March 16, 2007

The Honorable Thomas R. Carper
Chairman, Subcommittee on Clean Air
and Nuclear Safety
Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

The Fiscal Year (FY) 2006 Energy and Water Development Appropriations Act, House Reports 109-86 and 109-275, directed the U.S. Nuclear Regulatory Commission (NRC) to provide a quarterly report on the status of its licensing and other regulatory activities. The initial reporting requirement arose in the FY 1999 Energy and Water Development Appropriations Act, Senate Report 105-206. On behalf of the Commission, I am pleased to submit this report, which covers the fourth quarter of 2006, October through December. I am also providing in this cover letter additional information in order to keep you fully and currently informed of NRC's regulatory activities.

On November 9, 2006, the Governor of Pennsylvania formally requested that Pennsylvania become an Agreement State pursuant to Section 274 of the Atomic Energy Act, as amended. The NRC staff is expected to complete a detailed review within 8 weeks. Pennsylvania's current plans are to become an Agreement State in autumn 2007. There are currently 34 Agreement States.

On November 15, 2006, Shaw AREVA MOX Services (MOX Services), the applicant for the Mixed-Oxide Fuel-Fabrication Facility, submitted a revised application for a license to possess radioactive material, including special nuclear material necessary to manufacture mixed-plutonium/uranium-dioxide nuclear fuel assemblies. This revised application was in response to a letter sent to MOX Services on November 7, 2006, which noted certain deficiencies in the original application.

On November 22, 2006, Dominion Nuclear North Anna (LLC) informed NRC that on November 21, 2006, it had received from the Commonwealth of Virginia Department of Environmental Quality conditional concurrence under the Coastal Zone Management Act for the North Anna Early Site Permit. The conditions are that Dominion complete an Instream Flow Incremental Methodology study to address the impacts of the proposed two new units on fish and other aquatic resources of Lake Anna and downstream waters prior to issuance of a combined license; and obtain all permits and approvals required under the coastal program prior to construction and operation, including any site preparation work and preliminary construction activities. The staff agreed to include the first condition in the North Anna Early Site Permit.

On December 5 and 12, 2006, the NRC staff held public meetings in Newfield, New Jersey, to inform the public on NRC's decommissioning process and to obtain input from local stakeholders regarding the environmental impacts associated with Shieldalloy Metallurgical Corporation's (SMC's) proposal for "restricted use decommissioning" at its Newfield site. U.S. Senator Robert Menendez and State Senator Fred Madden each presented formal statements regarding their opposition to the proposal to leave radioactive waste on site. All local stakeholders opposed the SMC decommissioning plan and stated that significant adverse environmental impacts could result if the plan is approved. Subsequently, NRC received five hearing requests on this issue.

On December 7, 2006, AmerGen Energy Co. (LLC) initiated comprehensive activities to investigate the cause of elevated concentrations of cesium-137 that were reported in environmental samples of broadleaf vegetation and soil collected in August and September of 2006 on an owner-controlled area adjacent to the Oyster Creek facility. Based on information to date, no reportable limits have been reached, and negligible dose consequence is expected based on pending confirmation of analytical results. NRC is monitoring AmerGen's investigation.

On December 18, 2006, the NRC Browns Ferry Unit 1 Restart Oversight Panel conducted a public meeting with the Tennessee Valley Authority (TVA) to discuss the status of the licensee's efforts to restore Unit 1 to operation. The meeting was held in Decatur, Alabama, and was attended by representatives of the local media, representatives of local governments, and members of the public. Subsequently, on January 10, 2007, the Commission was briefed by TVA and the NRC staff on progress and plans for restarting Unit 1. Browns Ferry Unit 1 restart activities continue to be performed in a safe manner, and TVA anticipates completing Unit 1 restoration activities in May 2007. An Operational Readiness Assessment Team inspection will be performed prior to May 2007. The Commission has authorized the NRC Region II Administrator to allow restart of Browns Ferry Unit 1 after the completion of outstanding restart program activities and inspections.

On January 11, 2007, the NRC received a request from Entergy Nuclear Operations for an extension of the January 30, 2007 deadline imposed by the NRC to meet requirements of the 2005 Energy Policy Act at its Indian Point Energy Center in Buchanan, New York. The Energy Policy Act included a provision directing the NRC to require nuclear power plants located within certain population densities to have back-up power for their emergency notification systems, including sirens. Indian Point is the only nuclear power facility that met the criteria for this requirement. In January 2006, the NRC issued a confirmatory Order requiring Entergy to install back-up power for its entire alert and notification system by January 30, 2007; however, the NRC order allows Entergy to request relaxation of specific aspects of the Order. In its extension request, Entergy states that, while "considerable progress" has been made toward completing the new siren system, one tower will need modifications to support the addition of antennae and that additional testing of the system and training of emergency service workers will be needed once work is completed. In addition, Entergy said the need to obtain additional local permits for the new-siren locations also contributed to the delay. Because these

issues will prevent the work from being completed by the Order's deadline, Entergy has asked for an extension until April 15, 2007. Entergy noted in the extension request that they had discussed the request with surrounding counties. Indian Point's existing alert and notification system is unaffected by the new system and remains in place to notify the public, if necessary. NRC staff is evaluating the request and will provide a decision as rapidly as possible.

On February 21, 2007, the NRC issued a "white" finding associated with operability of emergency diesel generators to Palo Verde Nuclear Generating Station. This finding was caused by performance deficiencies similar to others noted by NRC at Palo Verde since 2004. Following testing failures on July 25 and September 22, 2006, an NRC special inspection identified problems in an electrical relay that rendered the emergency diesel generator non-functional for approximately 18 days during 2006. Under the NRC's reactor oversight process, "white" findings have low to moderate safety significance. The NRC will determine the appropriate follow-up actions to ensure performance improvements at the plant. The company has 30 days to appeal the NRC staff's determination of the "white" finding, which requires additional oversight of the plant.

The NRC staff has determined that the Perry Nuclear Power Plant has taken sufficient corrective actions to allow its return to routine agency oversight as of March 2, 2007. The plant, operated by FirstEnergy, was placed under heightened NRC oversight in August 2004 as a result of three "white" findings involving equipment failures of low to moderate safety significance. The three findings involved safety system problems and the utility's failures to analyze and correct these problems properly to prevent recurrence. Even though the utility took actions to correct the equipment problems shortly after discovery, the NRC did not consider two of the "white" issues fully resolved because of the underlying problems of human performance and problem identification and resolution that remained to be addressed. As a result of increased oversight at Perry, the NRC performed a broad, in-depth inspection from January 2005 to May 2005, as well as many supplemental inspections in addition to regular oversight activities to make sure that the plant had taken sufficient corrective actions to resolve the long-standing "white" findings and that substantial improvements have been made in the areas of human performance and problem identification and resolution.

In the area of new reactor licensing activities, the industry continues to express interest in the construction of new reactors. The NRC staff expects to receive a significant number of new reactor Combined License (COL) applications over the next several years and is developing the infrastructure necessary to support the application reviews. At this time, the staff has received letters of intent from potential applicants for a total of 20 COLs for up to 29 nuclear units.

Please contact me for any additional information you may need.

