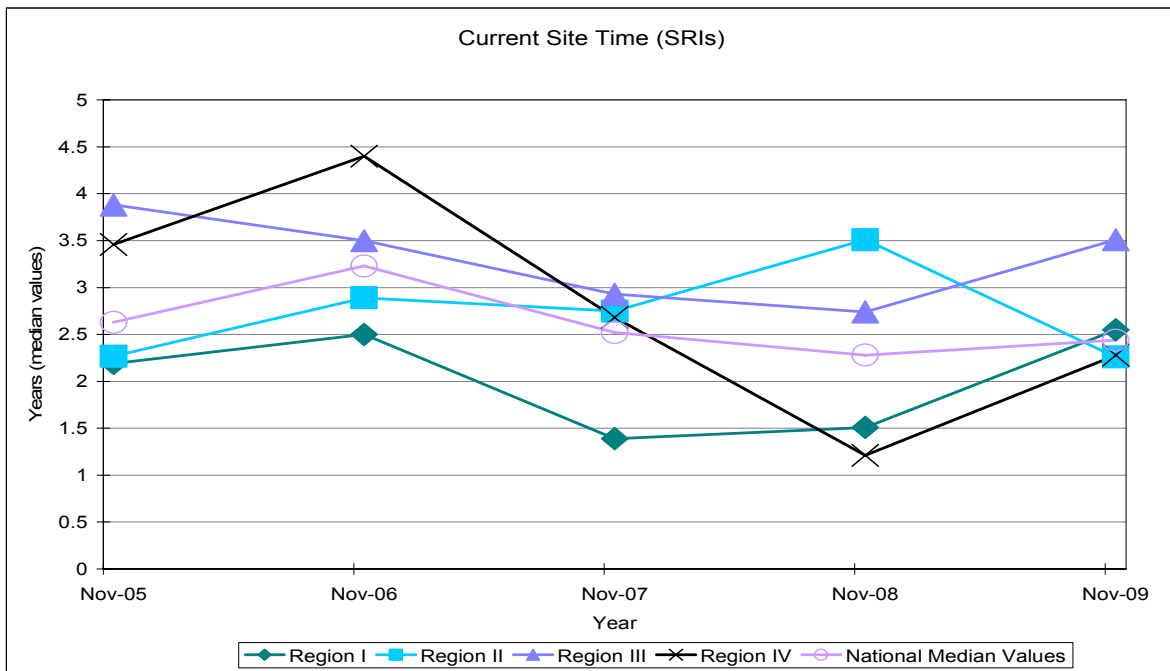


Figure 6

- (4) **Relevant Non-NRC Experience:** From 2008 to 2009, relevant non-NRC experience for the RIs decreased in Regions I, II and III, and remained relatively constant in Region IV. Relevant non-NRC experience for the SRIs decreased in Region III and remained relatively constant in the other regions.

