

## **Resident Inspector Demographics**

### **Scope and Objectives**

This enclosure provides the annual update on demographic data for inspectors assigned to the resident inspector (RI) program, as the Commission directed in the 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 agency's actions 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 U.S. Nuclear Regulatory Commission (NRC) staff review of the demographics included 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," provides details regarding the RI program demographic data analysis. The staff used median values from the month of November 2004 to November 2008 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 of 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 2008 Resident Inspector Group**

The RI demographic data for 2008 (see Tables 1 and 2) indicates that the RI turnover rate has remained high (31 percent) in 2008. This is especially significant given the 46 percent turnover rate in 2007. The attrition that has occurred over the last several years has resulted in a median RI work experience level of about 1 year. The decrease in RI work experience of the RI group is somewhat balanced by this group's increased regulatory experience of approximately 4½ years and relevant non-NRC experience of 9 years. Table 6 shows a breakdown of experience data for RIs by region.

It should be noted that 82 percent of the RIs who left the RI program remained with the NRC. Of the 22 RIs who left during 2008, 10 were promoted to SRI positions, 8 were either promoted

or laterally reassigned to a regional office or headquarters, 1 retired, and 3 resigned from the NRC.

**Table 1  
Resident Inspector Turnover**

	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
<b>Promoted to SRI</b>	3	10	11	13	10
<b>Promoted/ Reassigned</b>	3	9	2	13	8
<b>Retired</b>	0	2	1	3	1
<b>Resigned</b>	0	2	0	4	3
<b>Total</b>	<b>6</b>	<b>23</b>	<b>14</b>	<b>33</b>	<b>22</b>
<b>Turnover Rate</b>	8%	32%	20%	46%	31%

**Table 2  
Resident Inspectors  
(Median Values in Years)**

	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
<b>NRC Time</b>	3.42	3.36	4.04	4.25	4.48
<b>Total Resident Time</b>	2.00	2.31	2.39	1.87	1.28
<b>Current Site Time</b>	1.85	2.25	2.23	1.85	1.28
<b>Relevant Non-NRC Experience</b>	10.00	10.63	10.75	10.38	9.00

**Analysis of the 2008 Senior Resident Inspector Group**

SRI demographic data for 2008 (see Tables 3 and 4) indicates that the SRI turnover rate (18%) and the relevant non-NRC experience level have remained steady. In 2008, 12 of 66 SRIs left the RI program. Of those 12, 5 were promoted, 4 were laterally reassigned to headquarters or a regional office, 1 retired, and 2 resigned from the NRC. These data do not include SRIs who were laterally reassigned to another site. Table 7 presents a numerical breakdown of the SRI positions by region.

**Table 3  
Senior Resident Inspector Turnover**

	2004	2005	2006	2007	2008
<b>Promoted</b>	0	5	7	7	5
<b>Reassigned</b>	3	4	7	7	4
<b>Retired</b>	2	1	1	1	1
<b>Resigned</b>	0	0	1	2	2
<b>Total</b>	<b>5</b>	<b>10</b>	<b>16</b>	<b>17</b>	<b>12</b>
<b>Turnover Rate</b>	8%	15%	24%	26%	18%

**Table 4  
Senior Resident Inspectors  
(Median Values in Years)**

	2004	2005	2006	2007	2008
<b>NRC Time</b>	8.80	8.84	9.28	10.11	10.86
<b>Total Resident Time</b>	7.32	7.54	7.77	7.93	7.30
<b>Current Site Time</b>	2.31	2.63	3.21	2.52	2.28
<b>Relevant Non- NRC Experience</b>	6.55	7.96	9.08	10.04	9.38

**Resident Inspector Attraction and Retention**

Staff turnover within the NRC, whether caused by promotion, reassignment, retirement, or resignation, is an ongoing process of 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 has initiated several actions to help alleviate the burden associated with the transient nature of the RI program. The staff will present these actions to the Commission in a separate paper.