Sincerely,

/RA/

Dale E. Klein

Enclosure:
Quarterly Status Report on the Licensing
Activities and Regulatory Duties of the
U.S. NRC, October - December 2006

cc: Senator George V. Voinovich

Identical letter sent to:

The Honorable Thomas R. Carper
Chairman, Subcommittee on Clean Air
and Nuclear Safety
Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510
cc: Senator George V. Voinovich

The Honorable Barbara Boxer
Chairman, Committee on Environment
and Public Works
United States Senate
Washington, D.C. 20510
cc: Senator James M. Inhofe

The Honorable Rick Boucher
Chairman, Subcommittee on Energy
and Air Quality
Committee on Energy and Commerce
United States House of Representatives
Washington, D.C. 20515
cc: Representative J. Dennis Hastert

The Honorable John D. Dingell
Chairman, Committee on Energy and Commerce
United States House of Representatives
Washington, D.C. 20515
cc: Representative Joe Barton

The Honorable Peter J. Visclosky
Chairman, Subcommittee on Energy
and Water Development
Committee on Appropriations
United States House of Representatives
Washington, D.C. 20515
cc: Representative David L. Hobson

The Honorable Byron Dorgan
Chairman, Subcommittee on Energy
and Water Development
Committee on Appropriations
United States Senate
Washington, D.C. 20510
cc: Senator Pete V. Domenici

QUARTERLY STATUS REPORT ON THE LICENSING ACTIVITIES AND REGULATORY DUTIES OF THE UNITED STATES NUCLEAR REGULATORY COMMISSION

OCTOBER - DECEMBER 2006

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[1]Note: The period of performance covered by this report includes activities occurring between the first day of October and last day of December 2006. The transmittal letter to Congress accompanying this report may provide more recent information in order to keep Congress fully and currently informed of NRC's licensing and regulatory activities.

I Implementing Risk-Informed Regulations

The U.S. Nuclear Regulatory Commission (NRC) continues to make significant progress toward risk-informing its regulations for nuclear power reactors. On November 22, 2004, the NRC published a final rule, 10 CFR 50.69, "Risk-Informed Categorization and Treatment of Structures, Systems, and Components for Nuclear Power Reactors." This risk-informed regulation establishes an alternate set of requirements incorporating up-to-date analytic tools and risk insights to enhance plant safety by enabling nuclear power plant licensees to determine more precisely the safety significance of reactor systems, structures, and components and maintain these structures, systems, and components in a manner commensurate with their safety significance. To ensure the new regulation is properly implemented, the NRC published Revision 1 to Regulatory Guide 1.201, "Guidelines for Categorizing Structures, Systems and Components in Nuclear Power Plants According to Their Safety Significance," in May 2006.

Risk-informed requirements for emergency core cooling systems are also being developed. The NRC published a proposed rule for risk-informing these requirements on November 7, 2005. The NRC is resolving open issues related to this rulemaking as it develops the final rule.

Broad efforts to transform the overall deterministic structure of NRC regulations into a new format based on the use of risk information are also in progress. Since 2003, the NRC has been working on a regulatory structure for new plant licensing that would result in risk-informed, technology-neutral regulations for licensing of future nuclear power reactor designs. The NRC is also investigating whether this risk-informed, technology-neutral regulatory structure could apply or be available to risk inform the current regulations on light water reactors in 10 CFR Part 50.

II Reactor Oversight Process

The NRC continues to implement the Reactor Oversight Process (ROP) at all nuclear power plants. The NRC continues to meet with interested stakeholders on a periodic basis to collect feedback on the effectiveness of the process and to consider feedback for future ROP refinements. Recent activities include the following:

- The staff hosted monthly ROP public meetings on October 24 and December 6, 2006. The meeting attendees discussed ROP mitigating systems performance index implementation, the integration of safety culture into the ROP performance indicator (PI) improvements, and open and new frequently asked questions on the PIs and other inspection program issues.

- The staff participated in the Region I and III Utility Group safety culture workshops in November 2006. The workshop attendees discussed recent ROP changes to incorporate safety culture and the impact of the changes on operating reactor licensees.

- The NRC conducted Inspector Counterpart meetings in all four NRC regional offices during November and December 2006. The staff presented inspection program information, such as safety culture enhancements, to regional and resident inspectors and their management.

- The NRC conducted a survey of external stakeholders to seek public comments on its implementation of the ROP. The survey was published in the *Federal Register* on October 10 and the survey comment period ended on December 1, 2006.

- The staff provided a keynote address at the Institute of Nuclear Power Operation's annual Human Performance Workshop during November 14-16, 2006. The NRC keynote address discussed the role of inspection findings and cross-cutting issues in the enhanced ROP. There were about 125 workshop attendees, with most nuclear power utilities participating.

- During October 23-27, 2006, the staff hosted a Senior Reactor Analyst (SRA) counterpart meeting with NRC regional and headquarters SRAs. The meeting was held at the Idaho National laboratory in Idaho Falls, Idaho, and focused on training and other topics involving risk assessment of inspection findings under the ROP.

III Status of Issues in the Reactor Generic Issues Program

During the reporting period, the staff has achieved progress in resolving the following generic issues (GI):

GI - 200, "Tin Whiskers"

The GI Screening Panel has completed the initial screening of GI-200, "Tin Whiskers." GI-200 addresses the concerns regarding tin whiskers as a metallic formation possibly resulting from mechanical stress on pure tin or tin alloys. Also, the panel has concluded that the staff should classify tin whiskers as a compliance issue with respect to the maintenance rule rather than as a generic issue. Based on the screening investigation of GI-200, the panel recommends that the issue be dropped from further consideration as a GI. The staff proposes to close the issue in February 2007.

Generic Issue -196, "Boral Degradation"

The technical assessment of GI-196 was completed in August 2006 and submitted to the Advisory Committee on Nuclear Waste (ACNW) for review. The objective of GI-196 is to determine the safety /criticality implications of Boral blistering in spent fuel dry storage casks in the event of water intrusion (e.g., submersion in a pool of water for repair or inspection). Boral has been widely used as a neutron absorber for dry cask storage of spent nuclear fuel, and several instances of Boral blistering and deformation have been reported. The blisters are usually located at the site of corrosion pits or impurities, and the root cause of blistering has been attributed to escaping hydrogen and steam. The staff is closing the issue with no new requirements for licensees and discussed its findings with the ACNW during the 175th ACNW meeting, December 12-14, 2006. The Committee had no objection to the staff's proposal to close the issue in February 2007. In addition, the Committee would like to remain informed of any future development in the area of Boral blistering and its continued effectiveness as

a neutron absorber, including the results from the International Atomic Energy Agency (IAEA) effort (SPAR- II) currently under way.

All other GIs continue to be on track in accordance with the schedules previously established.

IV Licensing Actions and Other Licensing Tasks

Operating power reactor licensing actions are defined as orders, license amendments, exemptions from regulations, relief from inspection or surveillance requirements, topical reports submitted on a plant-specific basis, notices of enforcement discretion, or other actions requiring NRC review and approval before they can be implemented by licensees. The Fiscal Year (FY) 2006 NRC Performance Plan incorporates two output measures related to licensing actions -- number of licensing actions completed per year and age of the licensing action inventory.

Other licensing tasks for operating power reactors are defined as licensee responses to NRC requests for information through generic letters or bulletins, NRC responses to 2.206 petitions, NRC review of generic topical reports, responses by the Office of Nuclear Reactor Regulation (NRR) to regional office requests for assistance, NRC review of licensee 10 CFR 50.59 analyses and final safety analysis report updates, or other licensee requests not requiring NRC review and approval before they can be implemented by licensees. The FY 2007 NRC Performance Plan incorporates one output measure related to the number of other licensing tasks completed.

