

July 20, 2001

The Honorable Joseph I. Lieberman, Chairman  
Subcommittee on Clean Air, Wetlands,  
Private Property and Nuclear Safety  
Committee on Environment and Public Works  
United States Senate  
Washington, D.C. 20510

Dear Mr. Chairman:

The Fiscal Year 2001 Energy and Water Development Appropriations Act, House Report 106-693, directed the Nuclear Regulatory Commission (NRC) to continue to provide a monthly report on the status of its licensing and regulatory duties. The initial reporting requirement arose in the Fiscal Year 1999 Energy and Water Development Appropriations Act, Senate Report 105-206. The FY 2000 Energy and Water Development Appropriations Act, House Report 106-253, expanded the scope of the report requirement to include regulatory reform efforts affecting power reactor operations beyond 10 CFR Part 50, particularly NRC efforts to evaluate NRC security regulations. In FY 2000, we also expanded the monthly report to include the status of all license renewal applications that are under active review and other NRC initiatives in developing implementation guidance for the license renewal rule. In response to increased Congressional interest, beginning this month we are also expanding the report to include the status of activities involving power uprate licensing actions. I am pleased to transmit the thirtieth report, which covers the month of May (Enclosure 1).

The April report provided information on a number of significant NRC activities, including our activities related to through-wall circumferential cracks in control rod drive mechanism (CRDM) penetration nozzles and weldments at Duke Power Company's Oconee Nuclear Station, Unit 3, located in Seneca, South Carolina. On April 12, the NRC staff met with representatives of the Nuclear Energy Institute (NEI) and the Electric Power Research Institute Materials Reliability Program to discuss generic implications of the Oconee cracks. As a result of that meeting, industry representatives developed for NRC staff review and approval a generic safety assessment, recommendations for revisions of near-term inspections, and long-term inspection and flaw evaluation guidelines. The staff also issued an information notice to all pressurized water reactor (PWR) nuclear power plant licensees to alert them to the recent detection of the through-wall circumferential cracks at Oconee.

During this reporting period, the staff reviewed the industry's generic assessment of the significance of cracking in the CRDM nozzles, and met with the industry on June 7, 2001. The purpose of this meeting was to gather additional information to determine the need for the NRC to issue a generic communication to request additional actions from PWR licensees. The staff participated in an industry-sponsored international workshop on this issue in Atlanta, Georgia, on June 13, 2001. Currently, the NRC is continuing its review of the industry's activities and submitted information and determining what regulatory actions, if any, are necessary to address this issue. The staff is working closely with all stakeholders to ensure the continued safe

operation of PWRs and is providing frequent updates on its dedicated website "Generic Activities on PWR Alloy-600 Weld Cracking" (<http://www.nrc.gov/NRC/REACTOR/ALLOY-600/index.html>) in order to keep stakeholders informed of NRC actions.

Since our last report, we have seen an marked increase in our reactor license renewal activities and workload. On June 12, the Commission approved issuance of the renewed license for Arkansas Nuclear One, Unit 1 (ANO-1). ANO-1 is the third license renewal applicant to successfully complete the license renewal process -- the first two were Constellation Energy's Calvert Cliff's Unit 1 and 2, and Duke Energy's Oconee Units 1, 2, and 3. The ANO-1 license renewal review period took just 15 months, primarily because of ANO-1's similarities to Oconee helped to accelerate the process. Nonetheless, NRC planning assumption still anticipates reviews taking between 18-24 months without a hearing, and about 30 months with a hearing.

Since our last report, we also received license renewal applications from three licensees involving a total of 10 units, which are: a joint application on May 29<sup>th</sup> by Virginia Power for its two reactor North Anna site and two reactor Surry site; a joint application on June 14<sup>th</sup> by Duke Energy for its two reactor Catawba site and two reactor McGuire site; and a July 2<sup>nd</sup> application by Exelon Nuclear for its two reactor Peach Bottom site. The addition of these three applications raises the total number of reactor units under review for license renewal to 14. Based on information provided to NRC by our licensees, an additional 24 reactor units are expected to apply for license renewal over the next three years. If so, by the end of 2003, 44 of the 103 operating will have applied for license renewal.

Since our last report, the Commission and the NRC staff also:

- ! issued annual assessment letters for all operating nuclear power plants and posted them on the NRC website <http://www.nrc.gov/OPA/ppr>. All commercial nuclear power plants are now being evaluated under the revised reactor oversight process (ROP) initiated on April 2, 2000. The NRC expects to make additional refinements to the program based on lessons learned from the first year of initial implementation. The ROP reflects several important themes for all of NRC's activities -- a greater focus on safety, an effort to improve objectivity and timeliness, a commitment to stakeholder involvement, and improved transparency of agency activities for both licensees and the general public.
- ! concluded its special panel overseeing the restart and performance improvement activities for the D. C. Cook Nuclear Power Station. The two-unit plant is located at Bridgman, Michigan. Throughout the special oversight, the panel held frequent meetings with the licensee which were open to public observation.
- ! issued the draft supplemental environmental impact statement (DEIS) relating to the license renewal of the Turkey Point nuclear plant, which is located in southern Florida. The DEIS includes the staff's preliminary analysis that considers and weighs the environmental effects of the proposed action, the environmental impacts of alternatives to the proposed action, and the mitigative measures available for reducing or avoiding adverse impacts. The staff has scheduled public meetings, in Homestead, Florida, to present an overview and to accept public comments on the document.

