

December 15, 2005

The Honorable George V. Voinovich, Chairman  
Subcommittee on Clean Air, Climate Change,  
and Nuclear Safety  
Committee on Environment and Public Works  
United States Senate  
Washington, D.C. 20510

Dear Mr. Chairman:

The Fiscal Year (FY) 2005 Energy and Water Development Appropriations Act, House Reports 108-554 and 108-792, directed the U.S. Nuclear Regulatory Commission (NRC) to continue to provide a monthly 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 transmit the eighty-third report, which covers the month of October 2005. I am also providing more recent information in this cover letter in order to keep you fully and currently informed of NRC's licensing and regulatory activities.

In the last three reports, I updated you on NRC's responses to Hurricanes Katrina, Rita, and Wilma, and on November 2, 2005, I testified before the Senate Committee on Environment and Public Works on the NRC's preparations and response to Hurricane Katrina. Currently, the NRC is conducting a lessons learned review from these hurricanes, as we have done following previous hurricanes. The emergency preparedness capabilities and established procedures of the NRC and its licensees have proven to be effective in responding to events at licensee facilities, including natural phenomena, and the NRC is committed to continuous assessment and enhancement of these capabilities. The NRC will use the results of this lessons learned review to enhance further our strong coordination with the Department of Homeland Security, the Federal Emergency Management Agency, and the States.

The NRC conducted a comprehensive review of the existing programmatic functions of Office of Nuclear Reactor Regulation (NRR) to determine a more effective and efficient way to fulfill its mission, given the projected organizational needs. In October, the planned reorganization of NRR went into effect in order to prepare for the anticipated increase in the new reactor licensing workload and to align the organization better for risk-informed regulation. The Commission believes the reorganization will improve the effectiveness and efficiency of NRR's programs and processes. This reorganization was discussed in greater detail in our August 2005 report.

On October 18, 2005, the NRC transmitted a letter to the U.S. Environmental Protection Agency (EPA) initiating a Level 2 Consultation, under the Memorandum of Understanding (MOU) between the NRC and EPA entitled "Consultation and Finality on Decommissioning and Decontamination of Contaminated Sites," for the Kerr-McGee Cushing Refinery Decommissioning Site, in Cushing, Oklahoma. The Cushing facility was operated as an oil refinery between 1915 and 1972. Kerr-McGee used part of the site to process natural thorium and natural, depleted, and enriched uranium under Atomic Energy Commission (AEC) licenses between 1962 and 1966. These processes resulted in discharges and disposals of thorium and uranium at various locations on the Cushing site. The original AEC licenses were terminated in 1966, but the site was added to the NRC's Site Decommissioning Management Action Plan in 1992 and re-licensed by the NRC in 1993 to conduct remediation of the thorium and uranium contamination. The remediation is now complete, and Kerr-McGee has requested license termination. The consultation under the MOU is necessary because groundwater contamination in a small area of the site exceeds the Maximum Contamination Levels for uranium that were promulgated by the EPA under the Safe Drinking Water Act. The NRC has concluded in its safety evaluation report for the decommissioning of this site that cleanup activities are consistent with the Commission's regulations and would not be inimical to the common defense and security, nor to the health and safety of the public.

The Atomic Safety Licensing Board (ASLB) held an evidentiary hearing at NRC headquarters from October 24-27, 2005, on Louisiana Energy Services' (LES) proposed gas centrifuge uranium enrichment plant, known as the National Enrichment Facility. The hearing focused on four technical and one environmental contentions relative to the proposed facility: (1) plausibility and costs of deconversion; (2) plausibility and costs of transportation; (3) plausibility and costs of disposal; (4) sufficiency of the contingency factor used in the decommissioning funding cost estimate; and (5) sufficiency of the Environmental Impact Statement to address suitability of near-surface disposal. Additionally, on October 19, 2005, the Commission issued a Memorandum and Order directing the ASLB to consider the environmental impact of depleted uranium disposal and to resolve the issue in the ongoing adjudication. At the same time, the Commission also directed the NRC staff to consider, outside of the LES adjudication, whether NRC's low-level radioactive waste disposal regulation in 10 CFR Part 61 needs to be revised to address disposal of large quantities of depleted uranium. The ASLB's partial initial decision on these contentions is scheduled to be issued on February 27, 2006. The ASLB will conduct an additional evidentiary hearing in support of the mandatory hearing in March 2006 with an ASLB partial initial decision scheduled for June 2006.

On October 25, 2005, Dominion notified NRC that it was changing the design of the cooling system for the proposed new unit at North Anna to incorporate cooling towers. This change is intended to minimize thermal impact and level deviations on Lake Anna. The change will require revisions to the early site permit application, the environmental impact statement (EIS), and the final safety evaluation report. The impact on the schedule for the issuance of the EIS cannot be determined until the staff receives the final revision of the application.

On November 28, 2005, the NRC renewed the operating licenses of the Millstone Power Station, Units 2 and 3, for an additional 20 years after concluding there were no safety concerns or environmental impacts that would preclude renewal. With the renewal, the license for Unit 2 is extended to July 31, 2035, and the license for Unit 3 is extended to November 25, 2045. The Millstone plant is located about 3 miles southwest of New London, Connecticut.

On December 2, 2005, the NRC accepted an application from the General Electric Company to certify the design for the Economic Simplified Boiling Water Reactor advanced nuclear power plant. If design certification is granted, a company that wishes to build and operate a new nuclear power plant could choose to use the certified design and reference it in a license application.

On November 7, 2005, the NRC granted the request of Saxton Nuclear Experimental Corporation (SNEC) and GPU Nuclear to terminate the license for the Saxton nuclear facility, located in Bedford County, Pennsylvania. The facility began operations in November 1961, primarily to research various aspects of power reactor technology and to train personnel. After Saxton ceased operations in May 1972, spent fuel was shipped to the Department of Energy's Savannah River Site. SNEC and GPU Nuclear submitted a license termination plan to the NRC for the Saxton facility in February 2000, and conducted cleanup and decommissioning activities until they were completed in September 2005. NRC inspected decommissioning operations, independently verified the licensee's final radiation surveys, and concluded that the facility and site met the decommissioning criteria.