**Site Staffing**

The staff developed a site staffing metric of 90 percent program wide in response to a recommendation by the Davis-Besse Lessons Learned Task Force (DBLLTF). The purpose of the metric is to evaluate the agency’s ability to provide continuity of regulatory oversight through timely assignment of permanent RI 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 98 percent in calendar year 2008. However, five sites fell below the 90 percent site staffing requirement. All five sites were staffed above the 86 percent level and were supplemented by region based inspectors to assist in completing the baseline inspection program. Given the continued high turnover rates experienced in 2008, meeting this metric was challenging and had a significant impact on inspectors and management. Table 5 tracks the number of sites since 2005 that were under 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>Number of Sites</b>	3	1	9	5

**Table 6  
Resident Inspectors 2008 by Region  
(Median Values)**

<b>2008</b>	NRC Time (years)	Total Resident Time (years)	Current Site Time (years)	Relevant Non-NRC Experience (years)
Region I	4.50	1.02	0.98	8.83
Region II	4.43	1.40	1.40	12.40
Region III	4.41	1.19	1.19	7.88
Region IV	4.27	1.25	1.25	6.00
<b>All Regions</b>	<b>4.48</b>	<b>1.28</b>	<b>1.28</b>	<b>9.00</b>

**Table 7**  
**Senior Resident Inspectors 2008 by Region**  
**(Median Values)**

<b>2007</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>
Region I	12.13	8.00	1.51	7.21
Region II	10.94	9.07	3.51	13.00
Region III	11.08	10.16	2.74	8.42
Region IV	8.33	5.08	1.21	9.42
<b>All Regions</b>	<b>10.86</b>	<b>7.30</b>	<b>2.28</b>	<b>9.38</b>

### **Conclusions**

The RI program continues to attract experienced engineers as indicated by the high level of relevant non-NRC experience found in this group. However, the high turnover rates in recent years have resulted in a decline of onsite inspection experience, challenges in filling vacant RI positions, and a significant amount of effort by management and inspection staff to provide continuity of regulatory oversight. These current issues may present challenges in implementing the inspection program.

Because of the number of challenges that regions face associated with staffing vacant RI positions in a timely manner, meeting operating plan metrics, and maintaining an experienced and stable RI program; program enhancements to improve the flexibility and timely hiring of RIs are recommended. These enhancements will be the subject of a separate paper to the Commission.

- (1) **NRC Time:** NRC time for the RIs increased in Region II and remained relatively constant in Regions I, III, and IV. NRC time for the SRIs increased in Regions I, II, and III and remained relatively constant in Region IV.