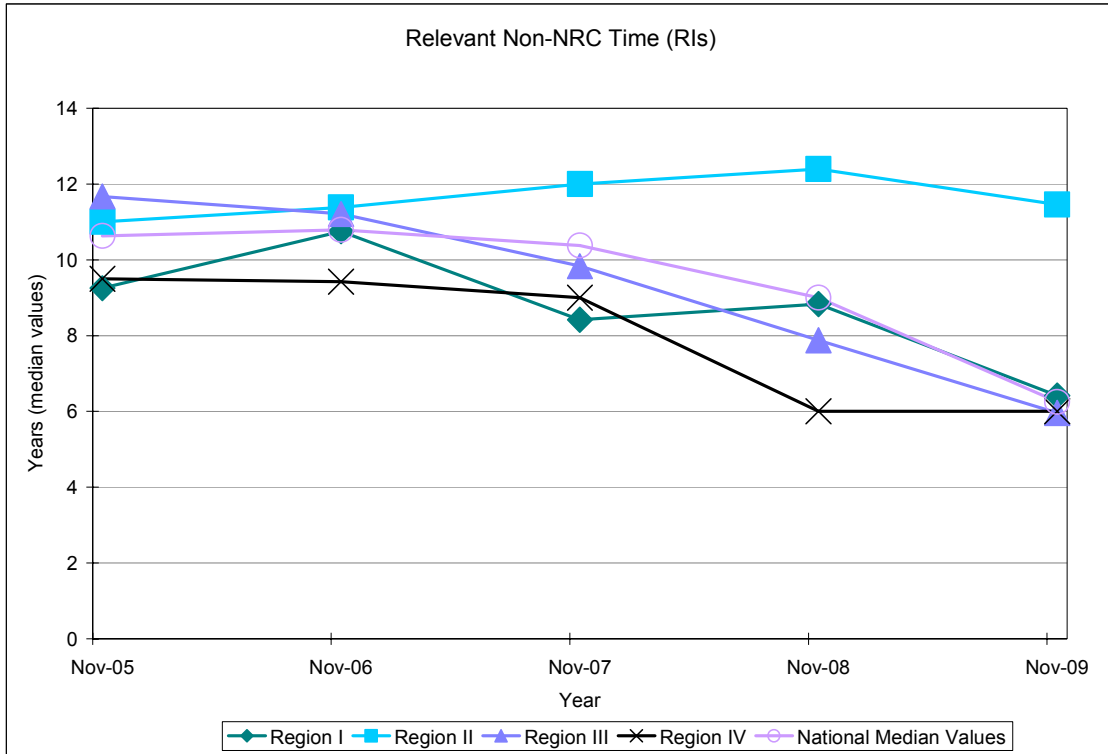


Figure 7

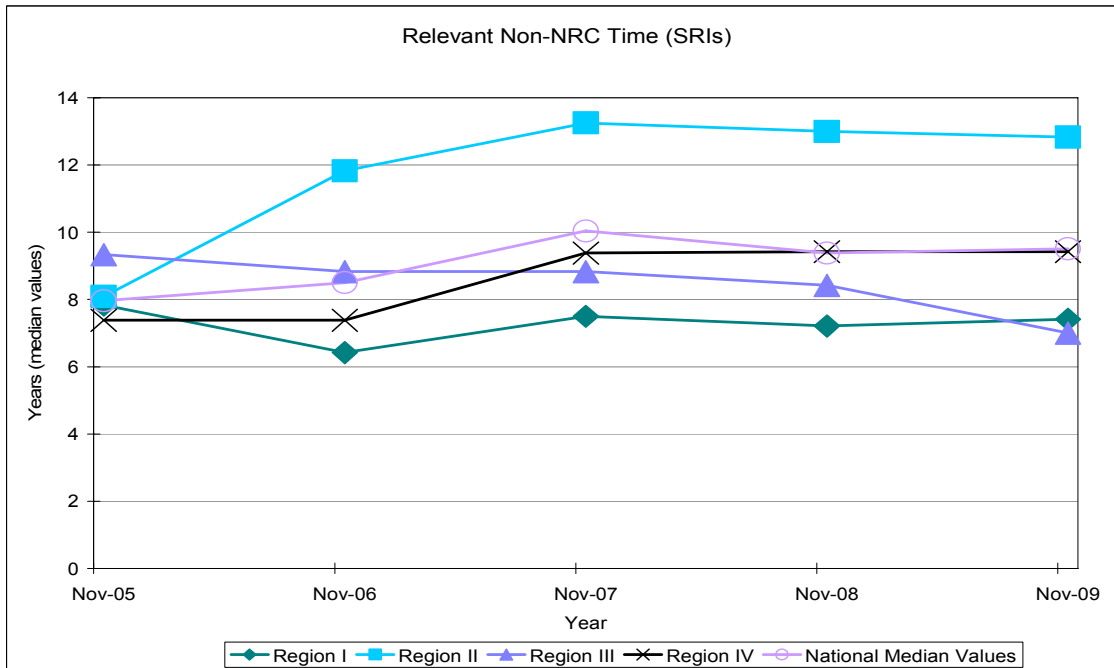
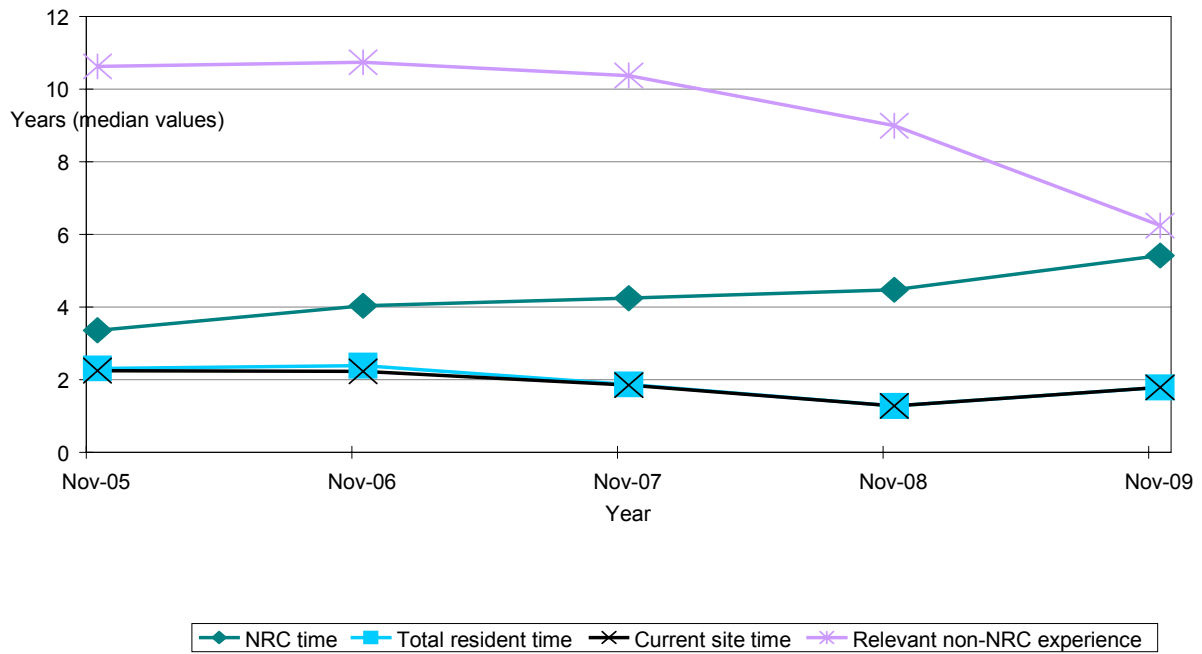