On November 10, 2005, NRC began to monitor closely the efforts of Southern Nuclear Operating Company to determine the disposition of pieces of spent nuclear fuel rods which could not be accounted for in the spent fuel storage pools at the Hatch nuclear power plant near Baxley, Georgia. In February 2005, NRC ordered all commercial nuclear power plant licensees to inventory their spent fuel pools. On October 28, 2005, the licensee completed its initial assessment. On November 10, 2005, the licensee reported to NRC that it had been unable to reconcile its inventory based on an initial review of records of spent fuel storage locations and visual verifications of fuel within the plant's spent fuel pools. Collectively, at that time, the fuel rod pieces were estimated to total approximately 68 inches. Recently, it was discovered that an additional 20 inches were unaccounted for. NRC inspectors have been monitoring the licensee's progress beginning with the first indication of an accounting problem. Because of extensive radiological and security measures in place, it is highly unlikely that the material is in an uncontrolled location or that it poses any risk to the public.

The NRC staff continues to work to complete matters associated with issuance of an independent spent fuel storage installation (ISFSI) license to Private Fuel Storage, LLC. In particular, on November 22, 2005, the NRC staff transmitted a letter to the Advisory Council on Historic Preservation (ACHP), formally terminating the NRC's participation in the National Historic Preservation Act Consultation process and requesting that the ACHP transmit comments on such termination in accordance with ACHP regulations.

I also want to inform you of the agency's progress in implementing the Energy Policy Act of 2005. Some of the agency's recent actions include:

- Sections 603 - Maximum Assessment, 608 - Treatment of Modular Reactors, and 625 - Antitrust Review: On October 27, 2005, the NRC published in the Federal Register (70 FR 61885) a Final Rule required by the Energy Policy Act that eliminated NRC's antitrust reviews of future applications to construct or operate a power reactor and revised NRC's Price-Anderson Act regulations to incorporate the provisions of the Energy Policy Act.

- Section 651(a) - Security Evaluations; Design Basis Threat Rulemaking: On November 7, 2005, the NRC published in the Federal Register (70 FR 67380) a proposed rule to amend regulations pertaining to the design basis threat (DBT). Among other things, the proposed rule would amend the regulations to make generically applicable the security requirements previously imposed by the NRC's April 29, 2003 DBT orders, which applied to existing licensees, and redefine the level of security requirements necessary to ensure that public health and safety and common defense and security are adequately protected. The proposed rule would revise the DBT requirements for radiological sabotage and theft or diversion of NRC-licensed Strategic Special Nuclear Material.
- Section 651(b) - Backup Power for Certain Emergency Notification Systems: On November 16, 2005, NRC staff met with representatives of the Indian Point nuclear power plant to discuss the portion of the Energy Policy Act involving the facility's Alert and Notification System. Representatives from DHS/FEMA participated in the meeting. The licensee discussed corrective actions aimed at improving the reliability of the current system and plans to replace it.
- Section 651(e) - Treatment of Accelerator-Produced and Other Radioactive Material as Byproduct Material: On November 9, 2005, the NRC conducted a public roundtable discussion at NRC headquarters to seek input on a rulemaking to implement NRC's new regulatory authority over accelerator-produced radioactive material and certain discrete sources of naturally occurring radioactive material.
- Section 653 - Use of Firearms by Security Personnel: On October 11, 2005, NRC staff met with representatives of the Department of Justice's (DOJ) Alcohol, Tobacco, Firearms and Explosives Agency (ATFE) to discuss the enhanced weaponry provision of the Energy Policy Act. The topics addressed included ATFE's willingness to support NRC efforts in creation of the required implementing guidelines; ensuring accountability for acquiring, possessing, and custody of weaponry on site; ATFE's approach to inquiries it is receiving from licensees; and enhanced weaponry provision for transportation activities.

Please do not hesitate to contact me if I may provide additional information.

Commissioner Jaczko did not participate in the development of this letter to the extent it deals with the Yucca Mountain project.

Sincerely,

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Nils J. Diaz

Enclosure:  
Monthly Status Report on the Licensing Activities  
and Regulatory Duties of the U.S. NRC, October 2005

cc: Senator Thomas R. Carper

Identical letter sent to:

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

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

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

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

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

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

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

**OCTOBER 2005**

Enclosure

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<sup>1</sup>Note: The period of performance covered by this report includes activities occurring between the first and last day of October 2005. 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**

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 further 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 that the new regulation is properly implemented, the NRC developed Regulatory Guide 1.201, "Guidelines for Categorizing Structures, Systems and Components in Nuclear Power Plants According to Their Safety Significance" for trial use. The NRC is now working to finalize Regulatory Guide 1.201.

Risk-informed requirements for emergency core cooling systems are also being developed. The NRC expects to publish a proposed rule for these requirements in November 2005, with a 90-day public comment period. Final rules are usually issued about nine months after a proposed 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 which would result in risk-informed, technology-neutral regulations for licensing of future nuclear power reactor designs. The staff expects the first part of the program, developing the guidance and criteria for establishing the regulations, to be ready for stakeholder review in mid-2006. NRC is also investigating whether this risk-informed, technology-neutral regulatory structure should apply or be available to risk-inform the current regulations on light water reactors in 10 CFR Part 50.

## **II Revised 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 the feedback for future ROP refinements. Recent activities include the following:

- On October 12 and 13, 2005, NRC Headquarters and Regional staff met to develop recommended changes through realignment of inspection resources to the ROP Baseline Inspection program. The purpose of the realignment process was to find ways to ensure that inspection resources are being applied in areas where they are most needed. The recommendations will be forwarded to the regional division directors for approval.
- On October 19, 2005, NRC staff hosted the monthly Mitigating Systems Performance Index (MSPI) public meeting in Headquarters. The staff discussed its initial review of the plant-specific MSPI basis documents and the remaining milestones scheduled before MSPI implementation. The staff conveyed generic observations from the basis



document reviews and candidate outlier followup. During the afternoon session, the staff discussed the ROP cross cutting issue guidance document and Performance Indicator Frequently Asked Questions that remain open to further discussion.