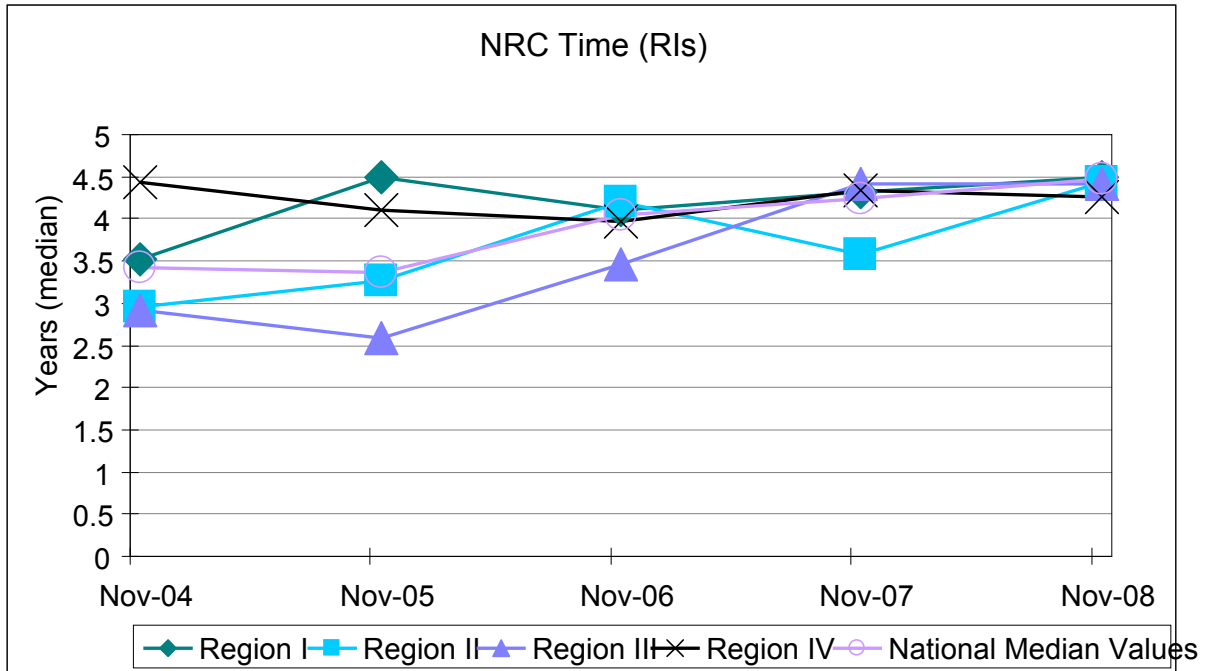


Figure 1

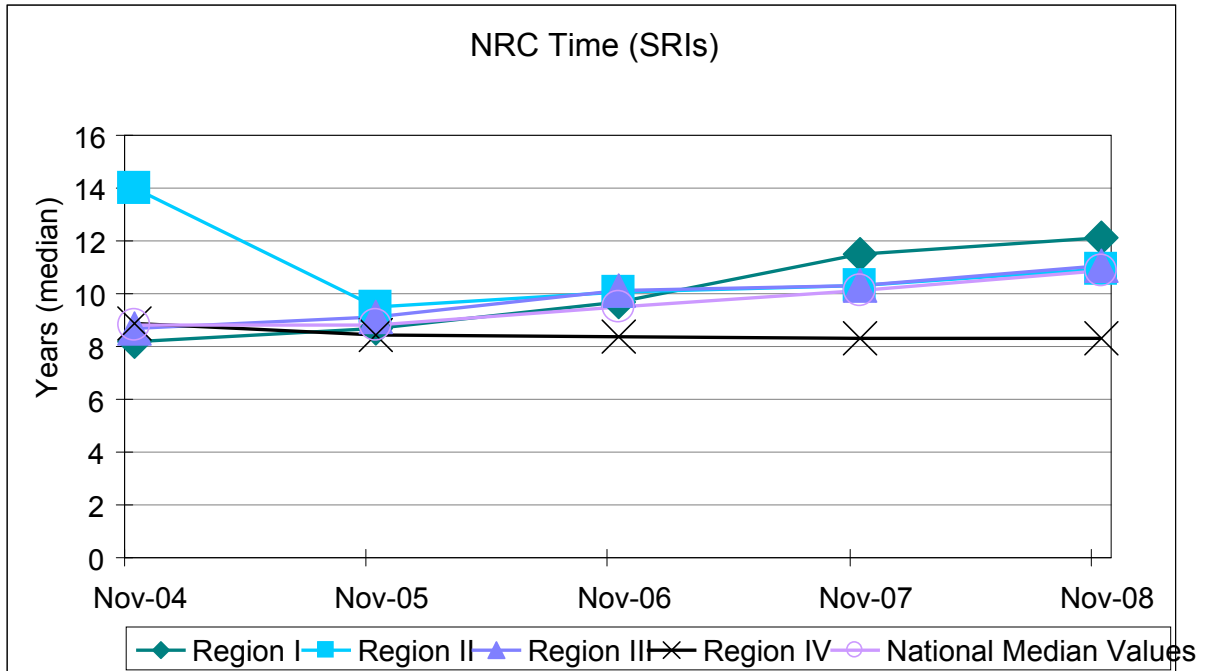


Figure 2

- (2) **Total Resident Time:** Total resident time for the RIs decreased in Regions I and III and remained relatively constant in Regions II and IV. Total resident time for the SRIs decreased in Regions II and IV and increased in Regions I and III.