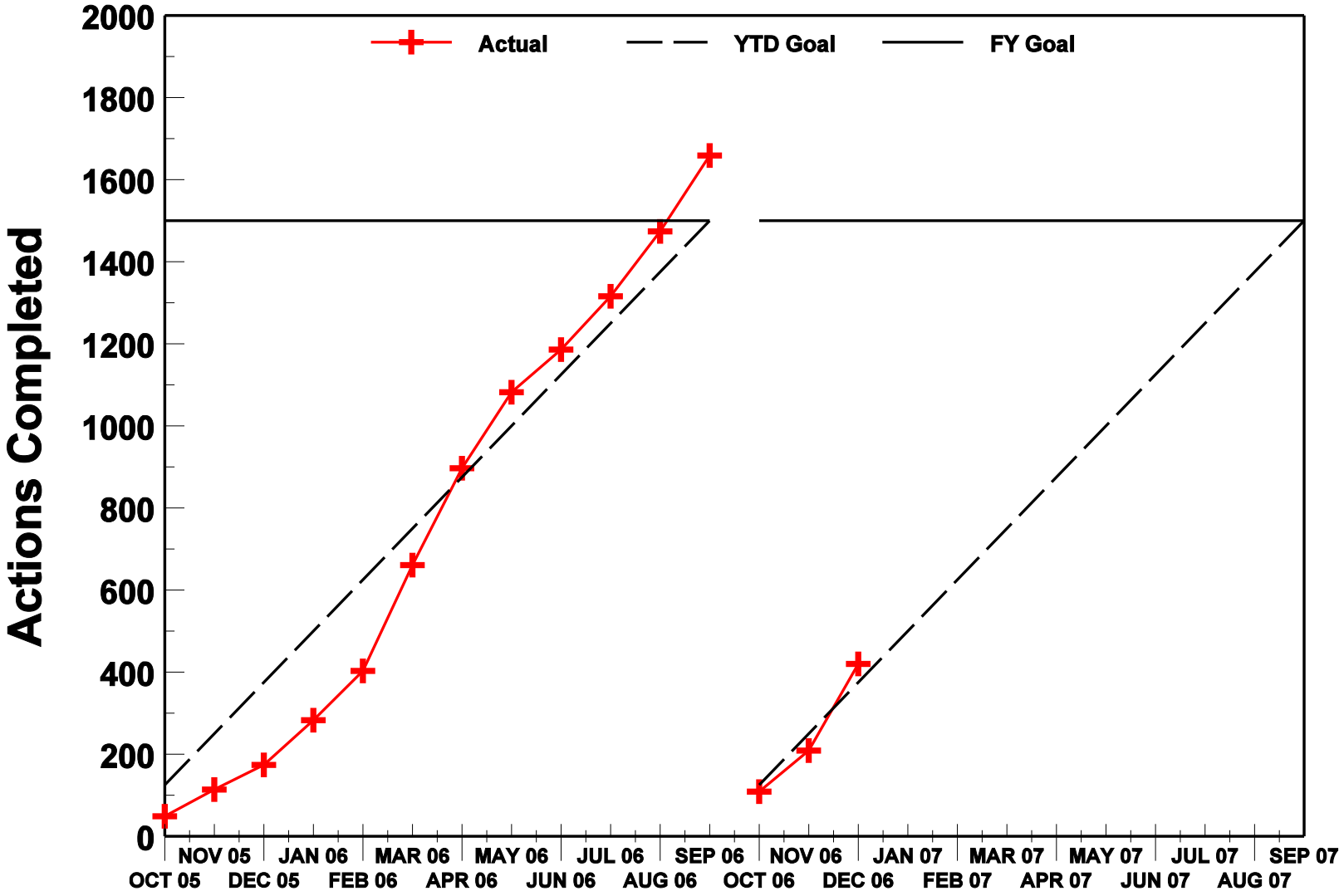
The actual FY 2005 and FY 2006 results, the FY 2007 goals, and the actual FY 2007 results for the three NRC Performance Plan output measures for operating power reactor licensing actions and other licensing tasks are shown in the following table.

PERFORMANCE PLAN				
Output Measure	**FY 2005 Actual**	**FY 2006 Actual**	**FY 2007 Goals**	**FY 2007 Actual (thru 12/31/2006)**
Licensing actions completed/year	1609	1659	≥ 1500	420
Age of licensing action inventory	92.6% ≤ 1 year; and 99.9% ≤ 2 years	97.8%≤ 1 year; and 99.9% ≤ 2 years	96% ≤ 1 year; and 100% ≤ 2 years old	93.3%≤ 1 year; and 100% ≤ 2 years
Other licensing tasks completed/year	715	676	≥ 500	299

The charts on the following pages show NRC's FY 2006 trends for the three operating power reactor licensing action and other licensing task output measure goals.

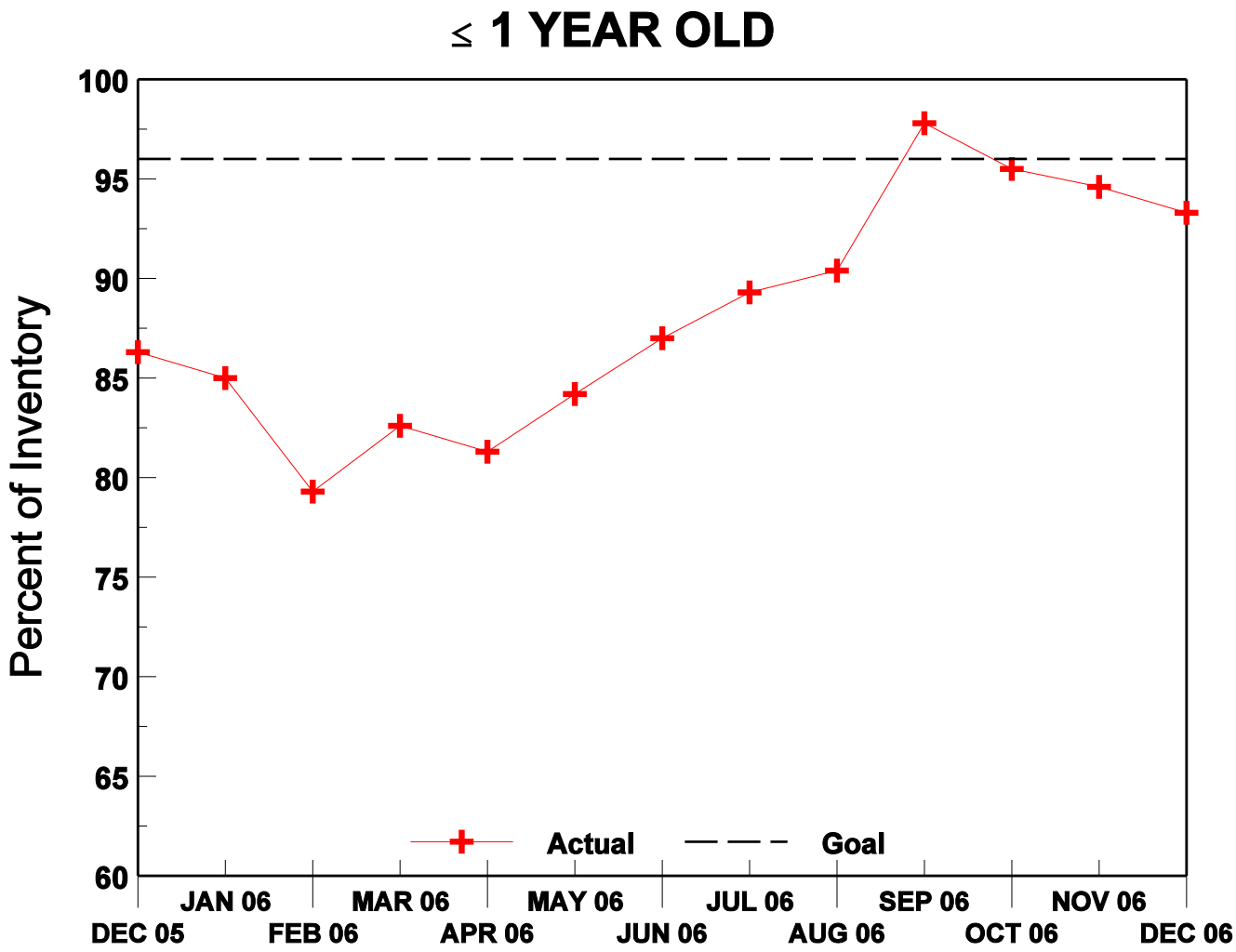
Nuclear Reactor Safety - Reactor Licensing