### **III Status of Issues in the Reactor Generic Issue Program**

In October 2005, the NRC staff presented its findings on Generic Safety Issue 80 (GSI-80), "Pipe Break Effects on Control Rod Drive Hydraulic Lines in the Drywells of Boiling Water Reactor MARK I and II Containments," to the Advisory Committee on Reactor Safeguards (ACRS). GSI-80 is concerned with postulated damage to control-rod drive mechanisms during loss of coolant accidents that could prevent emergency shutdown of the reactor. The staff recommended that GSI-80 be closed without any changes to the regulations or guidance. The ACRS agreed with staff's recommendation in a letter to the Executive Director for Operations dated October 18, 2005, which is available on the NRC's public web site at [www.nrc.gov/reading-rm/doc-collections/acrs/letters/2005/](http://www.nrc.gov/reading-rm/doc-collections/acrs/letters/2005/). This issue is expected to be closed in November 2005.

In October 2005, the NRC staff also issued Regulatory Issue Summary (RIS) 2005-25, "Clarification of NRC Guidelines for Control of Heavy Loads." The NRC issued RIS 2005-25 as a result of recommendations developed through GSI-186, "Potential Risk and Consequences of Heavy Load Drops in Nuclear Power Plants," as well as supporting data from the NRC reactor oversight program. RIS 2005-25 clarifies and reemphasizes existing regulatory guidance for the control of heavy loads. RIS 2005-25 is available from the NRC Agency-Wide Documents Access and Management System (ADAMS) under accession number ML052340485.

All other GSIs continue to be on track in accordance with the schedules previously submitted.

### **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 10 CFR 2.206 petitions, NRC review of generic topical reports, responses by the Office of Nuclear Reactor Regulation to regional requests for assistance, NRC review of licensee 10 CFR 50.59 analyses and Final Safety Analysis Report (FSAR) updates, or other licensee requests not requiring NRC review and approval before they can be implemented by licensees. The FY 2006 NRC Performance Plan incorporates one output measure related to other licensing tasks -- number of other licensing tasks completed.

The NRC did not meet its timeliness goals at the end of FY 2005 for completing 100 percent of its reactor licensing actions within 2 years because the scheduled review of the Vermont Yankee extended power uprate was extended to allow a thorough review of key technical issues associated with safe operation at higher power levels. The schedule for the review of the

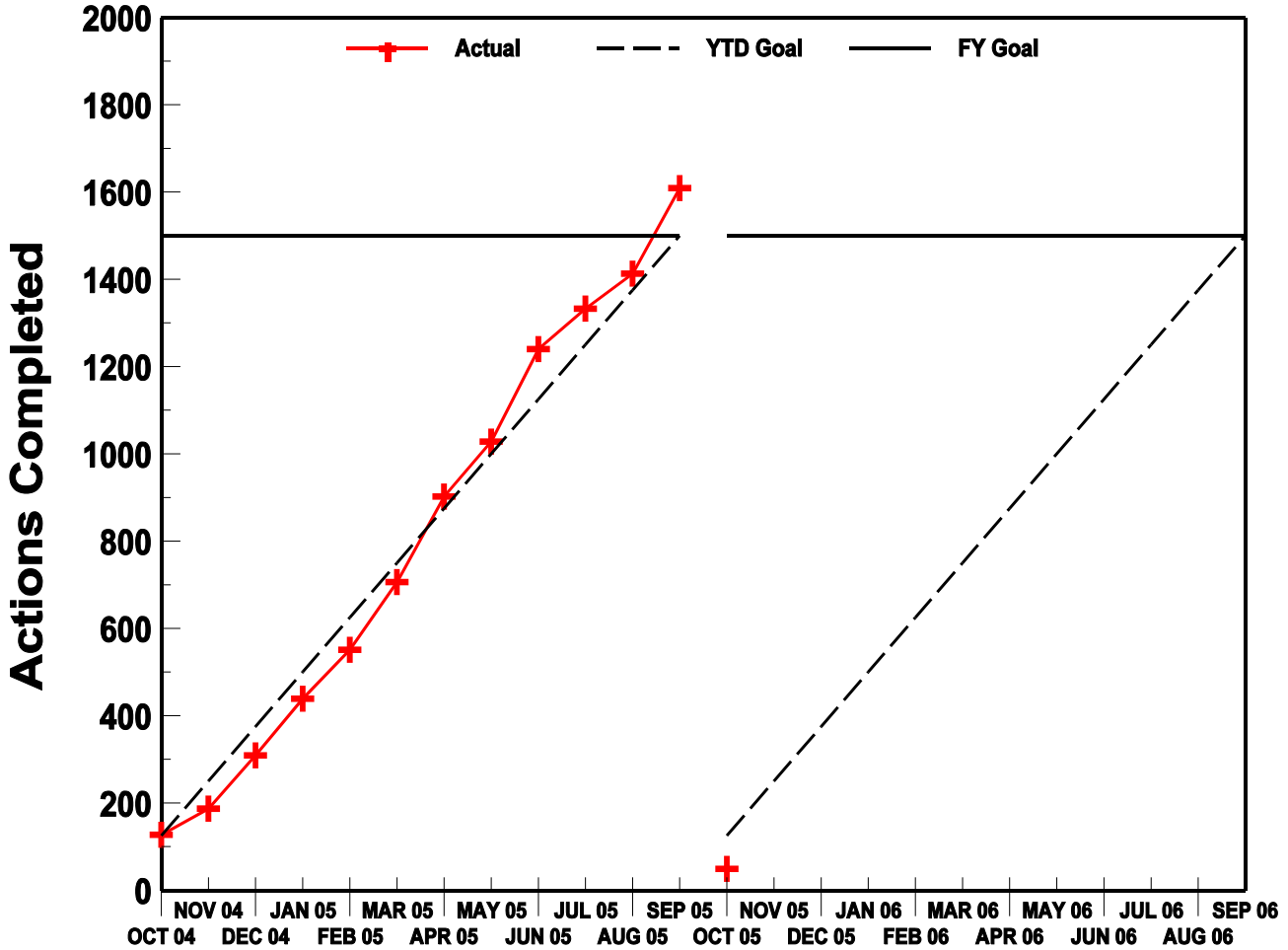
Vermont Yankee uprate had also exceeded a goal the agency established to complete extended power uprates within 1 year. The NRC met the other FY 2005 output measure goals.