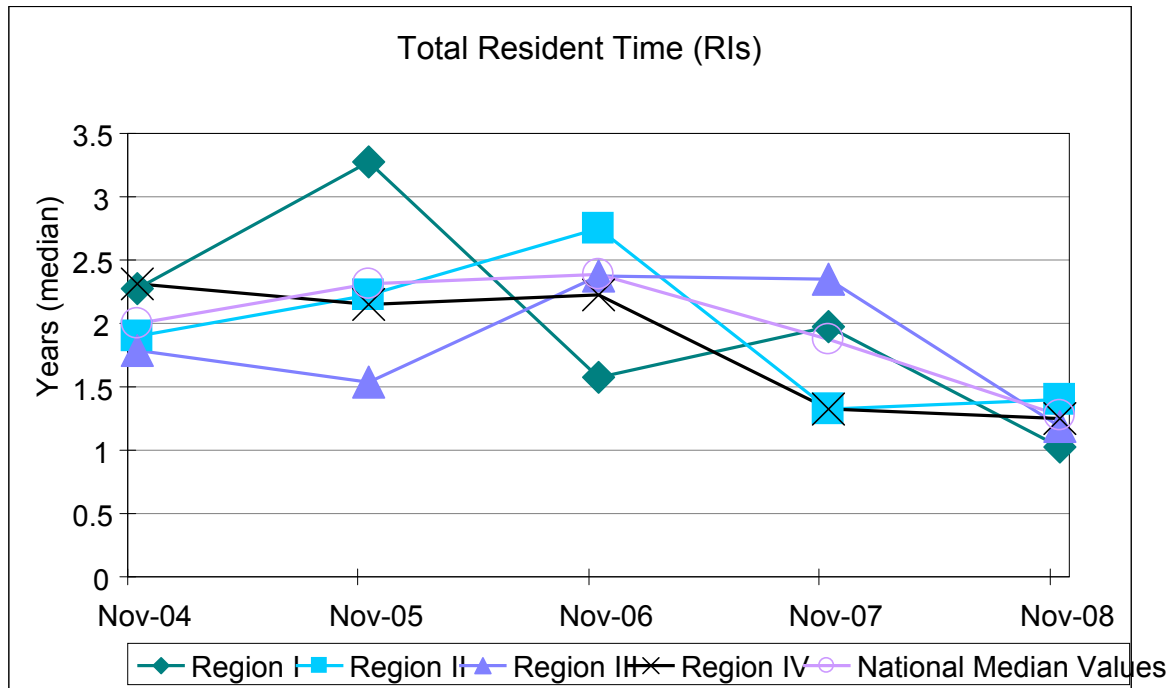


Figure 3

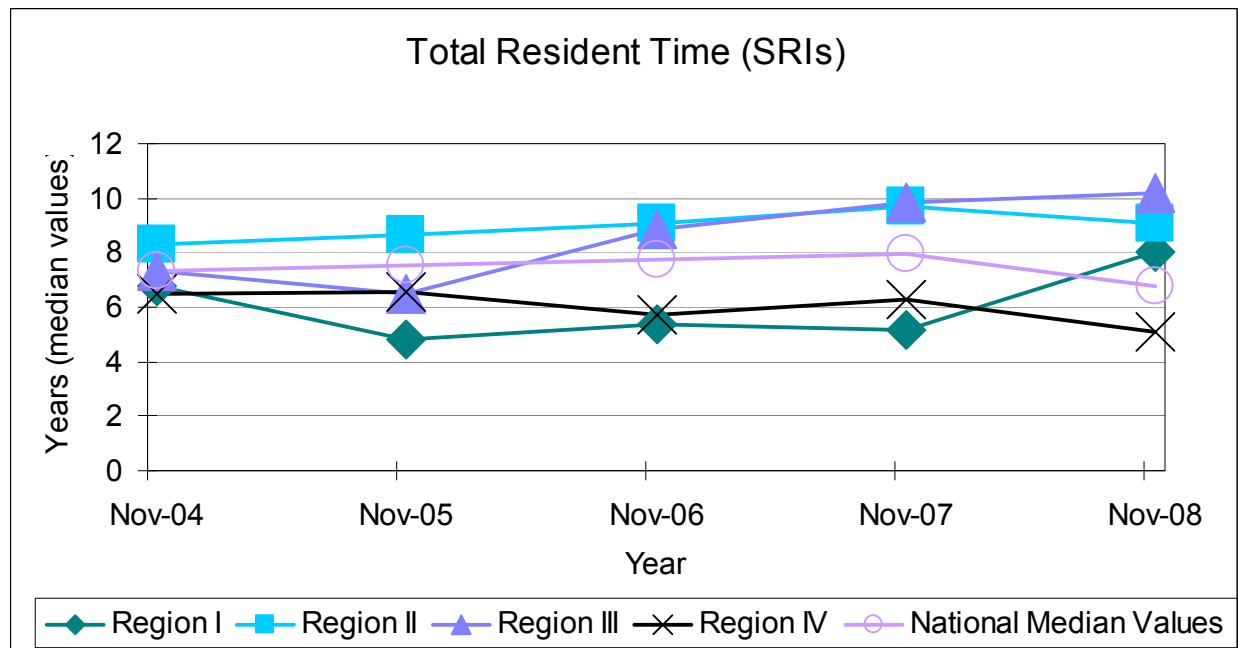


Figure 4

- (3) **Current Site Time:** Current site time for the RIs decreased in Regions I and III and remained relatively constant in Regions II and IV. Current site time for the SRIs remained relatively constant in Regions I and III, increased in Region II, and decreased in Region IV.