Figure 8

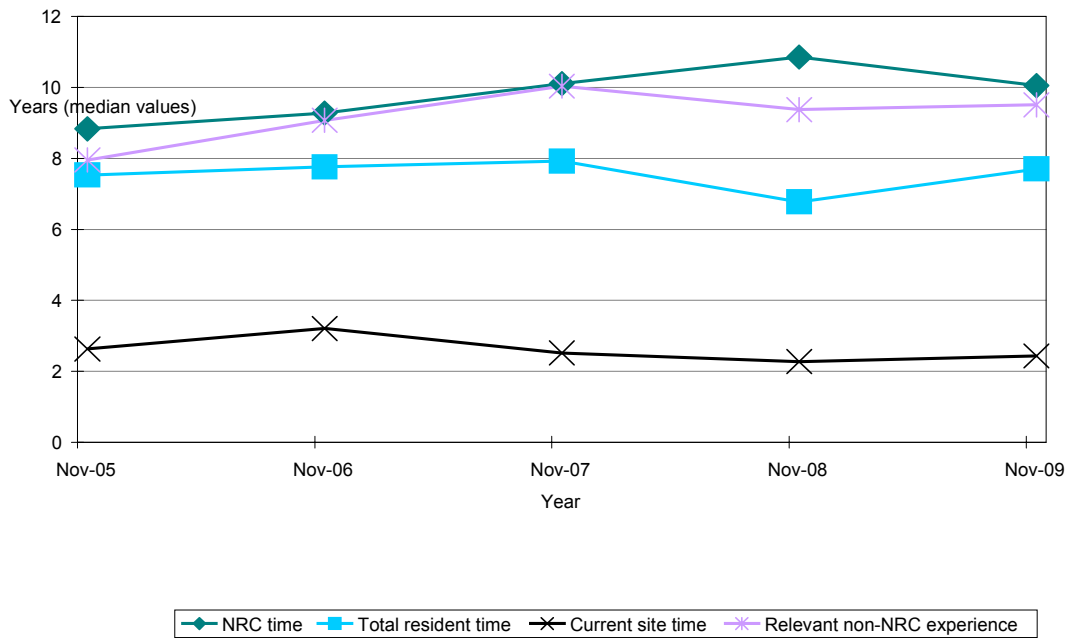
- (5) **Summary:** Figures 9 and 10 graphically portray the average national demographic data for the RIs and SRIs shown in Tables 2 and 4.

### Resident Inspectors



**Figure 9**

### Senior Resident Inspectors



**Figure 10**