The actual FY 2004 and FY 2005 results, the FY 2006 goals, and the actual FY 2006 results, as of October 31, 2005, for the three NRC Performance Plan output measures for operating power reactor licensing actions and other licensing tasks are shown in the table below.

<b>PERFORMANCE PLAN</b>				
<b>Output Measure</b>	<b>FY 2004 Actual</b>	<b>FY 2005 Actual</b>	<b>FY 2006 Goals</b>	<b>FY 2006 Actual (thru 10/31/2005)</b>
Licensing actions completed/year	1741	1609	≥ 1500	49
Age of licensing action inventory	91% ≤ 1 year; and 100% ≤ 2 years	92.6% ≤ 1 year; and 99.9% ≤ 2 years	96% ≤ 1 year; and 100% ≤ 2 years	90.1% ≤ 1 year; and 99.6% ≤ 2 years
Other licensing tasks completed/year	671	715	≥ 500	107

# Nuclear Reactor Safety - Reactor Licensing

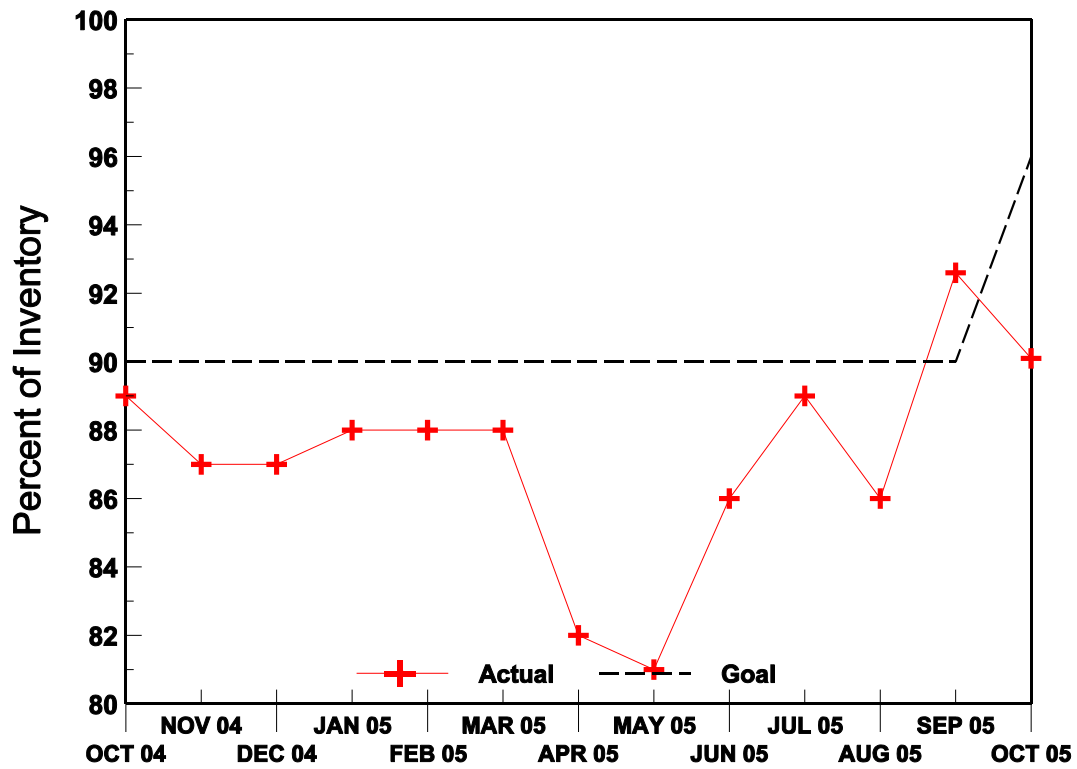
Performance Plan Target: Completed Licensing Actions



# Nuclear Reactor Safety - Reactor Licensing

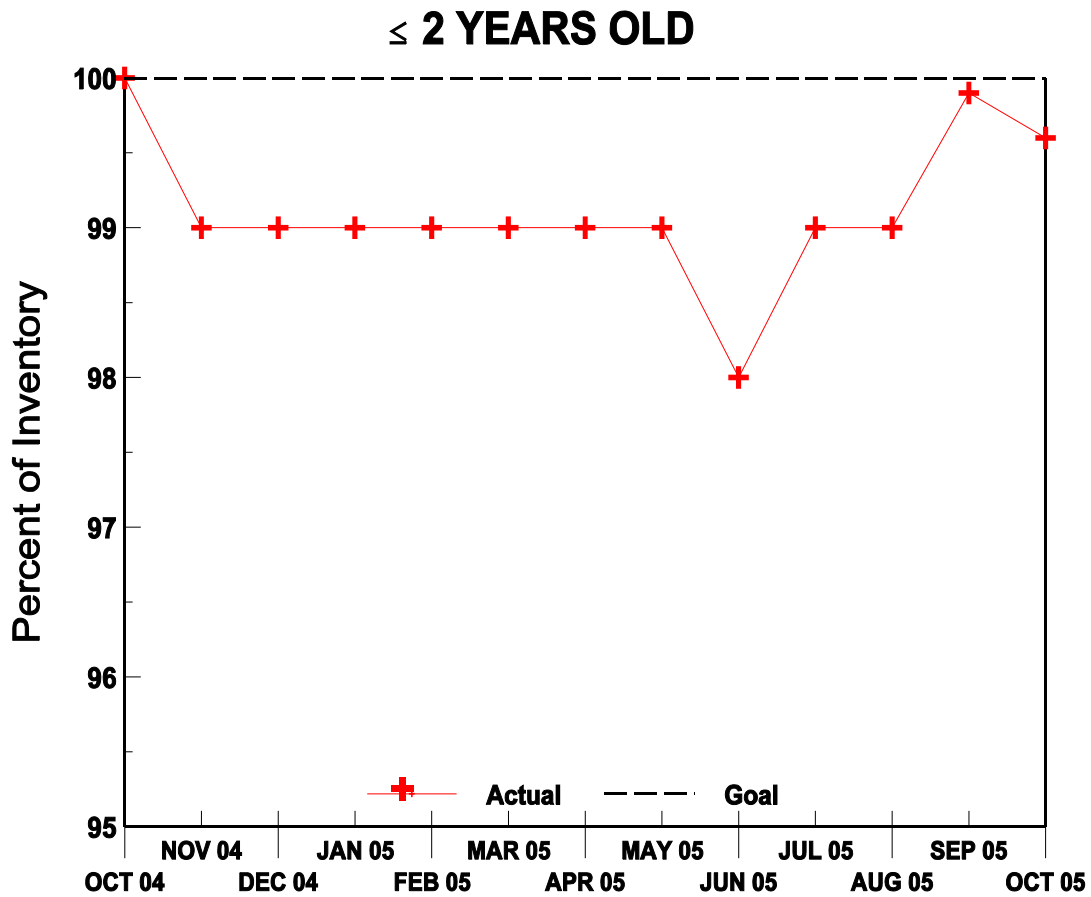
Performance Plan Target: Age of Licensing Action Inventory