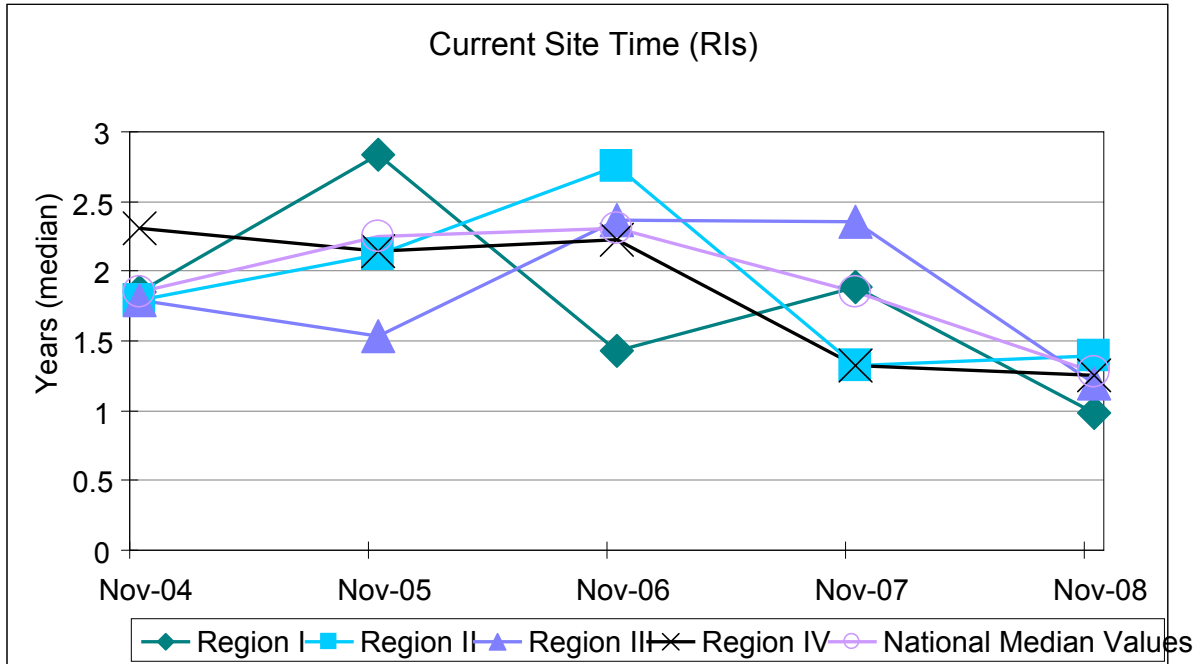


Figure 5

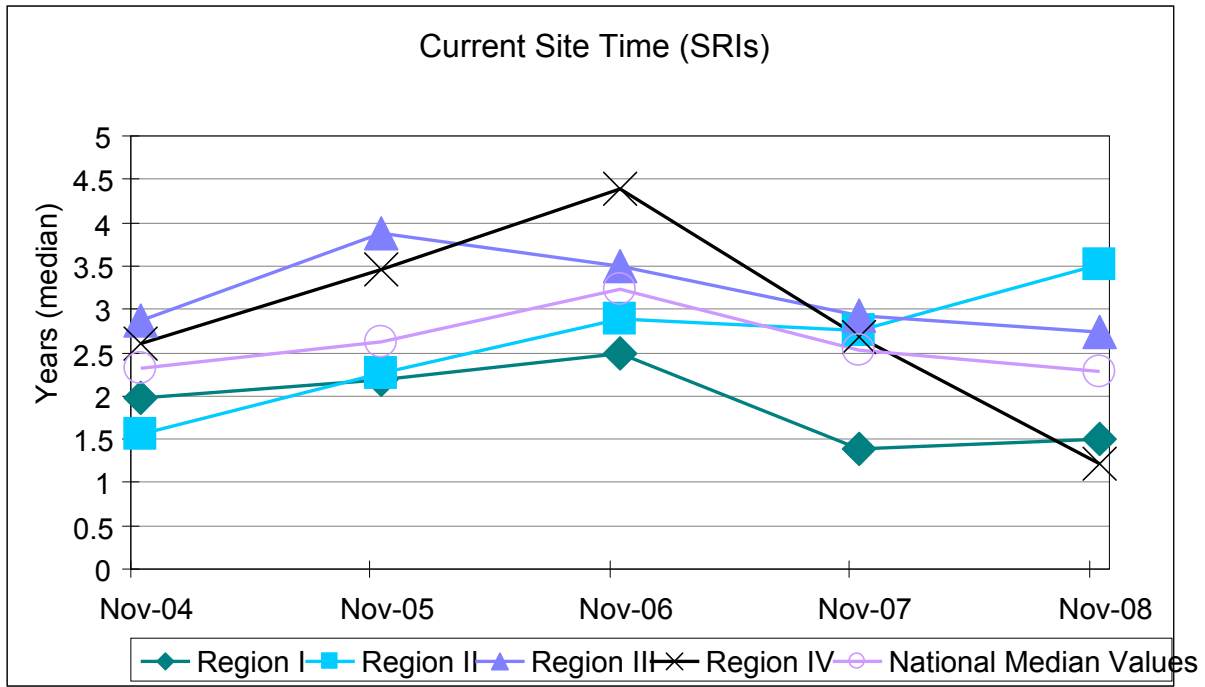


Figure 6



- (4) **Relevant Non-NRC Experience:** Relevant non-NRC experience for the RIs increased in Region I and II and decreased in Regions III and IV. Relevant non-NRC experience for the SRIs remained relatively constant in all four regions.