Performance Plan Target: Completed Licensing Actions



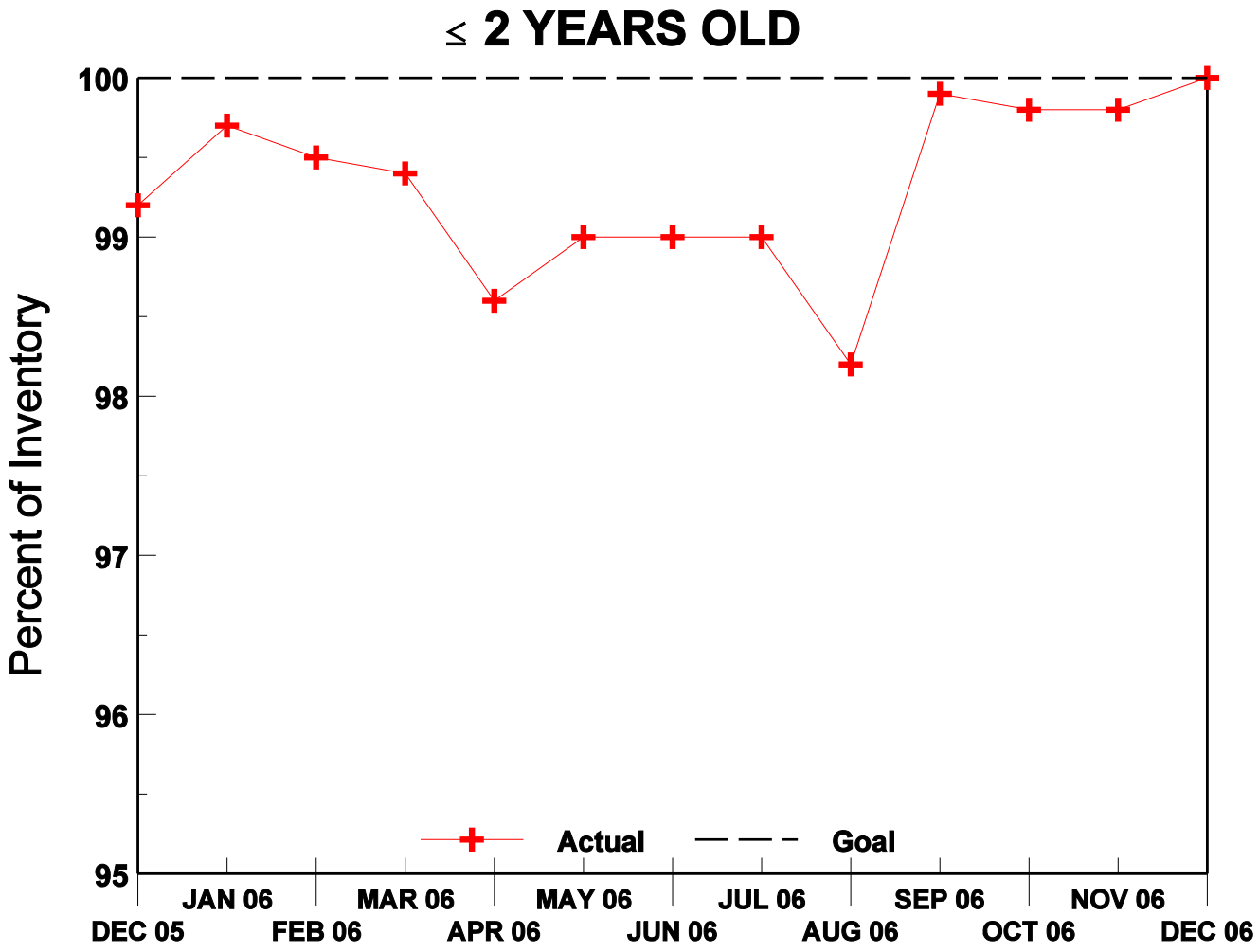
Nuclear Reactor Safety - Reactor Licensing

Performance Plan Target: Age of Licensing Action Inventory



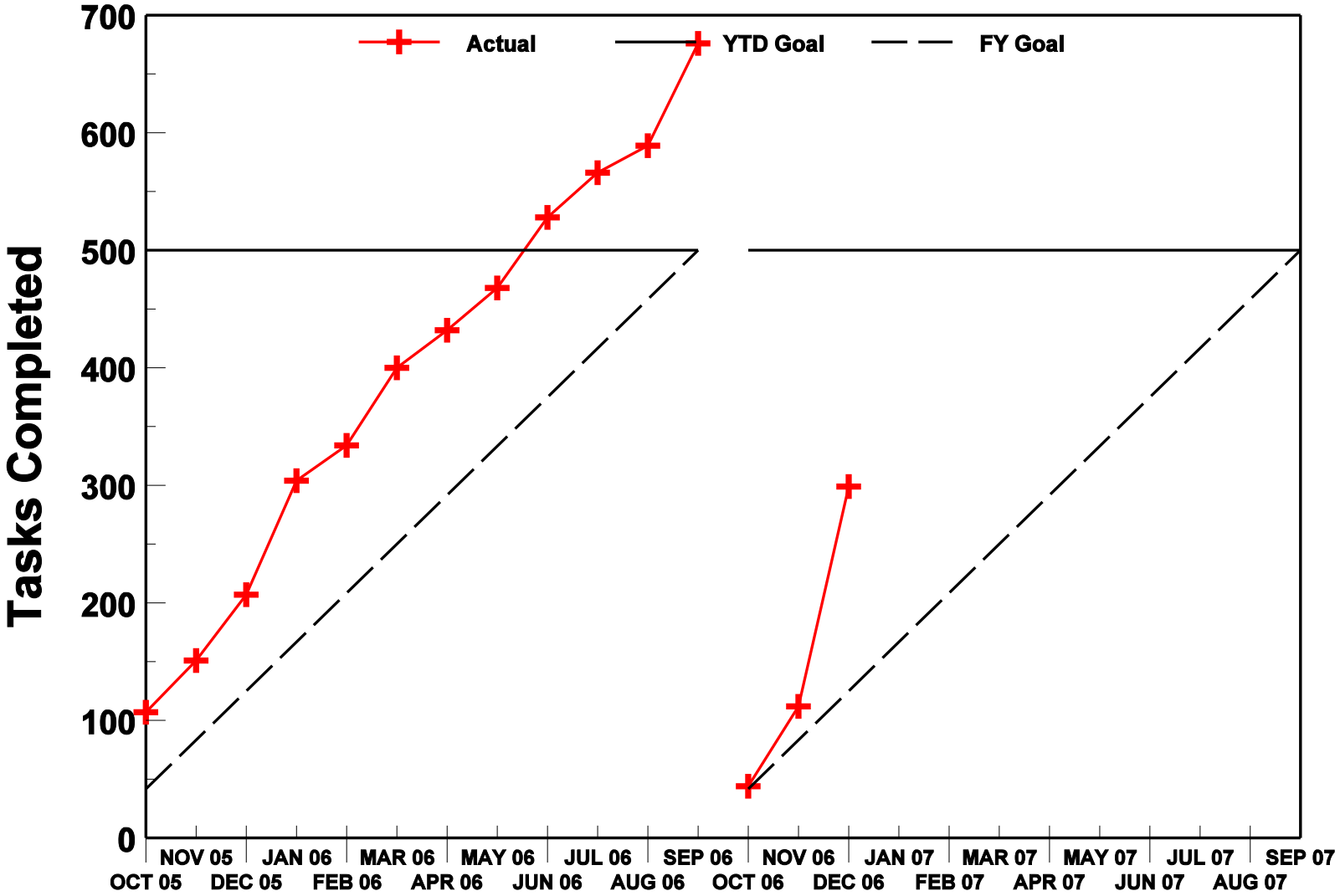
Nuclear Reactor Safety - Reactor Licensing

Performance Plan Target: Age of Licensing Action Inventory



Nuclear Reactor Safety - Reactor Licensing

Performance Plan Target: Completed Other Licensing Tasks



V Status of License Renewal Activities

The NRC has completed the review of license renewal applications for 44 of the 104 units licensed to operate. NRC is currently re-assessing the impacts of the budget constraints of the continuing resolution on the renewal review schedules.