≤ 1 YEAR OLD



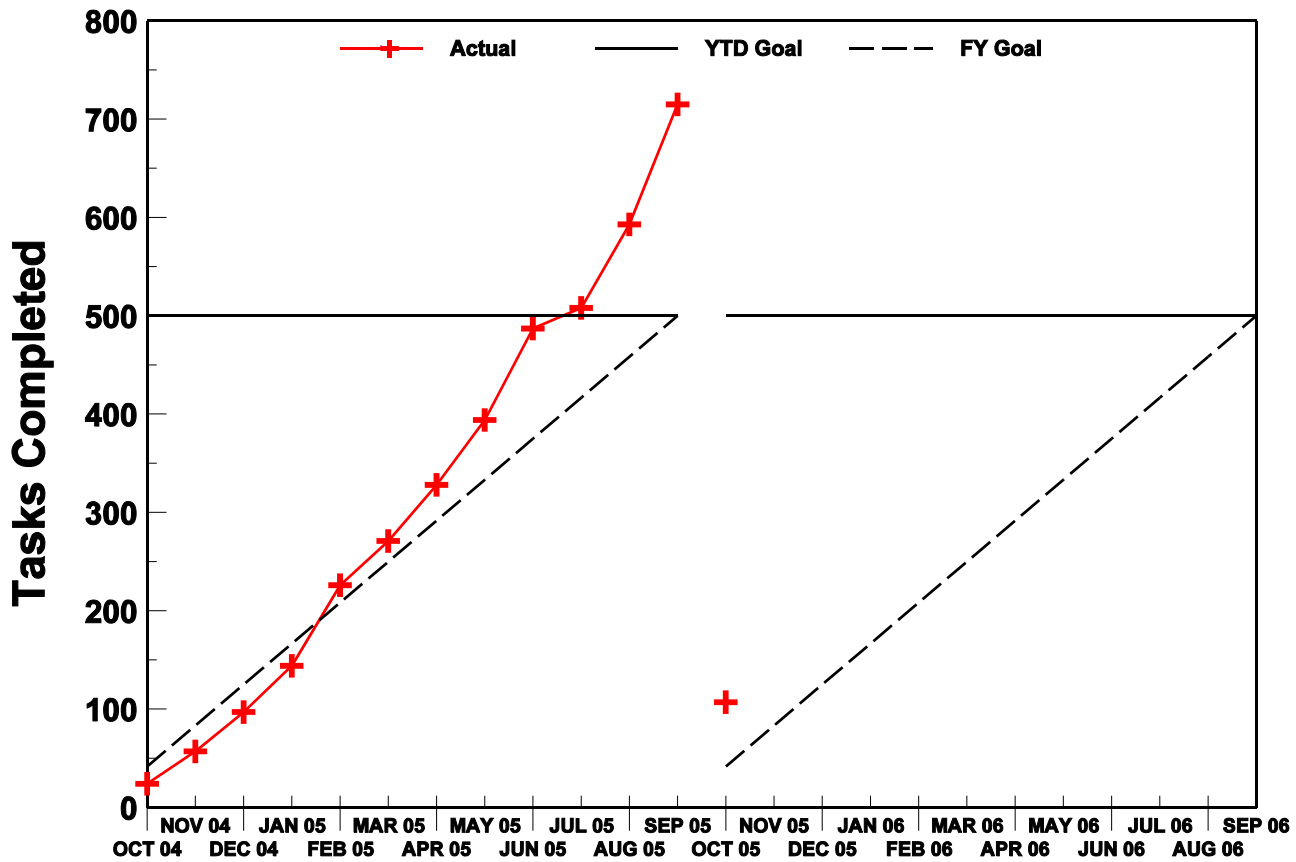
# Nuclear Reactor Safety - Reactor Licensing

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**

### Browns Ferry, Units 1, 2, and 3, License Renewal Application

The staff issued the final supplemental environmental impact statement (SEIS) in June 2005 and the draft safety evaluation report (SER), identifying remaining open items, in August 2005. The applicant's responses to the open items were received in September 2005. The staff is reviewing the applicant's responses and is preparing to issue the final SER in January 2006.

### Millstone, Units 2 and 3, License Renewal Application

The staff issued the final SEIS in July 2005 and the SER in August 2005. A petition for late intervention and request for hearing was submitted in February 2005 by Suffolk County New York. In July 2005, the Atomic Safety and Licensing Board (ASLB) certified the issue to the Commission for resolution. In October 2005, the Commission denied Suffolk County's request for an exemption from 10 CFR § 50.47(a)(1), which provides that emergency planning issues are not germane to license renewal determinations. In addition, the Commission found that the balance of late-filing factors weighed against considering Suffolk County's petition to intervene and that Suffolk County's three emergency planning contentions fell outside the scope of, and were immaterial to the proceeding, and that those contentions were therefore inadmissible. The Commission then terminated the adjudicatory proceeding. The staff is completing activities to support a decision on renewing the licenses in November 2005.