- ! completed a special inspection at the Westinghouse Fuel Fabrication Facility near Columbia, South Carolina. NRC conducted the special inspection after a May 21, 2001, event at the facility involving the failure of two valves on a production line to close to a fail-safe position due to a malfunction of a programmable logic controller that controlled the valves. The special inspection team was chartered to evaluate the efforts of the licensee to determine the cause of the malfunction and assess the actions to correct the problem. The team is now considering whether any of the findings warrant potential enforcement action. In addition, the staff will also consider whether any of the deficiencies represent a generic issue.
- ! issued a draft of the Discrimination Task Group Report for public comment. The report contains some 40 recommendations to improve the agency's handling of complaints by nuclear industry workers who allege they have been discriminated against by their employer after raising safety concerns. The NRC formed the Task Group last April to review the way the agency handles discrimination complaints filed by nuclear industry workers and to recommend possible changes to the agency's regulations, enforcement policy or other agency guidelines. The group held a series of public workshops nationwide to solicit stakeholder input for the draft report.
- ! approved a power uprate request by Southern California Edison Company and San Diego & Electric Company to increase the generating capacity of the two San Onofre nuclear power plants by 1.4 percent, or about 16 megawatts of electricity per unit. The three-month review period by the agency reflects efforts to improve the timeliness of the review process for these types of power uprate license amendment requests (i.e., based on improved feedwater flow measurement systems).
- ! approved a power uprate request by PPL Susquehanna, LLC, to increase the generating capacity of the two Susquehanna Nuclear Power Station units by 1.4 percent, or about 14 megawatts of electricity per unit. This represents the first U.S. boiling water reactor to take advantage of improved feedwater flowmeter technology under 10 CFR Part 50, Appendix K.
- ! approved the conduct of a one-year pilot of the Safeguards Performance Assessment (SPA) Program. At the same time, the Commission also approved maintaining the Operational Safeguards Response Evaluation (OSRE) program at a reduced frequency of six OSREs during FY02. The OSRE is the current NRC program to assess security and physical protection at nuclear power plants. The SPA pilot program will allow NRC to evaluate concepts being considered for proposed revisions to NRC security requirements for physical protection of commercial nuclear power plants. It will also be used to determine if the SPA has merit as a possible replacement for the OSRE.
- ! participated in a major counter-terrorism exercise at the Palo Verde Nuclear Generating Station with the Arizona Public Service Company, the Federal Bureau of Investigations (FBI), and other Federal, State and local agencies. The exercise allowed the NRC to interact with the FBI (several hundred agents) as well as other agencies and further develop protocols for interagency coordination for responding to terrorism. The exercise was an ungraded training exercise initiated by the FBI.

- ! dispatched a special inspection to the Indian Point 3 nuclear power plant, located in Buchanan, NY, to determine the details concerning the loss of spent fuel pool cooling on May 8, 2001. The purpose of the special inspection is to assess the licensee's root cause evaluation and corrective actions, independently evaluate the risk significance of the event, and determine whether there are generic implications.
- ! published in the Federal Register (66 FR 29244) for public comment a proposed rule on decommissioning trust provisions. The proposed rule change would (1) help safeguard decommissioning trust funds from investment risks; (2) ensure licensees provide adequate information to NRC about their trusts; and (3) provide safeguards against improper payments from such trusts. Along with the proposed rule, the notice announced the availability for public comment of Draft Regulatory Guide, DG-1106, a proposed revision of Regulatory Guide 1.159, "Assuring the Availability of Funds for Decommissioning Nuclear Reactors." The draft guide has been expanded and updated to include sample language for trust agreements consistent with the terms and conditions of the proposed rule.
- ! published a proposed rule in the Federal Register (66 FR 29251) to amend Material Control and Accounting (MC&A) regulations. The proposed rule would revise the frequency and timing for submitting Material Balance Reports and Inventory Composition Reports. In addition, the MC&A requirements are being revised to be more risk-informed for facilities licensed to possess and use greater than one effective kilogram of special nuclear material of moderate strategic significance. The proposed changes are intended to reduce unnecessary regulatory burden on licensees and NRC without adversely affecting public health and safety.
- ! conducted a workshop on the regulatory challenges for advanced nuclear power plants. The workshop, conducted by the NRC's Advisory Committee on Reactor Safeguards (ACRS), included presentations and panel discussions by NRC staff members, Department of Energy officials, industry officials, renowned university professors, and public interest group representatives, and included discussion on generation III+/IV reactors.

I have enclosed (Enclosure 2) the update to the Tasking Memorandum which delineates the specific initiatives completed by the agency since August 1998 and future milestones.