Nine Mile Point, Units 1 and 2, License Renewal Application

The renewed licenses for Nine Mile Point, Units 1 and 2, were issued on October 31, 2006, completing the review of the license renewal application.

Monticello License Renewal Application

The renewed licenses for Monticello were issued on November 8, 2006, completing the review of the license renewal application.

Palisades License Renewal Application

The safety evaluation report (SER) was issued in September 2006, and the final supplemental environmental impact statement (SEIS) was issued in October 2006. A request for hearing was received in response to the NRC's notice of opportunity for hearing, and an Atomic Safety and Licensing Board (ASLB) was established. The ASLB determined that the petitioner did not submit an admissable contention and terminated the proceeding. The petitioner has appealed the ASLB's decision to the Commission. In June 2006, the Commission affirmed the ASLB's decision. The renewed license was issued on January 17, 2007.

Oyster Creek License Renewal Application

The Oyster Creek license renewal application is currently under review. The updated SER was issued in December 2006, and the final SER and SEIS are scheduled to be issued in January 2007. A request for hearing was received in response to the NRC's notice of opportunity for hearing, an ASLB panel was established, and the hearing is proceeding.

Pilgrim License Renewal Application

The Pilgrim license renewal application is currently under review, and the staff is preparing requests for additional information and reviewing the licensee's responses. The draft SEIS is scheduled to be issued in January 2007 and the SER, identifying any remaining open items, in March 2007. A request for hearing was received in response to the NRC's notice of opportunity for hearing, an ASLB panel was established, and the hearing is proceeding.

Vermont Yankee License Renewal Application

The Vermont Yankee license renewal application is currently under review, and the staff is preparing requests for additional information and reviewing the licensee's responses. The draft SEIS was issued in December 2006, and the SER, identifying any remaining open items, is

scheduled to be issued in April 2007. A request for hearing was received in response to the NRC's notice of opportunity for hearing, an ASLB panel was established, and the hearing is proceeding.

James A. FitzPatrick License Renewal Application

The FitzPatrick license renewal application is currently under review, and the staff is preparing requests for additional information and reviewing the licensee's responses.

Susquehanna License Renewal Application

On September 13, 2006, the NRC received an application for renewal of the operating license for Susquehanna Steam Electric Station. The staff has completed its acceptance review and has found the application acceptable for docketing and review. The licensee has submitted the license renewal application concurrent with a request for an extended power uprate. Approval of the extended power uprate will require the licensee to supplement the renewal application in the future.

Wolf Creek License Renewal Application

On October 4, 2006, the NRC received an application for renewal of the operating license for Wolf Creek Generating Station. The staff has completed its acceptance review and has found the application acceptable for docketing and review. Until it is determined whether a hearing will be conducted, a nominal 30-month review schedule has been established with a final decision on issuance of the renewed license scheduled for March 2009. The application is currently under review, and the staff is preparing requests for additional information and reviewing the licensee's responses.

Shearon Harris License Renewal Application

On November 16, 2006, the NRC received an application for renewal of the operating license for Shearon Harris Nuclear Power Plant. The staff has completed its acceptance review and has found the application acceptable for docketing and review.

VI Enforcement Process and Summary of Reactor Enforcement by Region

Reactor Enforcement by Region

The reactor enforcement statistics below are arranged by Region, most recent calendar quarter, fiscal year to date, and two previous fiscal years for comparison purposes. The statistics are also depicted in separate tables for the non-escalated and escalated reactor enforcement data as well as separate tables for the escalated enforcement data associated with traditional enforcement and the reactor oversight process. These tables are then followed by brief descriptions of the escalated reactor enforcement actions associated with both traditional enforcement and the reactor oversight process (as well as any other significant actions) taken during the applicable calendar quarter.

NON-ESCALATED REACTOR ENFORCEMENT ACTIONS						
		Region I	Region II	Region III	Region IV	TOTAL
Cited Severity Level IV or GREEN	Quarter 1 FY 07	0	0	0	0	0
	FY 07 YTD Total	0	0	0	0	0
	FY 06 Total	10	0	1	3	14
	FY 05 Total	6	0	4	0	10
Non-Cited Severity Level IV or GREEN	Quarter 1 FY 07	33	35	75	67	210
	FY 07 YTD Total	33	35	75	67	210
	FY 06 Total	[2]227	154	256	259	896
	FY 05 Total	239	197	300	282	1018
TOTAL Cited and Non-Cited Severity Level IV or GREEN	Quarter 1 FY 07	33	35	75	67	210
	FY 07 YTD Total	33	35	75	67	210
	FY 06 Total	237	154	257	262	910
	FY 05 Total	245	197	304	282	1028

NOTE: The non-escalated enforcement data above reflects the cited and non-cited violations either categorized at Severity Level IV or associated with GREEN findings during the referenced time periods. The numbers of cited violations are based on enforcement action tracking system data that may be subject to minor changes following verification. The monthly totals generally lag by 30 days due to inspection report and enforcement development. GREEN findings that do not have associated violations are not included in this data.

[2] The "Non-Cited" and "Total Cited and Non-Cited" FY 06 YTD Totals for Region I were increased by three in order to include three non-cited violations from an inspection report that was not counted during September 2006.

ESCALATED REACTOR ENFORCEMENT ACTIONS ASSOCIATED WITH TRADITIONAL ENFORCEMENT						
		Region I	Region II	Region III	Region IV	TOTAL
Severity Level I	Quarter 1 FY 07	0	0	0	0	0
	FY 07 YTD Total	0	0	0	0	0
	FY 06 Total	0	0	0	0	0
	FY 05 Total	0	0	2	0	2
Severity Level II	Quarter 1 FY 07	0	1	0	0	1
	FY 07 YTD Total	0	1	0	0	1
	FY 06 Total	0	0	0	0	0
	FY 05 Total	0	1	2	0	3
Severity Level III	Quarter 1 FY 07	1	0	1	0	2
	FY 07 YTD Total	1	0	1	0	2
	FY 06 Total	2	1	7	1	11
	FY 05 Total	2	1	3	2	8
TOTAL Violations Cited at Severity Level I, II, or III	Quarter 1 FY 07	1	1	1	0	3
	FY 07 YTD Total	1	1	1	0	3
	FY 06 Total	2	1	7	1	11
	FY 05 Total	2	2	7	2	13

NOTE: The escalated enforcement data above reflects the Severity Level I, II, or III violations or problems cited during the referenced time periods.