### Point Beach, Units 1 and 2, License Renewal Application

The final SEIS was issued in August 2005 and the SER in October 2005. The staff is completing activities to support a decision on renewing the licenses in December 2005.

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

The Nine Mile Point license renewal application was submitted in May 2004, and the review was placed on hold at the applicant's request to address issues identified during the review. The applicant submitted an amended application in July 2005, and the staff resumed its review. The draft SEIS was issued in September 2005. A revised schedule with an October 2006 decision on the renewed licenses was issued that took into account the duration of the hold and the additional review time needed.

### Brunswick, Units 1 and 2, License Renewal Application

The Brunswick license renewal application is currently under review, and the staff is preparing requests for additional information. The draft SEIS was issued in August 2005, and the draft SER, identifying any remaining open items, is scheduled to be issued in December 2005.

### Monticello License Renewal Application

The Monticello license renewal application is currently under review, and the staff is preparing requests for additional information. The draft SEIS is scheduled to be issued in February 2006, and the draft SER, identifying any remaining open items, is scheduled to be issued in April 2006. A request for hearing has been received in response to the NRC's notice of opportunity for hearing, and an ASLB has been established.

### Palisades License Renewal Application

The Palisades license renewal application is currently under review, and the staff is preparing requests for additional information. The draft SEIS is scheduled to be issued in February 2006, and the draft SER, identifying any remaining open items, is scheduled to be issued in June 2006. A request for hearing has been received in response to the NRC's notice of opportunity for hearing, and an ASLB has been established.

### Oyster Creek License Renewal Application

The Oyster Creek license renewal application is currently under review, and the staff is preparing requests for additional information. The draft SEIS is scheduled to be issued in June 2006 and the draft SER, identifying any remaining open items, in October 2006. Until it is determined whether a hearing will be conducted, a 30-month review schedule has been established with a final decision on issuance of the renewed license scheduled for January 2008.

## **VI Status of Review of Private Fuel Storage, Limited Liability Corporation's Application for a License to Operate an Independent Spent Fuel Storage Installation on the Reservation of the Skull Valley Band of Goshute Indians**

This matter involves the application of Private Fuel Storage, L.L.C. (PFS) to construct and operate an independent spent fuel storage installation on the reservation of the Skull Valley Band of Goshute Indians in Skull Valley, Utah. On September 9, 2005, the Commission issued a Memorandum and Order, CLI-05-19, in which it (a) denied the State of Utah's petition for review of the ASLB's February 24, 2005, Final Partial Initial Decision and other decisions on aircraft crash issues, and (b) authorized the NRC staff, upon making the requisite findings on all non-contested issues, to issue a license to PFS to construct and operate its proposed facility. The staff is reviewing the administrative and adjudicatory record to identify all necessary terms and conditions, and anticipates issuance of a license in the near future.



## VII Enforcement Process and Summary of Reactor Enforcement by Region

### Reactor Enforcement by Region

Reactor Enforcement Actions *						
		Region I	Region II	Region III	Region IV	TOTAL
Severity Level I	October 05	0	0	0	0	0
	FY 06 YTD Total	0	0	0	0	0
	FY 05 Total	0	0	2	0	2
	FY 04 Total	0	0	0	0	0
Severity Level II	October 05	0	0	0	0	0
	FY 06 YTD Total	0	0	0	0	0
	FY 05 Total	0	0	2	0	2
	FY 04 Total	0	1	0	0	1
Severity Level III	October 05	0	0	1	0	1
	FY 06 YTD Total	0	0	1	0	1
	FY 05 Total	2	1	3	2	8
	FY 04 Total	1	2	4	0	7
Cited Severity Level IV or GREEN	October 05	0	0	0	0	0
	FY 06 YTD Total	0	0	0	0	0
	FY 05 Total	6	0	4	0	10
	FY 04 Total	1	0	2	3	6
Non-Cited Severity Level IV or GREEN	October 05	15	30	38	6	89
	FY 06 YTD Total	15	30	38	6	89
	FY 05 Total	239	197	300	282	1018
	FY 04 Total	271	175	290	301	1037

**NOTE:** Numbers of violations are based on enforcement action tracking system data that may be subject to minor changes following verification. The numbers shown as Severity Level I, II, III or IV refer to the number of Severity Level I, II, III, and IV violations or problems. The monthly totals generally lag by 30 days due to inspection report and enforcement development.

<b>Escalated Reactor Enforcement Actions Associated with the Reactor Oversight Process</b>						
		Region I	Region II	Region III	Region IV	Total
Notices of Violation Related to RED, YELLOW, or WHITE Findings	October 05 RED	0	0	0	0	0
	October 05 YELLOW	0	0	0	0	0
	October 05 WHITE	0	0	0	0	0
	FY 06 YTD Total	0	0	0	0	0
	FY 05 Total	5	4	5	1	15
	FY 04 Total	3	4	7	6	20

### **Description of Significant Actions Taken During October 2005**

Exelon Nuclear (Byron Station) EA-05-159 - On October 27, 2005, a Severity Level III Notice of Violation was issued for problem involving violations of the Byron Station Technical Specifications. Specifically, an engineer engaged in deliberate misconduct when he failed to perform assigned surveillances of ventilation systems and falsified the records to show the surveillances as completed, a violation of 10 CFR 50.9, "Completeness and Accuracy of Information."

### **VIII 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 the security at nuclear power plants. A series of Advisories, Orders, and Regulatory Issue Summaries have been and, as needed, continue to be issued to strengthen further the security of NRC-licensed facilities and control of nuclear materials. During October 2005, the NRC completed telephonic walk-throughs of the imminent attack warning protocols at every nuclear power plant to verify that licensees had implemented appropriate procedures and training to facilitate key actions in response to notification of an imminent threat to the plant. The staff is in the process of developing lessons learned and recommendations.