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

Sincerely,

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Richard A. Meserve

Enclosures:

1. Monthly Report
2. Tasking Memorandum

cc: Senator George V. Voinovich

LIST OF ADDRESSEES

The Honorable Joseph I. Lieberman, Chairman  
Subcommittee on Clean Air, Wetlands,  
Private Property and Nuclear Safety  
Committee on Environment and Public Works  
United States Senate  
Washington, D.C. 20510

cc: Senator George V. Voinovich

The Honorable Joe Barton, 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 Sonny Callahan, Chairman  
Subcommittee on Energy and Water Development  
Committee on Appropriations  
United States House of Representatives  
Washington, D.C. 20515

cc: Representative Peter J. Visclosky

The Honorable Harry Reid, Chairman  
Subcommittee on Energy and Water Development  
Committee on Appropriations  
United States Senate  
Washington, D.C. 20510

cc: Senator Pete V. Domenici

The Honorable W.J. "Billy" Tauzin, Chairman  
Committee on Energy and Commerce  
United States House of Representatives  
Washington, D.C. 20515

cc: Representative John D. Dingell

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

cc: Senator Bob Smith

The Honorable Pete V. Domenici  
United States Senate  
Washington, D.C. 20510

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

**May 2001**

Enclosure 1

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<sup>1</sup>Note: The period of performance covered by the report includes activities occurring between the first and last day of the month (e.g., May 31, 2001). 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.

## **XIV. Implementing Risk-Informed Regulations**

The staff continues to make progress on tasks involving use of probabilistic risk information in many areas. The milestone schedule for the significant risk-informed activities are included in the Chairman's Tasking Memorandum (Enclosure 2 to the letter from Richard A. Meserve, NRC Chairman, forwarding the May 2001 monthly report to Congress on the status of NRC licensing and regulatory duties).

### **II. Reactor Oversight Process**

NRC commenced initial implementation of its Reactor Oversight Process (ROP) at all nuclear plants in April 2000. It has continued meeting with interested stakeholders on a periodic basis to collect feedback on the efficacy of the process and consider this feedback in making refinements to the ROP. Recent activities include:

- a. The Office of Nuclear Reactor Regulation (NRR) staff conducted a public meeting with industry's ROP working group on May 16, 2001, to discuss issues associated with Safety System Unavailability (SSU) performance indicators. Specifically, it was identified that there needed to be a common set of definitions for SSU performance indicators used in various programs that monitor unavailability of safety systems (e.g., Maintenance Rule, PRA, INPO/WANO indicators, and ROP indicators). NRR also conducted its continuing series of public meetings on May 2 and 31, 2001, with industry's working group on ROP. The key issues discussed included: pilot test results of proposed changes to the Unplanned Power Changes performance indicator, electronic submittal of plant operating data, update on industry trends, summary of the SSU performance indicator focus group meeting, changes to the NRC ROP Web page, and reviews of frequently asked questions (FAQs). The next meeting is scheduled for July 12, 2001.
- b. On May 10, 2001, the NRC staff completed its end-of cycle (EOC) plant performance assessments for all power plants. The EOC reviews for plants involved the participation of all technical divisions in evaluating performance indicators for the most recent quarter and inspection results for the period April 2, 2000, to March 31, 2001. The results of the EOC reviews were issued via annual assessment letters for all power plants by June 1, 2001. The purpose of these letters is to inform licensees of NRC's assessments of licensees' safety performance and also NRC's plans for future inspections to minimize the resource impact on the licensee's staff and to allow for scheduling conflicts and personnel availability to be resolved in advance of inspector arrival onsite.
- c. On May 10, 2001, the NRC's ROP Initial Implementation Evaluation Panel (IIEP) issued its final report on the assessment of the first year's implementation of the ROP. The NRC established the panel to obtain advice and recommendations on the first year's implementation of the ROP in accordance with the Federal Advisory Committee Act. The IIEP concluded that the ROP is a notable improvement over the previous licensee performance assessment program and recommended that it be continued. The IIEP also noted that the ROP has made progress toward achieving the Agency's four performance goals. In addition, the process provides a more objective, risk-informed, predictable, and understandable approach to the oversight of commercial nuclear facilities.

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

Changes in the status or resolution dates for Generic Safety Issues (GSI) since the April 2001 report and the reasons for the changes are described below:

GSI Number: 170  
TITLE: Reactivity Transients and Fuel Damage Criteria for High Burnup Fuel  
STATUS: This issue is closed and will no longer be tracked as a generic issue. The staff performed an evaluation of data that have been collected since the identification of the issue and confirmed that the use of fuel up to the existing burnup limits does not pose safety concerns. An ongoing confirmatory research program with industry cooperation will refine the staff's further understanding of the issues arising from additional increase in burnups.

#### **IV. Licensing Actions and Other Licensing Tasks**

Licensing actions are defined as requests for: 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 licensee requests requiring NRC review and approval before it can be implemented by the licensee. The FY 2001 NRC Performance Plan incorporates three output measures related to licensing actions. These are: number of licensing action completions per year, age of the licensing action inventory, and size of the licensing action inventory.

Other licensing tasks are defined as: licensee responses to NRC requests for information through generic letters or bulletins, NRC responses to 2.206 petitions, NRC review of licensee topical reports, NRR responses to regional requests for assistance, NRC review of licensee 10 CFR 50.59 analyses and FSAR updates, or other licensee requests not requiring NRC review and approval before it can be implemented by the licensee. The FY 2001 NRC Performance Plan incorporates one output measure related to other licensing tasks: number of other licensing tasks completed.