ESCALATED REACTOR ENFORCEMENT ACTIONS ASSOCIATED WITH THE REACTOR OVERSIGHT PROCESS						
		Region I	Region II	Region III	Region IV	TOTAL
Violations Related to RED Findings	Quarter 1 FY 07	0	0	0	0	0
	FY 07 YTD Total	0	0	0	0	0
	FY 06 Total	0	0	0	0	0
	FY 05 Total	0	0	3	0	3
Violations Related to YELLOW Findings	Quarter 1 FY 07	0	0	0	0	0
	FY 07 YTD Total	0	0	0	0	0
	FY 06 Total	0	0	1	0	1
	FY 05 Total	0	0	0	1	1
Violations Related to WHITE Findings	Quarter 1 FY 07	3	2	0	[3]1	6
	FY 07 YTD Total	3	2	0	1	6
	FY 06 Total	3	6	3	2	14
	FY 05 Total	5	5	5	1	16
TOTAL Related to RED, YELLOW, or WHITE Findings	Quarter 1 FY 07	3	2	0	1	6
	FY 07 YTD Total	3	2	0	1	6
	FY 06 Total	3	6	4	2	15
	FY 05 Total	5	5	8	2	20

NOTE: The escalated enforcement data above reflects the violations or problems cited during the referenced time periods which were associated with either RED, YELLOW, or WHITE findings. RED, YELLOW, or WHITE findings that do not have associated violations are not included in this data.

[3] One violation associated with a WHITE significance determination process finding in Region IV will not be described because it is related to security.

Description of Escalated Reactor Enforcement Actions Associated with Both Traditional Enforcement the Reactor Oversight Process (as Well as Any Other Significant Actions) Taken During the First Quarter of Fiscal Year 2007

Indiana Michigan Power Company (D.C. Cook Nuclear Plant) EA-06-177

On October 6, 2006, a Severity Level III Notice of Violation and Proposed Civil Penalty in the amount of $60,000 was issued to the Indiana Michigan Power Company (I&M). The violation resulted from changes the licensee made to its D.C. Cook Emergency Plan in April 2003. In accordance with 10 CFR 50.54(q), a licensee may make changes to emergency plans without Commission approval only if the changes do not decrease the effectiveness of the plans and the plans, as changed, continue to meet the standards of 10 CFR 50.47(b). In April 2003, I&M made changes, without Commission approval, to the Fission Product Barrier Matrix Emergency Action Level (EAL) in the D.C. Cook Emergency Plan that decreased the effectiveness of the plan and resulted in use of a non-standard scheme of EALs.

Constellation Generation Group, LLC (Calvert Cliffs Nuclear Power Plant) EA-06-198

On October 27, 2006, a Notice of Violation was issued for a violation associated with a WHITE significance determination process (SDP) finding involving inadequate design control during the establishment of the over-current trip setting for an electrical circuit breaker that supplies power to the support systems for the 1A emergency diesel generator (EDG). The low over-current trip setting would have impacted the capability of the 1A EDG to perform its intended safety function during certain design basis events. The violation was cited against 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” because the licensee failed to ensure that design control measures provided for verifying or checking the adequacy of the design when Calvert Cliffs modified the on-site electrical distribution design by installing a new 1A EDG in 1996. Specifically, calculation D-E-94-001, dated August 26, 1994, did not account for all the loads that can simultaneously start after an undervoltage event when establishing the short-term over-current trip setting for electrical circuit breaker 1MCC123, the electrical supply for the 1A EDG support systems. In addition, neither adequate design reviews, alternate calculations, nor suitable testing was done to identify that the over-current trip setting was incorrect.

Duke Power Company, LLC (Oconee Nuclear Station) EA-06-199

On November 22, 2006, a Notice of Violation was issued for a violation associated with a WHITE SDP finding involving the failure to control maintenance activities effectively and the failure to assess and manage the risk associated with removing an access cover in the south wall of the standby shutdown facility (SSF) to facilitate installation of temporary electrical power cables. The violation was cited against technical specifications because of an inadequate procedure and 10 CFR 50.65(a)(4) because of the licensee’s failure to adequately assess and manage the increase in risk from maintenance activities. Specifically, on August 13, 2003, while performing planned maintenance involving the opening of a penetration in the SSF exterior wall to route temporary electrical power cables, the licensee failed to use an adequate procedure to open and control a penetration through a passive flood protection barrier and

route temporary power cables. The procedure did not address the installation of temporary power cables and did not address breaching and restoring a flood barrier. As a result, the licensee failed to assess and manage the increase in risk associated with the degradation of the flood protection capability of the SSF's exterior wall from August 13, 2003, to August 3, 2005.

Florida Power and Light Company (Turkey Point Unit 3) EA-06-200

On November 22, 2006, a Notice of Violation was issued for a violation associated with a WHITE SDP finding involving the failure to assess and manage adequately the increase in risk of performing maintenance on the A-train 480-volt 3C load center while the facility was operating in decay heat removal mode with one operating A-train residual heat removal (RHR) pump. The violation was cited against 10 CFR Part 50.65(a)(4) for failure to assess and manage adequately the increase in risk before performing maintenance on the A-train 480-volt 3C load center. Specifically, the licensee elected to proceed with restoration maintenance on the A-train 480-volt 3C load center without measures to reduce the risk during the activity. During the maintenance activity, the licensee installed a breaker associated with the 3C 480-volt load center that was later determined to be defective, which caused a loss of the operating A-train RHR pump. This resulted in a loss of all decay heat removal for 7 minutes.

FirstEnergy Nuclear Operating Company (Beaver Valley Power Station) EA-06-215

On December 12, 2006, a Notice of Violation was issued for a violation associated with a WHITE SDP finding involving an inadequate emergency preparedness implementing procedure that would be used during certain emergency conditions to assess the off-site radiological consequences for the purpose of developing protective action recommendations (PAR). The dose assessment procedure deficiency degraded the PAR process capability in that the procedure, under certain circumstances, could result in untimely PARs, potentially affecting the populated area within 5 to 10 miles of the site. The violation was cited against 10 CFR 50.47(b)(9) because the licensee's emergency plan failed to have an adequate method for assessing actual and potential off-site consequences of a radiological emergency. Specifically, Procedure 1/2-EPP-IP-2.6.3, Dose Projection, Revision 13, required using a 1-hour estimated release duration for events where the duration could not be determined even though the 1-hour duration would not envelope existing plant conditions. This could lead to untimely protective action recommendations.

FirstEnergy Nuclear Operating Company (Beaver Valley Power Station) EA-06-152

On December 19, 2006, a Notice of Violation and a Confirmatory Order (effective immediately) were issued on December 19, 2006, as a result of an investigation of deliberate wrongdoing by a former contract mechanical engineer. The Notice of Violation includes two violations (categorized as one Severity Level III problem) which are cited against 10 CFR Part 50, Appendix B, Criterion III, "Design Control," and the licensee's procedures for engineering changes and design interface reviews and evaluations. Specifically, on June 1, 2005, the former contract engineer, who was responsible for preparation of the replacement reactor vessel closure head engineering change package (ECP), deliberately failed to adhere to a procedural requirement when he signed the ECP even though the majority of design interface evaluations were neither performed nor included in the ECP. Additionally, the engineer's supervisor did not review the ECP for completeness, technical quality, and procedural

compliance and failed to identify that the former contract engineer did not develop the ECP in accordance with licensee procedures. An alternative dispute resolution mediation session was held between the licensee and the NRC on September 28, 2006. Both parties agreed, among other things, that: (1) the former contract engineer deliberately failed to adhere to procedural requirements; (2) the licensee took multiple corrective actions to prevent recurrence; (3) there was a need for additional corrective actions at the licensee's facilities as well as an opportunity for other licensees in the industry to learn from this incident; (4) in light of the corrective actions the licensee has taken and has committed to take, the NRC would issue a Severity Level III violation with no civil penalty; and (5) the NRC would issue a Confirmatory Order confirming this agreement. The licensee's agreement was confirmed on December 14, 2006, when it signed the Consent and Hearing Waiver Form.