In March 2003, the NRC initiated a pilot program for full force-on-force exercises, which used expanded adversary characteristics that were developed as a result of the increased post 9/11 threat. The pilot was completed and NRC is now implementing exercises at each site on a three-year cycle. The purpose of the force-on-force exercises is to assess and improve, as necessary, performance of defensive strategies at licensed facilities. The NRC retains responsibility for oversight of the mock adversary force and evaluation of licensee performance. Measures have been established to minimize any possibility for a conflict of interest with respect to responsibilities for physical protection. To date, mock adversary force personnel have performed adequately in the force-on-force exercises in which they have participated.

The NRC continues to support the 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, Federal Bureau of Investigation and others to develop plans to address recommended actions. Working closely with licensees and DHS, the staff also developed Emergency Action Levels specifically for events involving credible imminent threats.

The NRC is continuing the site-specific spent fuel pool assessments begun July 5, 2005. The NRC is conducting these assessments to identify additional mitigation strategies to enhance the spent fuel pool cooling safety function under severe circumstances challenging the functional capabilities of the plant. Fifty-nine site assessments have been completed as of the end of October 2005. The NRC plans to complete the spent fuel pool assessments for the remaining operating reactor sites by the end of the calendar year. In addition, the NRC is continuing with the structural analyses of two spent fuel pools to provide added assurance of spent fuel structural safety margin. These analyses will also be completed by the end of January 2006.

On August 26, 2005, the Commission published a Proposed Rule on fitness-for-duty (10 CFR Part 26), including both drug/alcohol testing and fatigue-related provisions, for public comment (70 FR 50442). The principal reason for the rulemaking is to update the rule and enhance consistency with advances in other relevant Federal rules and guidelines. The comment period ends on December 27, 2005.

## **IX 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 are power uprates that are typically on the order of less than 7 percent and are within the design capacity of the plant. Stretch power uprates require only minor plant modification. Extended power uprates (EPUs) 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 to date, has completed 105 such reviews. Approximately 13,250 megawatts-thermal (MWt) or 4,417 megawatts-electric (MWe) to the Nation's electric generating capacity or an equivalent of about four nuclear power plant units has been gained through implementation of power uprates at existing plants. The NRC staff currently has 13 plant-specific power uprate applications under review. The 13 applications under review include four MUR power uprates, two SPUs, and seven EPUs.

Regarding the Vermont Yankee (VY) EPU, which was submitted on September 10, 2003, the scheduled review has been extended to allow a thorough review of key technical issues associated with the safe operation at the new power levels. On October 21, 2005, the NRC provided its Draft Safety Evaluation (SE) of the VY EPU application to the ACRS and to the licensee in support of ACRS subcommittee meetings on the VY EPU in mid-November 2005 (in Vermont) and in late November (in Rockville). The licensee has been asked to review the Draft SE for proprietary information so that a redacted version can be provided to the public. After the

NRC staff issues a Final SE, currently scheduled for February 24, 2006, the ASLB will hold a hearing to address litigation issues.

Regarding the Calvert Cliffs 1&2 and Fort Calhoun MUR power uprates, which were submitted on January 31 and March 31, 2005, respectively, the scheduled review has been extended to resolve NRC questions related to the manner by which a validation of the installation of the Crossflow system, for measurement of feedwater flow, would be done.

In June 2005, 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 and information obtained since the survey, licensees plan to request power uprates for 19 nuclear power plant units over the next 5 years. If approved, these power uprates will result in an increase of about 4,333 MWt or approximately 1,444 MWe.

## **X      New Reactor Licensing**

The NRC expects to license the next generation of light water reactor 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 for nuclear power plants. The NRC will review the existing regulatory framework to determine how it may be adapted to license the next-generation, non-light water reactor nuclear power plants.

### Design Certifications and Pre-Application Meetings

On August 24, 2005, General Electric (GE) submitted their design certification application for the Economic Simplified Boiling Water Reactor (ESBWR) design. On September 23, 2005, the staff informed GE that the NRC has completed the acceptance review for the ESBWR design certification application. The staff found that portions of the application were not sufficiently complete and that the application would not be formally accepted for docketing until additional information is provided. On October 24, 2005, GE responded to the deficiencies identified by the NRC staff. This response referred to 12 separate GE submittals which provided responses to all 14 deficiencies identified by the staff and provided revised design control document text when applicable. The staff is currently performing an acceptance review of this information and plans to inform GE of the results within 30 days.

On November 2, 2005, the staff will hold a public meeting with Framatome regarding the EPR pre-application review, discussing accident analysis methodology and severe accident mitigation and analysis methods. The staff will hold a separate public meeting with Framatome and Constellation to discuss licensing approaches for EPR and a possible combined license.

PBMR (Pty) Ltd. continues to engage the NRC staff in planning discussions to prepare for the pre-application review of the pebble-bed modular reactor (PBMR) design. PBMR (Pty) Ltd. intends to pursue a design certification under 10 CFR Part 52. The company has also stated that it intends eventually to seek deployment of the PBMR in the U.S. The NRC has held two public pre-application planning meetings with PBMR (Pty) Ltd., the first on June 30, 2005, and the second on September 21 and 22, 2005. During the meetings, PBMR (Pty) Ltd. clarified the technical topics that it expects will be the main focus of the pre-application discussions. During pre-application, PBMR (Pty) Ltd. expects to submit detailed white papers on these topics and support the submittals with educational sessions and topical workshops for the NRC staff.

PBMR (Pty) Ltd.'s most recent schedule projections show the pre-application phase to extend to the end of 2007 or early 2008, followed by a design certification application in 2008.