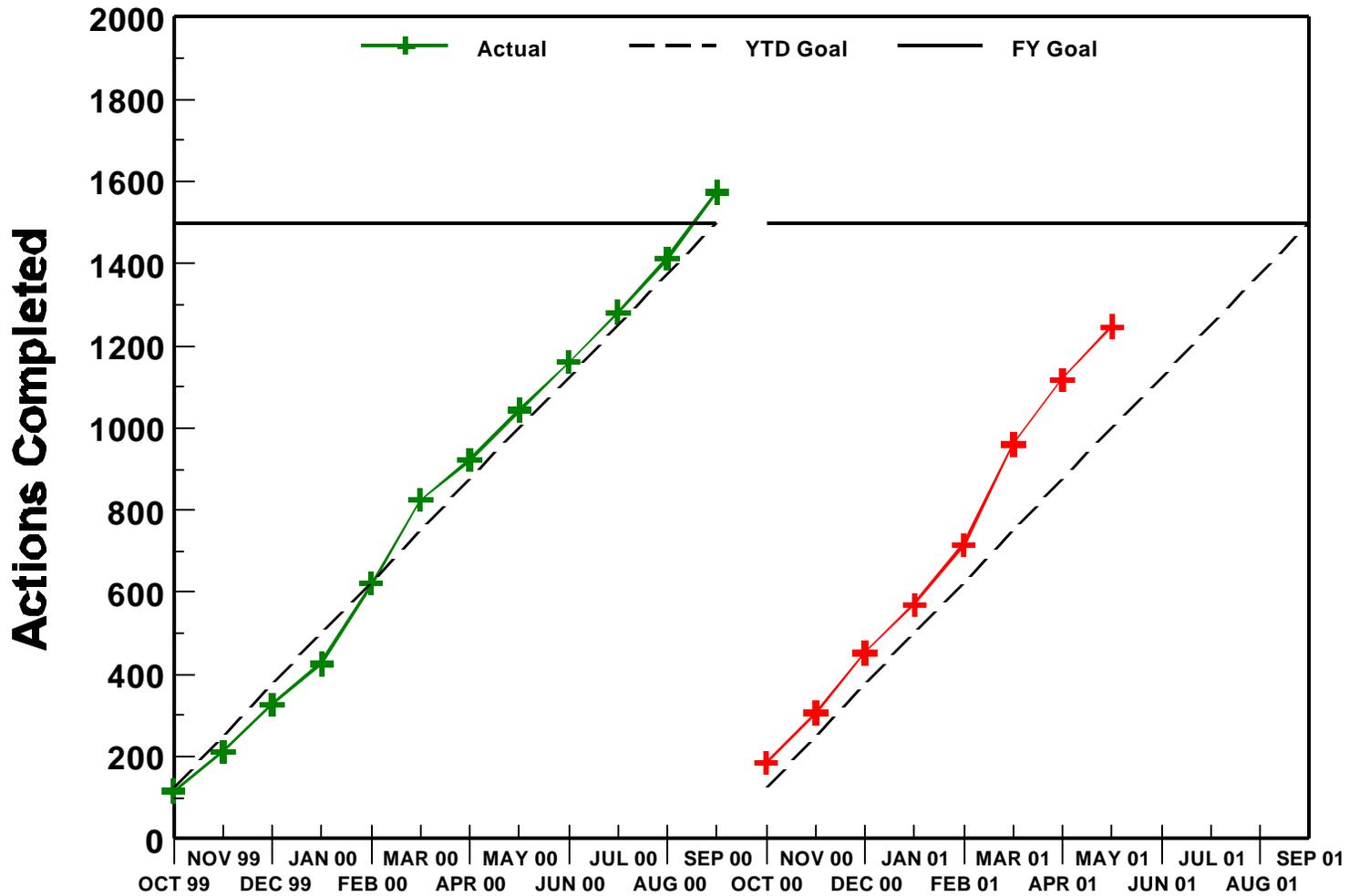
The actual FY 1999 and FY 2000 results, and the FY 2001 goals and results, as of May 31, 2001, for the four NRC Performance Plan output measures for licensing actions and other licensing tasks are shown in the table below.

PERFORMANCE PLAN				
Output Measure	FY 1999 Actual	FY 2000 Actual	FY 2001 Goals	FY 2001 Actual (thru 05/31/2001)
Licensing actions completed	1727	1574	≥ 1500	1246
Age of licensing action inventory	86.2% ≤ 1 year; and 100% ≤ 2 years	98.3% ≤ 1 year; and 100% ≤ 2 years	95% ≤ 1 year and 100% ≤ 2 years old	96.3% ≤ 1 year; 99.9% ≤ 2 years
Size of licensing action inventory	857	962	≤ 650	750
Other licensing tasks completed	939	1100	≥ 675	400

The following charts demonstrate NRC's FY 2001 trends for the four licensing action and other licensing task output measure goals.