Entergy Nuclear Operations, Inc. (Vermont Yankee Nuclear Power Station) EA-06-253

On December 20, 2006, a Notice of Violation associated with a WHITE SDP finding was issued involving an August 31, 2006 shipment of a package containing radioactive material from the Vermont Yankee facility via an exclusive-use open transport vehicle, and the package did not conform to the applicable Department of Transportation (DOT) regulatory requirements when it arrived at the Susquehanna facility in Luzerne County, Pennsylvania, on September 1, 2006. The violation was cited against 10 CFR 71.5, "Transportation of Licensed Material," and DOT regulation 49 CFR 173.441(a) because the package containing the radioactive material was not designed and prepared to ensure, under conditions normally incident to transportation, that the radiation level on any point on the external surface of the package would not exceed 200 millirem per hour. As a result, when the package arrived at the Susquehanna facility, an area on the bottom of the external surface of the package exhibited a radiation level of 820 millirem per hour.

Southern Nuclear Operating Company, Inc. (Edwin I. Hatch Nuclear Plant) EA-06-013

On December 29, 2006, Notice of Violation and Proposed Imposition of a Civil Penalty ($104,000) was issued for a Severity Level II violation involving the licensee's failure to implement the requirements contained in 10 CFR 74.19(a)(1), (b) and (c). Specifically, since November 1981, the licensee: (1) failed to keep records showing inventory, transfer, or control of special nuclear material (SNM); (2) failed to implement procedures which included provisions for inventorying and accounting for approximately 233 inches of spent fuel rod fragments in their spent fuel pools; and (3) failed to include spent fuel fragments in their annual physical inventories of SNM possessed. The staff concluded that credit for the factor of *Identification* was not warranted because the licensee had sufficient opportunity to reconcile material control and accounting issues well before the licensee's records review in 2004 and the spent fuel pool inspections in 2005 and 2006. The staff concluded that credit was warranted for the factor of *Corrective Action* based on the results of the inspection completed on August 18, 2006.

VII Power Reactor Security Regulations

In response to the terrorist attacks on September 11, 2001, the NRC and the nuclear industry have taken many actions to ensure security at nuclear power plants. A series of Advisories, Orders, and Regulatory Issue Summaries have been issued and, as needed, will continue to be issued to strengthen further the security of NRC-licensed facilities and control of nuclear materials.

On October 26, 2006, NRC published the proposed rule to amend the regulatory requirements for nuclear power reactor facilities contained in Title 10 of the *Code of Federal Regulations* Part 73 to codify the actions taken to enhance security at power reactors. Several industry and state representatives attended and provided useful comments. On November 15 and 29, 2006, NRC conducted public meetings to provide members of the public an opportunity to provide their comments on the proposed rule. Several industry and state representatives attended and provided useful comments. Industry has requested an extension to the comment period due to the length of the proposed rule. On December 13, 2006, NRC participated in a public meeting to discuss implementation guidance for Subpart I of the proposed rule on fitness-for-duty (10 CFR Part 26), which will update the drug and alcohol testing provisions and establish enforceable requirements of the management of worker fatigue.

The NRC is conducting full force-on-force exercises at each site on a normal, three-year cycle using the expanded adversary characteristics that were developed as a result of the increased post-9/11 threat. The purpose of the force-on-force exercises is to assess and improve, as necessary, performance of defensive strategies at licensed facilities.

The NRC continues to support the U.S. Department of Homeland Security (DHS)/Homeland Security Council (HSC) initiative to enhance integrated response planning for power reactor facilities. The staff is continuing to work with HSC, DHS, the Federal Bureau of Investigation, and others to develop plans to address recommended actions. Working closely with licensees and DHS, the staff also developed EALs specifically for events involving credible imminent threats. NRC and the DHS continued to conduct monthly coordination meetings with a primary focus on categorization of and action on certain gaps identified during the Comprehensive Review (CR) process. The Comprehensive Review Outcomes Working Network was established to address gaps and potential enhancements identified during the Comprehensive Review program with representatives from DHS Risk Management Division, DHS Chemical and Nuclear Preparedness and Protection Division, U.S. Coast Guard, and the NRC. The October and November meetings focused on the path forward to follow up with two nuclear power plants and the local and state agencies that have participated in those CR processes, the new Buffer Zone Protection Plan grant application process, and the proposed plan to distribute the CR's Integrated Protective Measures Analysis report to States that request the document. On October 18, 2006, NRC attended a meeting with the Office of Assistant Secretary of Defense for Homeland Defense to provide an update on the current level of physical protection, tactical response, and consequence management at nuclear power plants. Additionally, NRC plans to develop insights to enhance tactical response planning for a potential attack upon these facilities, specifically considering Department of Defense assets.

In a series of recent meetings, the NRC staff has discussed various new reactor security topics with the industry's New Plants Security Task Force (NPSTF). On November 15 and December 12, 2006, NRC met with NPSTF to discuss the draft format and content guide for security assessments, the status of other security issues associated with new reactors, and concepts for the upcoming security assessment pilot process, which should begin in spring 2007.

VIII Power Uprates

There are three types of power uprates. A measurement uncertainty recapture (MUR) power uprate is a power uprate of less than 2 percent and is based on the use of more accurate feedwater flow measurement techniques. Stretch power uprates (SPU) are power uprates that

are typically on the order of less than 7 percent and are within the design capacity of the plant. SPUs require only minor plant modification. Extended power uprates (EPU) are power uprates beyond the design capacity of the plant and, thus, require major plant modification.

Licensees have been applying for and implementing power uprates since the 1970s as a way to increase the power output of their plants. The NRC staff has been conducting power uprate reviews since then and has completed 112 such reviews to date. Approximately 14,535 megawatts-thermal (MWt) or 4,845 megawatts-electric (MWe) in electric generating capacity or an equivalent of about 4.8 nuclear power plant units has been gained through implementation of power uprates at existing plants. The NRC staff currently has eight plant-specific power uprate applications under review: three MUR power uprates, one SPU, and four EPUs.

Regarding the Calvert Cliffs 1&2 and Fort Calhoun MUR power uprates, which were submitted on January 31 and March 31, 2005, respectively, the NRC did not complete the reviews within six months, which is the timeliness goal for MUR power uprates that are based on the use of NRC-approved methodologies for feedwater flow measurement. The scheduled reviews have been extended because the staff determined that an NRC-approved methodology for feedwater flow measurement may not be adequate based on recent operating experience.

In September 2006, the NRC staff surveyed all licensees to obtain information on whether they planned to submit power uprate applications over the next 5 years. Based on this survey, licensees plan to request power uprates for 27 nuclear power plants over the next 5 years. If approved, these power uprates will result in an increase of about 5,076 MWt or approximately 1,692 MWe.

IX New Reactor Licensing

The NRC expects to license the next generation of nuclear power plants using Part 52 to Title 10 of the *Code of Federal Regulations*, (10 CFR Part 52). 10 CFR Part 52 governs the issuance of standard design certifications, early site permits (ESP), and combined licenses (COL) for nuclear power plants. These activities are summarized in the table at the end of this section.

Design Certifications and Pre-Application Notifications

In January 2006, the NRC issued the AP1000 final design certification rule in the *Federal Register* (71 FR 4464). Applicants or licensees intending to construct and operate an AP1000 design may do so by referencing the AP1000 design certification rule. In March 2006, the NRC issued a revised final design approval based on Revision 15 of the Westinghouse design control document. Westinghouse has stated that it plans to submit a revised design control document in May 2007, which will incorporate the technical reports that it has submitted or plans to submit. This revision, if submitted, will be the basis for Westinghouse to request an amendment to its final design certification rule, which could then be referenced by a potential COL applicant.

In August 2005, the General Electric Company (GE) submitted an application for final design approval and standard design certification of the Economic Simplified Boiling Water Reactor (ESBWR) standard plant design. By letter dated December 1, 2005, the NRC staff informed

GE that the application, as revised and supplemented, was sufficiently complete to allow the staff to proceed with its detailed technical review and established a schedule of October 2007 for issuance of the SER with open items. Due to multiple revisions to the schedule and other delays by GE for its deliverables, the number of open items has increased. GE's ability to close all open items will directly impact the staff's ability to complete a COL review in 30 months for those applications referencing the ESBWR.