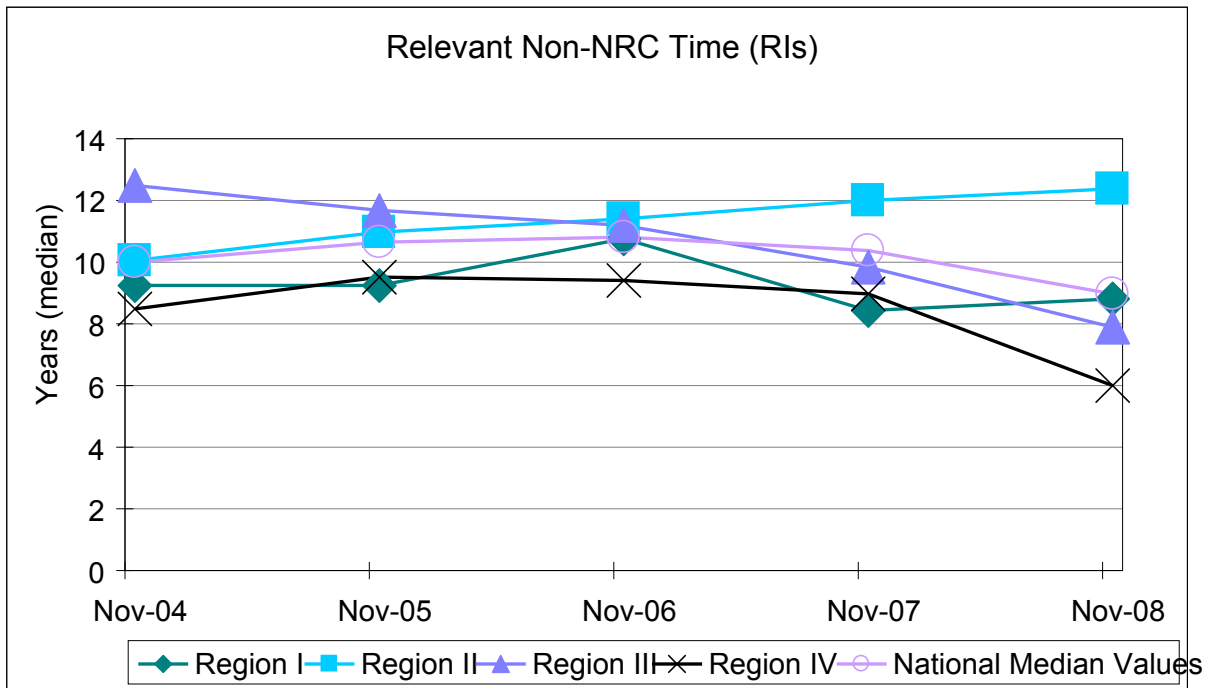


Figure 7

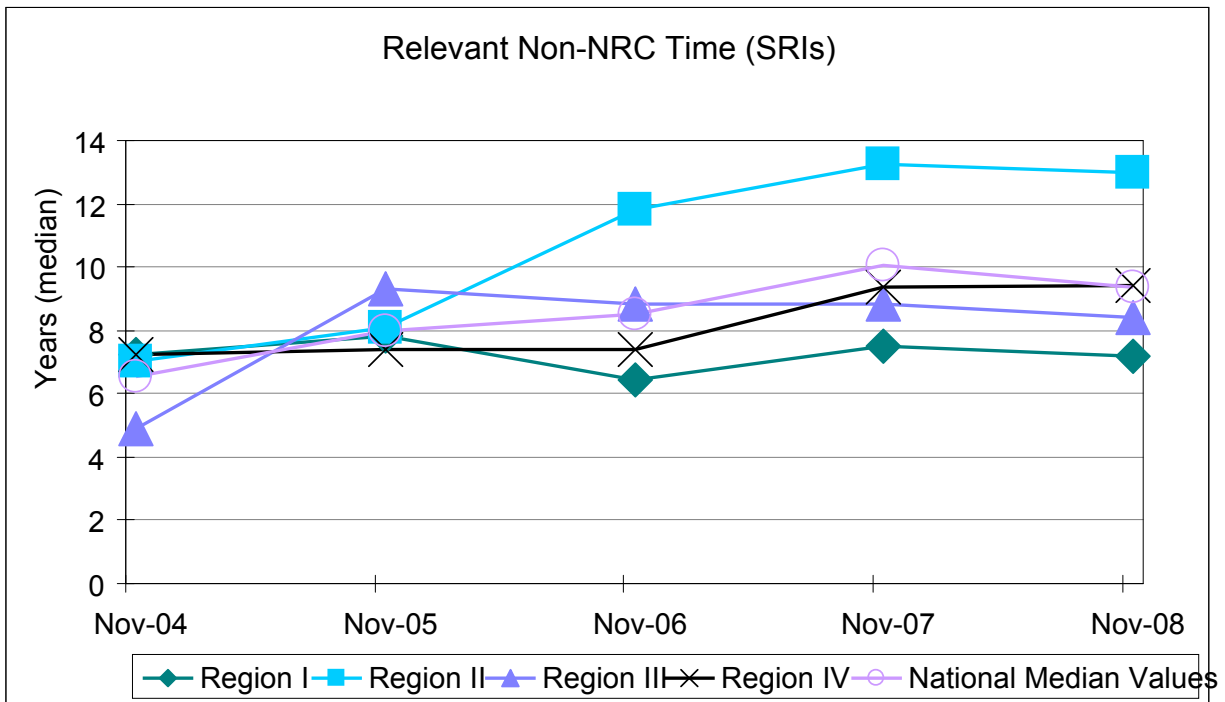


Figure 8

- (5) **Summary:** The average national demographic data for the RIs and SRIs show a decrease in total resident time, current site time, and relevant non-NRC experience and an increase in NRC time.