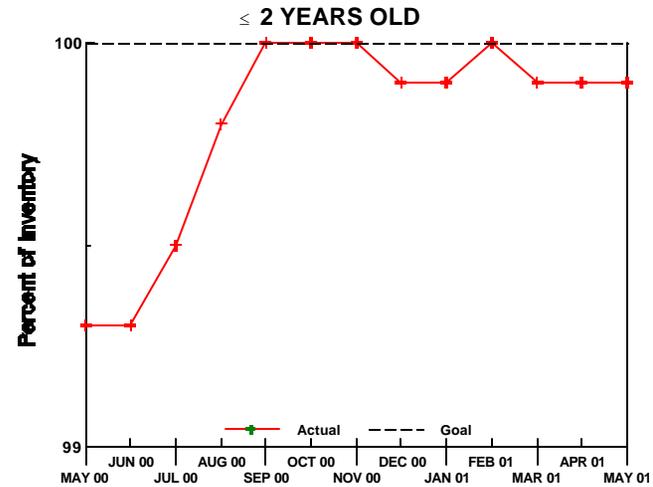
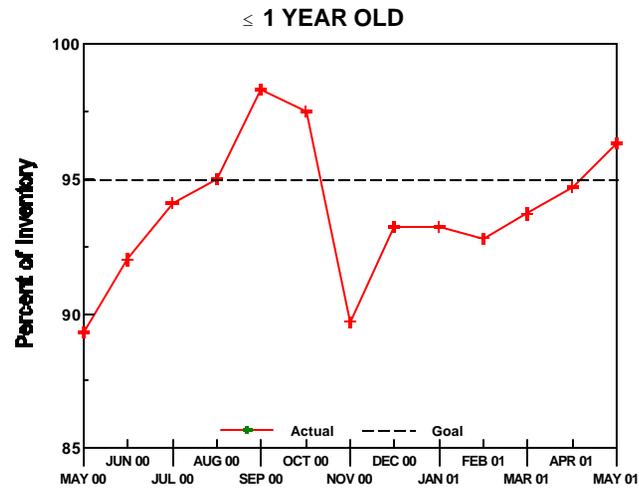
# Nuclear Reactor Safety - Reactor Licensing

## Performance Plan Target: Completed Licensing Actions



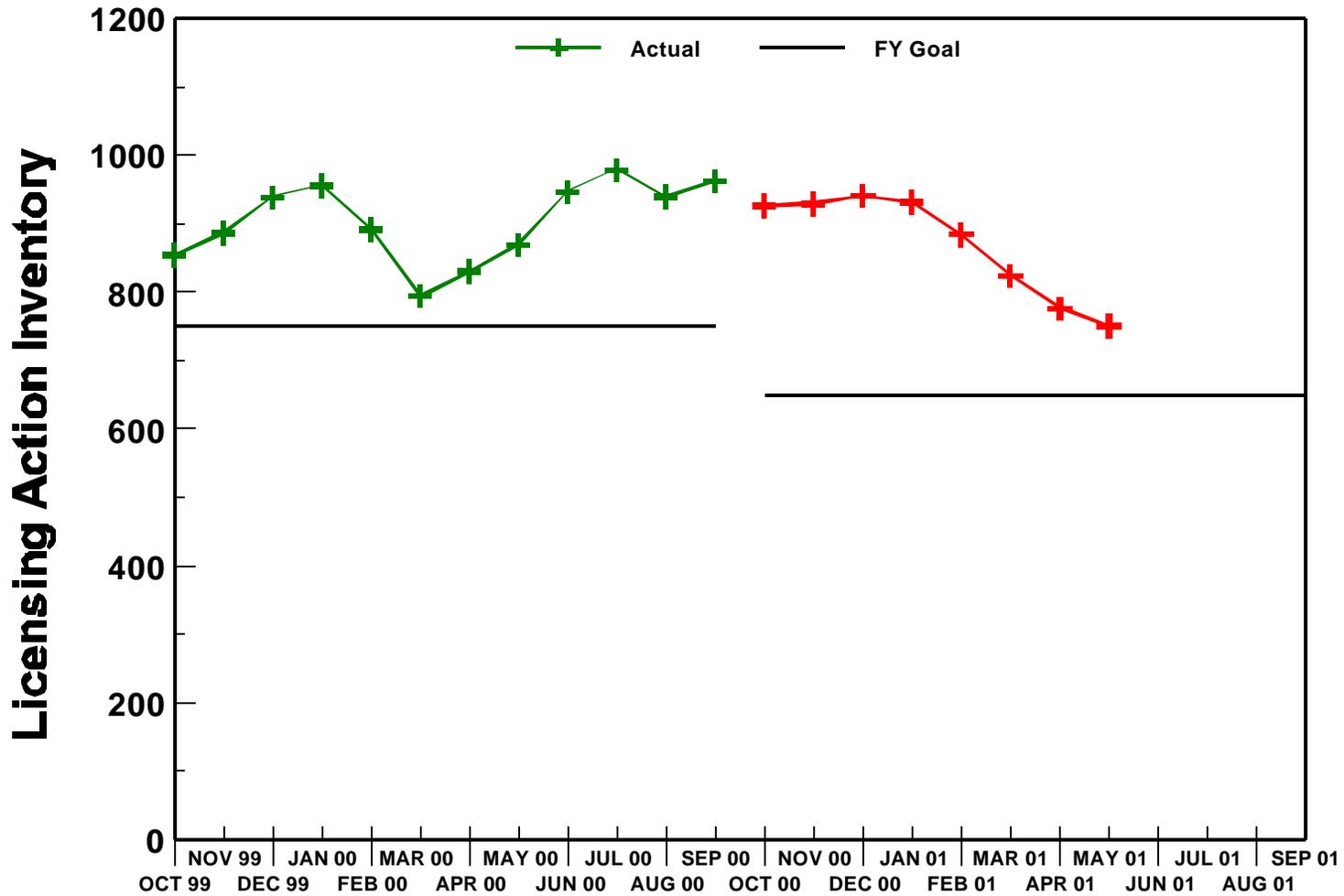
# Nuclear Reactor Safety - Reactor Licensing