AREVA expects to apply for NRC certification of the U.S. Evolutionary Power Reactor (EPR) design in December 2007. UniStar Nuclear has stated it plans to reference the U.S. EPR design in a COL application in the late 2007. The NRC staff has begun pre-application review activities on the U.S. EPR design, including reviews of a number of topical and technical reports.

Mitsubishi Heavy Industries, Ltd., has indicated it will be submitting its design certification application for the U.S. Advanced Pressurized Water Reactor (US-APWR) in December 2007. No utility has yet publicly stated interest in referencing this design in a COL application.

The Pebble Bed Modular Reactor (PBMR) is a helium-cooled high-temperature reactor. NRC has entered into pre-application discussions with the company responsible for the design, construction, and operation of the reactor, Pebble Bed Modular Reactor Company, Ltd. (PBMR [Pty] Ltd.). PBMR (Pty) Ltd. has proposed submitting a design certification application in late 2008. No utility has yet publicly stated interest in referencing this design in a COL application.

The Small Liquid-Metal Reactor by Toshiba is being considered for siting in Galena, Alaska. The NRC staff has been in consultation with the appropriate Native American Tribal Governments regarding the siting of this reactor.

Early Site Permit Reviews

The staff is currently reviewing four ESP applications. The NRC staff received ESP applications in September and October 2003 from Exelon Generation Company, LLC, for the Clinton site; from System Energy Resources, Inc., a subsidiary of Entergy Corporation, for the Grand Gulf site; and from Dominion Nuclear North Anna, LLC (Dominion), for the North Anna site. The staff also received an ESP application in August 2006 from Southern Nuclear Operating Company (SNC) for the Vogtle site.

The staff has completed its safety and environmental reviews for both the Clinton and Grand Gulf ESP applications and has issued final safety evaluation reports (FSER) and Final Environmental Impact Statements (EIS) for these reviews. The ASLB has conducted hearings for both the Clinton and Grand Gulf ESP applications and issued the initial decision for the Clinton ESP in December 2006.

The staff issued its FSER for the North Anna ESP in June 2005 and, as a result of subsequent design changes submitted by Dominion, a Supplement to the FSER in November 2006. The Final EIS for the North Anna ESP was published in December 2006. The hearing is scheduled to begin in April 2007.

In August 2006, the staff received an application from SNC for an ESP for two additional units at the Vogtle site. The staff plans to issue both the FSER and Final EIS for the Vogtle ESP in May 2008.

Combined License Application Notifications

There were no new COL application plans announced in the last quarter.

Regulatory Infrastructure

In October 2006, NRC Region II established the Construction Inspection Organization at its new office space in the Richard B. Russell Federal Building in Atlanta, Georgia. This dedicated organization in the Region II office that will have total responsibility for the execution of all construction inspection activities across the country.

On October 29, 2006, the reorganization of the Office of Nuclear Reactor Regulation and the establishment of the Office of New Reactors became effective. These organizational changes reflect the growth in anticipated new reactor applications and continue to align the organization towards a design centered review approach.

The staff continues development of Draft Guide (DG)-1145, "Combined License Applications for Nuclear Power Plants (LWR Edition)." This document provides the guidance for all light-water reactor COL applications submitted under 10 CFR Part 52, whether referencing a certified design and ESP, both, or neither. The staff plans to publish the final regulatory guide, RG 1.206, "Combined License Applications for Nuclear Power Plants (LWR Edition)," following resolution of public comments and issuance of the final 10 CFR Part 52 rule.

The staff continues development of the revision of the Standard Review Plan (SRP) (NUREG-0800). In March 2007, all SRP sections will be issued in final.

In October 2006, the staff forwarded the draft final rule to update 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," to the Commission for consideration.

Interactions with the U.S. Department of Energy (DOE) on Next Generation Nuclear Plants

The Office of Nuclear Regulatory Research (RES) continues to engage in activities related to advanced reactor designs (i.e., non-light-water reactor designs). These include the DOE's Next Generation Nuclear Plant project, the PBMR pre-application review, and high-temperature gas-cooled reactor (HTGR) knowledge management. PBMR (Pty) Ltd. continues to interact with the staff in pre-application review activities supporting the PBMR design, an HTGR design.

The staff attended the biannual HTGR 2006 conference in South Africa in October 2006. The staff has initiated review of three white papers submitted by PBMR [Pty] Ltd on the PRA approach, licensing basis event selection, and classification of structures systems and components. Collectively, these papers will enable the staff to understand better the PBMR safety approach.

New Reactor Licensing Activities
As of December 2006

Organization/Design*	Sites under Consideration **	Planned Applications	Date	Basis
AP1000 (52-006) Certified Design				
Duke (742)	William S. Lee III Nuclear Station (2) (Cherokee)	COL	10/2007	Letters 3/4, 10/25/05, and 3/16/06 7/17/06 (RIS)
NuStart Energy (740)	Bellefonte (2)	COL	10/2007	Letters 12/7/2004 and 11/17/2005, Letter 7/17/06 (RIS)
Progress Energy (738)	Harris (2) Levy County, Fla (2)	COL COL	10/2007 7/2008	Letters 8/24/05 and 2/1/06; 11/1/05 Mtg Letter 7/12/06 (RIS)
South Carolina Electric and Gas (743)	Summer (2)	COL	10/2007	Letters 12/5/05 and 2/10/06, 7/13/06 (RIS)
Southern Nuclear Operating Company (737)	Vogtle (2)	ESP and COL	8/2006: ESP 3/2008: COL	Letters 7/26/05,8/17/05, 7/17/06 (RIS) Mtg Summary (ML052710018)
ESBWR (52-010) Design Certification Application submitted 8/24/05				
Dominion (741)	North Anna	COL	11/2007	Letter 11/22/05 7/17/06 (RIS)
Entergy (745)	River Bend	COL	5/2008	Letter 12/5/05, 7/17/06 (RIS)
NuStart Energy (744)	Grand Gulf	COL	11/2007	Letters 12/7/2004 and 11/17/2005, 7/17/06 (RIS)
EPR (733) Design Certification Application to be submitted 12/2007				
Unistar Nuclear (746)	Calvert Cliffs TBD Nine Mile Point	COL COLs (3) COL	January 2008 1st half of 2008 3rd Qtr 2008	Press Release; 11/2/05 Mtg; Letters 11/4/05, 6/8/06, 6/21/06

* Numbers in parentheses are Docket Number or Project Number
** Numbers in parentheses are the announced number of units to be built at the site

New Reactor Licensing Activities
As of December 2006

Organization/Design*	Sites under Consideration **	Planned Applications	Date	Basis
ABWR (52-001) Certified Design				
Amarillo Power	TBD (2)	ESP and COL	3rd Qtr 2007:ESP (COL: soon after)	Letter 3/13/06, 7/27/06
NRG Energy	South Texas Project (2)	COL	Late 2007	Letter 6/19/06
Unannounced Technology				
Florida Power & Light	TBD	COL	2009	Letter 4/3/06
TXU Power	TBD (2)	COL	Late 2008	Letter 6/27/06, 9/7/06
Unannounced Applicant	TBD	COL	3rd Qtr 2008	Letter 7/12/06
Exelon	TBD	COL	Nov 2008	Letter 9/29/06
Duke	Davie County, NC Oconee County, SC	ESP ESP	TBD TBD	Letter 3/16/06
US APWR (0751) Design				
Mitsubishi Heavy Industries, LTD.	N/A	Design Certification	12/2007	Letters 5/15/06, 6/20/06, 8/31/06

* Numbers in parentheses are Docket Number or Project Number
** Numbers in parentheses are the announced number of units to be built at the site