

Reactor Oversight Process Resources

Summary of 2005 Resources Used—Table 1¹ provides a summary of staff resources expended for the Reactor Oversight Process (ROP) during the past five annual review periods. The summary includes resources expended for all ROP cornerstones, including security and emergency preparedness activities, in order to maintain continuity and provide a valid comparison with previous years. After a reduction in 2002, inspection effort has increased steadily during the past three inspection cycles.

In SECY-03-0062, “Reactor Oversight Process Self-Assessment for Calendar Year 2002,” issued April 21, 2003, the staff reported a significant reduction in the staff hours expended for the ROP in 2002, with the bulk of the reduction in baseline inspection activities. A number of events during the 2002 inspection cycle challenged the ability of the U.S. Nuclear Regulatory Commission (NRC) staff to complete the required baseline inspections. These challenges required regional staff to implement short-term coping strategies that resulted in a reduced baseline inspection effort to complete the program.

The challenges experienced in 2002 continued into 2003; however, assistance from other NRC offices and continuation of the coping measures significantly reduced the impact. Increases in the regional inspection budget in 2004 and beyond and aggressive action by regional offices in filling open inspector positions prevented the difficulties experienced in 2002 and 2003 from extending to the 2004 inspection cycle.

Overall staff effort in 2005 was 5.4 percent higher than in 2004. All areas of the ROP showed an increase, except for performance assessment, which has remained relatively constant during the past few years. The stable level of effort in this area continues to reflect an established process for performance assessment activities.

The baseline inspection effort in 2005 increased 6.1 percent compared with 2004. This increase was generally evenly distributed among all baseline procedures. Plant status activities experienced the largest change because of increased requirements for daily corrective action review and reactor coolant system leakage trend reviews resulting from lessons learned from the Davis-Besse event.

The effort reported for other activities, such as inspection-related travel, is typically a function of that expended for direct baseline inspection and usually tracks the direct baseline inspection effort. In this case, both direct baseline effort and other activities increased 5.4 percent over 2004 levels.

The 2005 inspection effort for generic and safety issues exhibited a significant increase. This increase resulted from the high level of inspection activity associated with temporary

¹The ROP is implemented on a calendar-year (CY) basis; however, the staff obtains and reports resource data on a fiscal-year (FY) basis. There is no reason to believe that the results would be appreciably different if resource data were collected and reported on a CY basis.

instructions continuing from 2004 into 2005, primarily in the area of safeguards, grid reliability, and material control and accountability.

The increased inspection effort in 2005 was most likely the result of increased regional inspection activity due to additional requirements that have been imposed on the inspection staff in recent years. These additional requirements include corrective action reviews, activities resulting from Davis-Besse lessons learned, increased generic safety issues inspections, and increased efforts in the areas of safety culture, security, performance indicators, and inspection procedure development. The staff intends to further investigate the reasons for the inspection resource increase over the past few years.

Although the ROP has resulted in improved inspection effectiveness, any efficiency gains that may have been achieved since ROP implementation have been offset by the additional requirements that have been imposed on the inspection staff.

A recent reevaluation of ROP resource needs indicated that the regional inspection budget should increase by 14 full-time equivalent (FTE) staff members. As noted above, this shortage is due to the increased inspection activity and possible unrealized efficiencies that were planned for the regions in previous years. The FY 2007 and FY 2008 inspection budget requests include these additional resources, but the inspection budget for FY 2006 has already been approved. Until the increase in FTE goes into effect in FY 2007, the staff recognizes that inspection resources may be strained. However, the staff anticipates that baseline inspections and other elements of the ROP will be completed as they have been during the past year. The staff will maintain close oversight of resource expenditures during FY 2006 and, if redirection of resources is warranted because of unexpected events, they will be redirected using the planning, budgeting, and performance management (PBPM) process.

2005 Inspection Cycle—The revised resident inspector staffing policy that permits early assignment of new resident and senior resident inspectors to a site and the increased regional inspection budget improved the site staffing levels with experienced and qualified resident inspectors and alleviated the resource burden in completing the baseline inspection program. As in 2004, all four regions completed their baseline inspections in 2005 using existing regional resources without the coping measures that were necessary during the 2002 and 2003 inspection cycles. As a result of these changes and continued aggressive hiring strategies by the regions, the 2005 inspection cycle showed no indication of these previous difficulties.