## Performance Plan Target: Age of Licensing Action Inventory



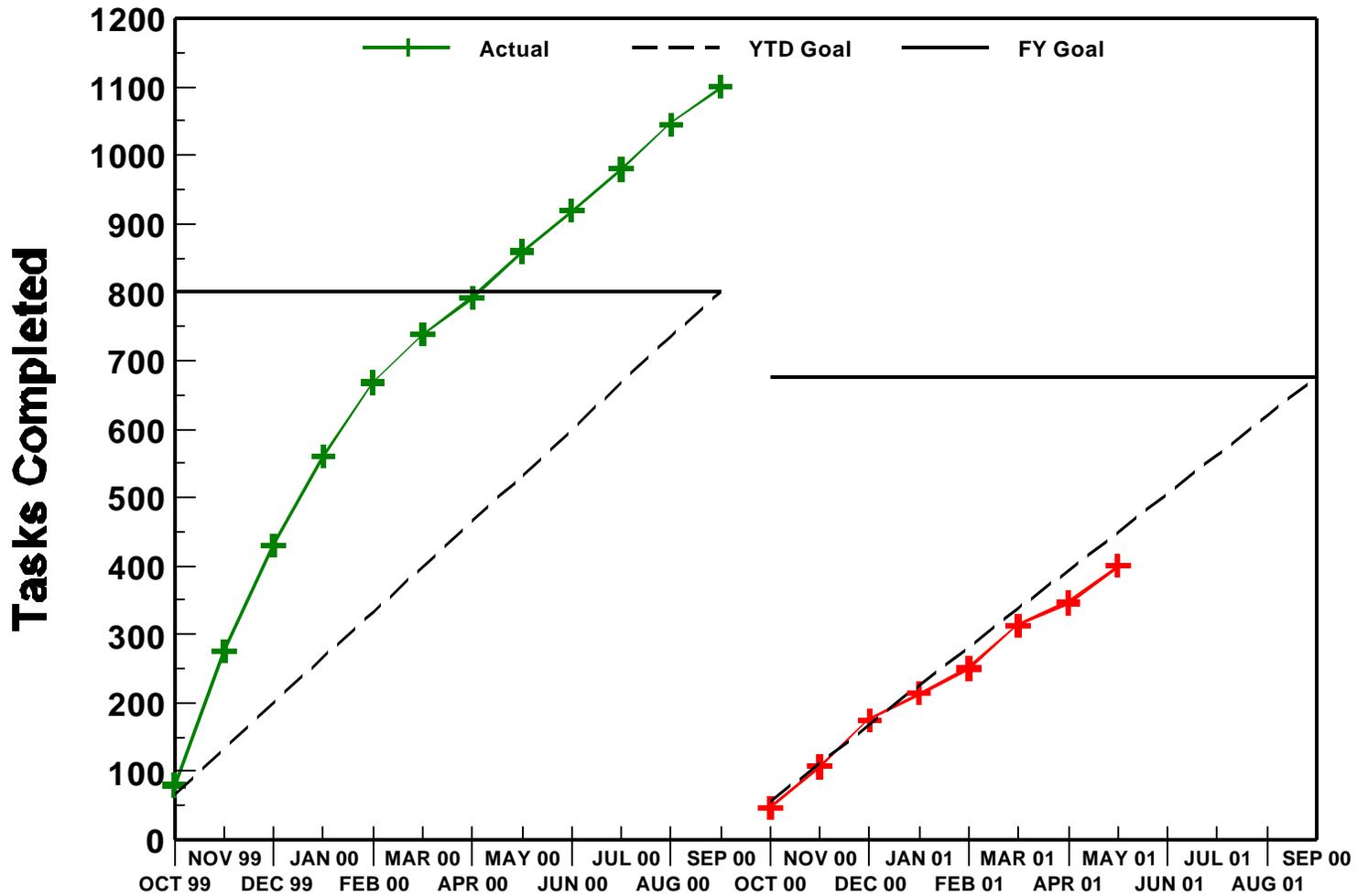
# Nuclear Reactor Safety - Reactor Licensing

Performance Plan Target: Licensing Action Inventory



# Nuclear Reactor Safety - Reactor Licensing

**Performance Plan Target: Completed Other Licensing Tasks**



## **V. Status of License Renewal Activities**

### Calvert Cliffs Renewal Application

The renewed licenses for Calvert Cliffs were issued on March 23, 2000, completing NRC's review of the license renewal application.

### Oconee License Renewal Application

The renewed licenses for Oconee Units 1, 2, and 3 were issued on May 23, 2000, completing the NRC's review of the license renewal application.

### Arkansas Nuclear One, Unit 1, Renewal Application

The review of the Arkansas Nuclear One, Unit 1 (ANO-1), renewal application is proceeding ahead of schedule. Based on the lessons learned from the Oconee Nuclear Station license renewal (a similar plant to ANO-1) implemented by the applicant and NRC staff, the safety evaluation report was issued with only six non-safety-significant open items on January 10, 2001. The open items have been resolved and the final safety evaluation report was issued April 12, 2001, five months ahead of schedule. The final supplemental environmental impact statement has been issued.