### Early Site Permits

The staff is currently reviewing three ESP applications. Dominion Nuclear North Anna, LLC (Dominion) submitted an ESP application in September 2003 for its North Anna site located in Louisa County, Virginia. The final safety evaluation report (FSER) for the North Anna ESP was issued on June 16, 2005. However, on October 25, 2005, Dominion notified the staff that it was changing the design of the cooling system for proposed Unit 3 from a once-through cooling system to a closed cooling system. The change was made to address the water usage concerns expressed by the Commonwealth of Virginia and local citizens. The change will require revisions to the application, the environmental impact statement (EIS), and the FSER. The impact on the current schedule for the issuance of Dominion's EIS cannot be determined until the staff receives the final revision of the ESP application; however, it is likely that the December 2005 date will not be met. There will be no impacts on the other two ESP applicants as a result of Dominion's actions at this late stage in the review process.

In September 2003, Exelon Generation Company, LLC submitted an ESP application for its Clinton site located in Harp Township, DeWitt County, Illinois. The NRC staff issued the draft SER for the Exelon ESP application for the Clinton site on February 10, 2005. The staff issued the supplemental draft SER with open items on August 26, 2005. The FSER is scheduled to be issued on February 17, 2006.

System Energy Resources, Inc. submitted an ESP application, in October 2003, for its Grand Gulf site located in Claiborne County, Mississippi. On October 21, 2005, the staff issued the FSER for the Grand Gulf ESP application.

All three applications require an EIS. The draft EISs were issued on December 10, 2004, for the North Anna site; March 2, 2005, for the Clinton site; and April 21, 2005, for the Grand Gulf site. The staff is scheduled to issue the final EISs in April 2006 for the Grand Gulf site, and July 2006 for the Clinton site.

### Combined License

On August 17, 2005, Southern Nuclear Operating Company notified the NRC staff that Georgia Power Company had directed them to pursue an ESP/Combined Operating License (COL) at the Vogtle Electric Generating Plant site located near Waynesboro, Georgia. Southern is scheduled to submit an ESP application in August 2006, and their COL application in March 2008.

On October 25, 2005, Duke Energy announced that they had decided to develop a COL application for two AP1000 reactors. The selection of a site is scheduled to be completed by the end of calendar year 2005. The application will be submitted in late 2007 or early 2008.

On September 15, 2005, AREVA and Constellation Energy announced the formation of UniStar Nuclear. This joint enterprise is intended to provide a single source for design, construction, and operation of new nuclear plants. UniStar Nuclear will market the EPR reactor design. AREVA and Constellation each own half of Unistar. Bechtel also supports the company, providing architect-engineer and construction expertise. The staff is scheduled to hold a public meeting with Framatome and Constellation to discuss licensing approaches for EPR and a possible combined license.

On September 22, 2005, NuStart Energy announced that they had selected Grand Gulf and Bellefonte as the two sites they will use for their applications for combined licenses for new nuclear plants. The Grand Gulf site was designated for the General Electric ESBWR design and the Bellefonte site for the Westinghouse Advanced Passive 1000 reactor design. NuStart stated that they will file the applications in late 2007 or early 2008.

On September 22, 2005, Entergy announced that it will be preparing a combined license application for its River Bend Station site. Entergy stated that the ESBWR design will be used at the River Bend site and that the application will be submitted in 2007 or 2008. On November 15, 2005, the staff will hold a public meeting with Entergy to discuss schedule and other issues related to a combined license application.

On August 24, 2005, Progress Energy notified the NRC staff that they expect to identify both a site and a vendor by the end of calendar year 2005, with the potential submittal of an application for a Combined License in the first quarter of calendar year 2008. On November 1, 2005, the NRC staff will hold a public meeting with Progress Energy to discuss their schedule for an application and other application related activities.

#### Regulatory Infrastructure

On October 24, 2005, the NRC staff sent a proposed rulemaking to revise 10 CFR Part 52 to the Executive Director for Operations. The changes to the rule are based on lessons learned during the previous design certification reviews and on discussions with external stakeholders about the ESP and COL processes.

In December 2005, the NRC staff is scheduled to issue to the Commission the staff's plan for development and implementation of a new 10 CFR Part 50 that is technology-neutral, risk-informed, and performance-based. The plan will include the issuance of an Advanced Notice of Proposed Rulemaking (ANPR) for this new Part 50. It is anticipated that this ANPR will be issued in 2006.

#### Other New Reactor Licensing Information

During the week of October 17, Construction Inspection Program staff traveled to Pori, Finland, and Chalon, France, to observe construction and fabrication activities related to the Olkiluoto 3 (OL3) plant, an EPR 4-loop pressurized water reactor. At the OL3 site, the staff was able to observe work on the containment rebar and the site preparation. At the Chalon fabrication facility, the staff observed work on steam generators, pressurizers, and reactor heads for

delivery to nuclear plants worldwide. Insights gained from these visits will be used to inform the construction inspection program being designed for reactor licensing and construction under 10 CFR Part 52.

The chart on the following page summarizes the new reactor licensing activities as of October 31, 2005:

**New Reactor Licensing Activities**  
As of October 31, 2005

Organization	Designs endorsed or under consideration	Sites under Consideration	Planned Applications	Date	Basis
General Electric	ESBWR		Design Certification	8/25/2005	8/25/05 Application Submitted
Framatome ANP	EPR		Design Certification	Late 2007	Letter 2/8/05
Southern Nuclear Operating Company	AP1000/ESBWR	Vogtle	ESP and COL	8/2006: ESP 3/2008: COL	Letters 7/26 and 8/17/05 Mtg Summary (ML052710018)
Constellation	EPR	Nine Mile Point or Calvert Cliffs	COL	TBD	Press Release
Dominion	ESBWR	North Anna	COL	2007	DOE solicitation award and press release
Duke	AP1000 (2)	TBD	COL	Late 2007 or Early 2008	Letters 3/4/05 and 10/25/05
Progress Energy	AP1000, ESBWR, or EPR	TBD	COL	1 <sup>st</sup> Qtr 2008	Letter 8/24/05
NuStart Energy	AP1000 ESBWR	Bellefonte Grand Gulf	COL COL	Late 2007 and early 2008	Letter 12/7/2004 Press Release
Entergy	ESBWR	River Bend	COL	Late 2008	Press Release
Unannounced Potential Applicant	AP1000, ESBWR, or EPR	TBD	COL	Mid 2007	Prop Letter