ROP Resource Model/Regional Inspection Budget—The staff adjusted the ROP resource model in 2004 as a result of experience gained during the 2002 and 2003 inspection cycles. The regional inspection budgets for FY 2004 and beyond reflect these changes. The staff reviews issues related to inspection resources as part of the ongoing ROP self-assessment and adjusts resources as required by program needs.

Current initiatives include a reassessment of the ROP resource model to consider additional plant status activities based on the reactor coolant system leakage review required as a result of the lessons learned from the Davis Besse event and other emerging requirements, and includes a “unique site” designation in addition to single-, dual-, and triple-unit sites. This revised model was used to develop the FY 2008 inspection budget request as described above.

The staff has reviewed the inspection data and model for the Millstone (MILL), Indian Pont (IP), Nine Mile Point (NMP), and Beaver Valley (BV) sites as part of an overall reevaluation of inspection resource requirements for a number of dual-unit sites that are unique because of their design, vintage, or operational differences between the units. For MILL, NMP, and BV, Region I has recommended that the Office of Nuclear Reactor Regulation (NRR) approve a unique site model to account for the additional ROP implementation requirements at these sites. NRR is currently evaluating this model. For IP, Region I recommends maintaining the current two, single-unit site model as site consolidation efforts progress. Region I and NRR will periodically assess efficiencies that could be gained as licensees at unique sites continue to implement integration strategies.

This unique site approach may also apply to Arkansas Nuclear One, Units 1 and 2. The staff is currently piloting and will evaluate the impact of this unique site model on regional inspection resource requirements and the resulting implications for the regional inspection budget at BV, MILL, and NMP during the 2006 inspection cycle. If a mid-cycle review concludes that this approach has merit, the staff will factor it into the ROP resource model for future budget formulation.

Additional ROP Initiatives—During CY 2005, the staff began to review regional inspection practices with the following objectives:

- to understand the reasons for regional differences in resource expenditure rates for the ROP and to identify best practices in conducting inspections
- to ensure that regional policies and practices are consistent with ROP program policy
- to solicit regional feedback regarding the extent of headquarters support provided to the regions and to make recommendations for improvements

NRR staff visited Regions I and II in 2005 and intend to visit the other two regions during the 2006 inspection cycle.

As discussed in other sections of this paper, the staff is currently pursuing a number of initiatives that may improved program effectiveness. These initiatives include a realignment of resources allocated to the individual baseline inspection procedures, revised engineering design inspections, pilot implementation of the “unique site” budget models, continued improvements in the significance determination process, and implementation of the Mitigating Systems Performance Index program.

TABLE 1
RESOURCES EXPENDED
(TOTAL INSPECTION-RELATED STAFF EFFORT EXPENDED AT OPERATING POWER REACTORS)

	52 weeks FY 2001 09/24/00–09/22/01	52 weeks FY 2002 09/23/01–09/21/02	52 weeks FY 2003 09/29/02–09/27/03	52 weeks FY 2004 09/28/03–09/25/04	52 weeks FY 2005 09/26/04–09/24/05	% Δ FY 2004–2005
Baseline/Core						
Direct Inspection Effort	130,330	119,884	123,027	133,028	140,248	5.4%
Inspection Prep/Doc	109,227	91,385	91,230	100,904	106,875	5.9%
Plant Status	46,191	44,228	46,755	51,073	55,378	8.4%
Subtotal	285,748	255,497	261,012	285,005	302,501	6.1%
Plant-Specific Inspections						
Direct Inspection Effort	8,436	9,354	14,647	12,720	13,942	9.6%
Inspection Prep/Doc	6,161	7,715	9,978	9,971	8,832	(11.4)%
Subtotal	14,597	17,069	24,625	22,691	22,774	0.4%
GSI/SI	918	1,718	3,953	7,293	9,980	36.8%
Performance Assessment	19,845	17,293	20,013	21,261	19,284	(9.3)%
Other Activities (Inspection-Related Travel, Routine Communication, Regional Support, Enforcement Support, Significance Determination Process, Review of Technical Documents)	49,471	43,627	48,058	54,040	56,951	5.4%
Total Staff Effort	370,579 h	335,204 h	357,661 h	390,290 h	411,490 h	5.4%
Total Staff Effort/Operating Site	5,531 h/site	5,003 h/site	5,338 h/site	5,825 h/site	6,142 h/site	