### Hatch, Units 1 and 2, Renewal Application

The review of the Hatch renewal application is on schedule. The staff issued the safety evaluation report identifying open items in February 2001. The NRC staff and the applicant are working to resolve the open items and issue the completed report by October 2001.

The draft supplemental environmental impact statement was published for public comment in November 2000 and the public comment period ended in January 2001. The staff is currently addressing the comments received and preparing to issue the final supplemental environmental impact statement by July 2001.

### Turkey Point, Units 3 and 4, Renewal Application

The review of the Turkey Point renewal application is on schedule. All safety and environmental requests for additional information (RAIs) were issued. The applicant completed its responses to the environmental RAIs on March 30, 2001 and to the safety RAIs on April 19, 2001. The staff intends to issue the safety evaluation report, identifying any open, items by August 17, 2001.

Two requests for hearing were received in response to the public notice of an opportunity for hearing and an Atomic Safety and Licensing Board Panel (ASLB) was convened to consider the requests. The ASLB held a prehearing conference with the petitioners, applicant, and staff in Homestead, Florida, on January 18, 2001. In an order dated February 26, 2001, the Board ruled that both parties have standing to intervene, however, neither petitioner identified admissible contentions. Therefore, the Board denied the intervention petitions and terminated the hearing proceedings. By letter dated March 19, 2001, one petitioner has filed an appeal of the ASLB's decision. The appeal is pending before the Commission.

## North Anna, Units 1 and 2, and Surry, Units 1 and 2, Renewal Applications

On May 29, 2001, the NRC received the license renewal applications for the North Anna Units 1 and 2, and Surry Units 1 and 2, stations which are located in Virginia. The applicant is requesting renewal of the operating licenses for a period of 20 years beyond the expiration date of the current licenses. The current expiration date for North Anna Units 1 and 2, are April 2018, and August 2020, respectively. The current expiration date for Surry Units 1 and 2, are May 2012, and January 2013, respectively.

## License Renewal Implementation Guidance Development

The NRC staff issued the revised standard review plan, generic aging lessons learned report, and regulatory guide for public comment. Public comments were received and the staff has met with stakeholders to address the comments and revise the documents. The staff submitted the revised documents to the Commission for approval and expects to issue them by the summer of 2001.

The NRC staff is also participating in a demonstration project involving industry preparation of sample license renewal application sections for the staff's review using the revised license renewal guidance documents. The goal is to identify ways in which the generic aging lessons learned report can be referenced in renewal applications to achieve the desired effectiveness and efficiency in the review process, and to enhance the review guidance.

## **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**

On May 30, 2001, NRC staff held a management meeting with Private Fuel Storage, Limited Liability Company (PFS) to discuss the license application amendment on geotechnical and related information, submitted on March 30, 2001. The NRC staff had determined that this amendment did not contain sufficient information for the staff to perform its review. Additionally, completion of the staff's review of other outstanding PFS license application amendment issues regarding probability of aircraft crashes in the vicinity of the proposed Private Fuel Storage facility, remained dependent on information that PFS requested from the U.S. Air Force through the Freedom of Information Act (FOIA) process. Prior to the management meeting, the staff had provided PFS with a list of the information that staff believed was missing from the amendment. At the meeting, PFS stated that it intended to deliver all outstanding information to the staff on June 1, 2001. This information was received on June 1, 2001, and is currently under review by the NRC staff.

As noted in previous reports, the Final Environmental Impact Statement will not be released until the four cooperating Federal agencies have determined whether the new geotechnical and military aircraft information changes any conclusions reached in the document.

Litigation in the adjudicatory proceeding on the PFS application continued during this reporting period as follows: (1) the NRC Staff and Applicant responded to the State of Utah's contention challenging the applicant's physical security plan, based on the recent enactment of Utah state laws prohibiting counties and local governments from providing law enforcement services to a

spent fuel storage facility within the State's boundaries, (2) the NRC Staff and State of Utah responded to the Applicant's motions for summary disposition of two environmental contentions, (3) depositions and other discovery proceeded on environmental contentions, (4) the Atomic Safety and Licensing Board has under consideration the State's motion to admit a new contention concerning the Hill Air Force Base, and (5) the State of Utah filed a new contention raising geotechnical issues, based on the Applicant's revision of its design basis ground motion and seismic design.

**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	April 2001	0	0	0	0	0
	FY 2001 YTD	0	0	0	0	0
	FY 00 Total	0	0	0	0	0
	FY 99 Total	0	0	0	0	0
Severity Level II	April 2001	0	0	0	0	0
	FY 2001 YTD	0	0	0	0	0
	FY 00 Total	1	2	0	0	3
	FY 99 Total	5	0	2	0	7
Severity Level III	April 2001	0	0	0	0	0
	FY 2001 YTD	0	1	0	0	1
	FY 00 Total	5	0	4	4	13
	FY 99 Total	9	2	7	8	26
Severity Level IV	April 2001	0	0	1	0	1
	FY 2001 YTD	0	0	1	1	2
	FY 00 Total	4	1	3	5	13
	FY 99 Total	52	42	57	60	211