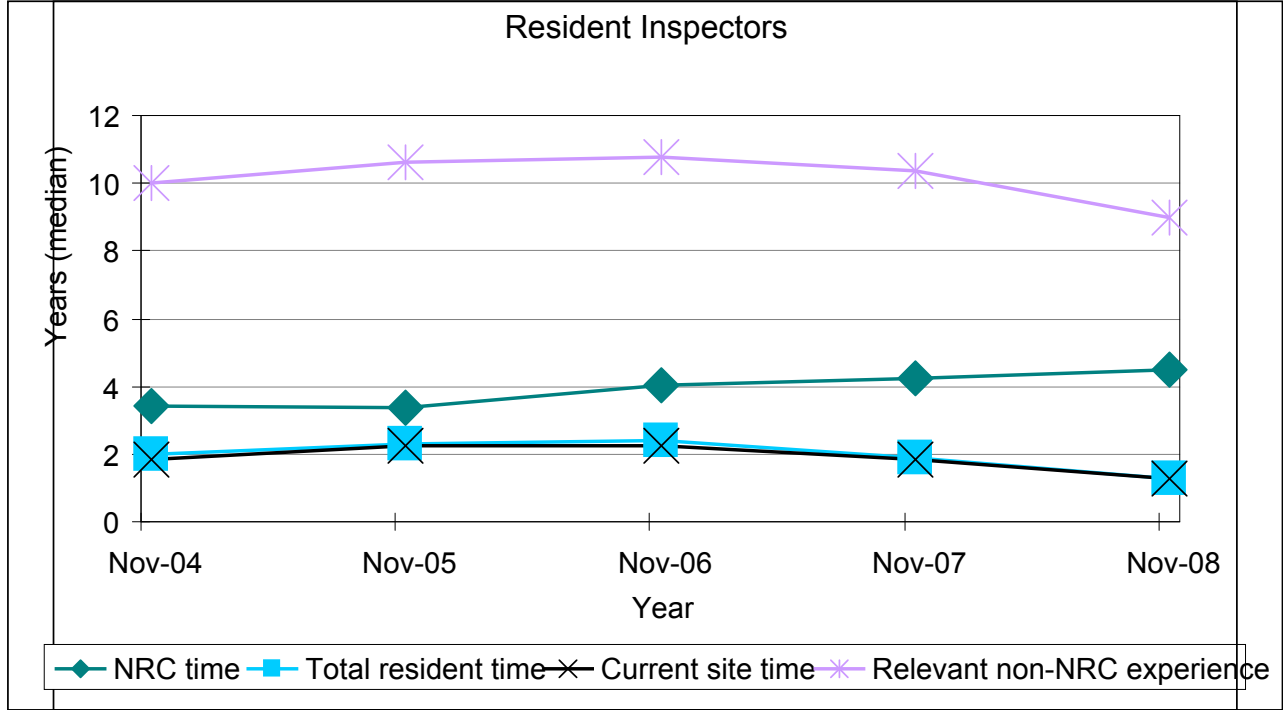


Figure 9

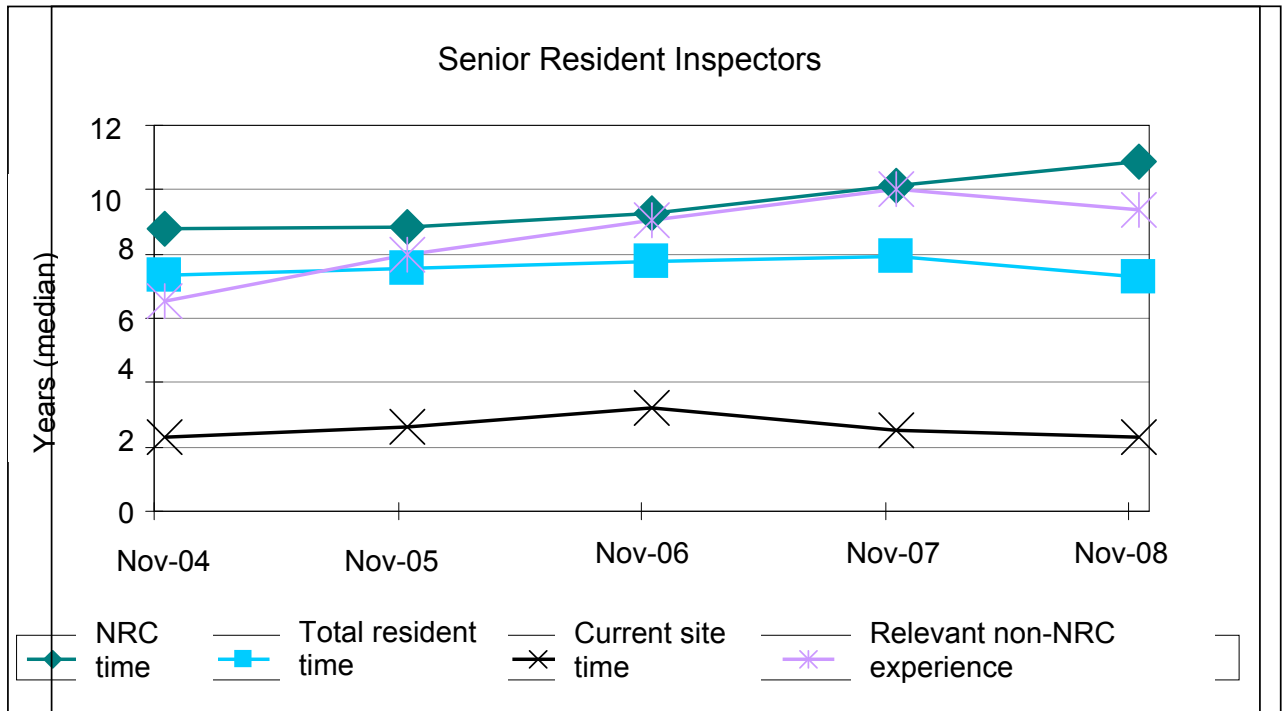


Figure 10