Reactor Enforcement Actions*						
Non-Cited Severity Level IV & Green	April 2001	18	31	18	27	94
	FY 2001 YTD	174	79	127	87	467
	FY 00 Total	313	190	289	258	1050
	FY 99 Total	343	267	334	305	1249

Escalated Reactor Enforcement Actions Associated with the Revised Reactor Oversight Process*						
		Region I	Region II**	Region III	Region IV**	Total
NOVs related to white, yellow or red findings	April 2001 -Red	0	0	0	0	0
	-Yellow	0	0	0	0	0
	-White	0	0	0	0	0
	FY 2001 YTD	3	3	2	1	9
	FY 00 Total	6	1	0	0	7

\*Numbers of violations are based on enforcement action tracking system (EATS) data that may be subject to minor changes following verification. The number of Severity Level I, II, III listed refers to the number of Severity Level I, II, III violations or problems. The monthly totals generally lag by 30 days due to inspection report and enforcement development.

\*\* Violation totals for Regions II & IV reflect a shift from a 6 week inspection period to a quarterly inspection period.

### VIII. Power Reactor Security Regulations

The staff has been involved in a significant effort to re-evaluate and revise its regulations pertaining to security at power reactor facilities. A comprehensive review has been performed of the power reactor security regulations (10 CFR 73.55), including a new requirement for exercising the capability of security organizations to protect against the design basis threat. A series of public meetings have been conducted to ensure that external stakeholders had an opportunity to provide input to the process. The staff developed several position papers related to the major issues within the rulemaking effort and completed its evaluation of public comments and incorporated issues raised in these comments into the proposed performance objectives for the revised rule. The proposed rule was submitted to the Commission for approval on June 4, 2001.

In addition to the above effort, considerable attention has been paid to related issues surrounding the conduct of the Operational Safeguards Response Evaluation (OSRE) program. The industry has developed a Safeguards Performance Assessment (SPA) program, and the staff has proposed a pilot to test the SPA concepts. The staff has interacted extensively with stakeholders on this program and expects to pilot the SPA program while the rulemaking, including the exercise requirement, is being processed. Lessons learned from the SPA will be incorporated into the final rulemaking. Several public meetings have been held to discuss the SPA program. The most recent of these meetings, held May 18, 2001, discussed further development of the industry's SPA guidance document and additional details regarding the proposed pilot program. The staff continues to conduct scheduled OSREs.

## **IX. Power Uprates**

The staff has assigned power uprate license amendment reviews a high priority. The staff considers power uprate applications among the most significant licensing actions and is, therefore, conducting power uprate reviews on accelerated schedules.

Power uprates can be classified in three categories: (1) measurement uncertainty recapture power uprates, (2) stretch power uprates, and (3) extended power uprates. Measurement uncertainty recapture power uprates are on the order of 1.5 percent and are achieved by implementing enhanced techniques for calculating reactor power. This involves the use of state-of-the-art feedwater flow measurement devices that reduce the degree of uncertainty associated with feedwater flow measurement and in turn provide for a more accurate calculation of power. The recent rulemaking to 10 CFR Part 50, Appendix K, which allowed licensees to use a power uncertainty less than 2 percent in loss-of-coolant accident analyses, facilitated these reviews. Stretch power uprates are typically on the order of 7 percent and usually involve changes to instrumentation setpoints. Stretch power uprates do not generally involve major plant modifications. This is especially true for boiling-water reactor (BWR) plants. In some limited cases where plant equipment was operated near capacity prior to the power uprate, more substantial changes may be required. Extended power uprates are usually greater than stretch power uprates and are expected to be submitted for increases as high as 20 percent. Extended power uprates usually require significant modifications to major balance-of-plant equipment such as the high pressure turbines, condensate pumps and motors, main generators, and/or transformers.

Licensees have been applying for and implementing power uprates since the 1970s as a way to increase the power output of their plants. The staff has been conducting power uprate reviews since then and has completed 57 such reviews. To date, the staff has approved measurement uncertainty recapture power uprates for 4 units, stretch power uprates for 50 units, and extended power uprates for 3 units. Figure 1, "Power Capacity Increase," shows the cumulative increase in power that resulted from the power uprates through June 2001. To date, an equivalent of approximately two nuclear power plant units (approximately 1000 MWe each) has been gained through implementation of power uprates at existing plants.

The staff currently has 17 applications for power uprates under review. Of these, nine are for measurement uncertainty recapture power uprates, while six are for extended power uprates greater than or equal to 15 percent. The remaining two include one for 4.5 percent and one for 7.5 percent. The staff has assigned these reviews a high priority.

The staff has ensured that key stakeholders are kept informed of the staff's efforts related to these reviews. The staff will continue to keep stakeholders informed of new power uprate applications by following established agency policies and guidance consistent with the requirements of 10 CFR 50.91 and 50.92 for notifying stakeholders of power uprate amendment applications.

On April 2, 2001, the staff issued Nuclear Regulatory Commission Regulatory Issue Summary (RIS) 2001-08, "OPERATING REACTOR LICENSING ACTION ESTIMATES." In this RIS, the staff requested, on a voluntary basis, information related to future submittals of licensing actions for fiscal years 2001 and 2002. In addition, the staff conducted a survey of all licensees in June 2001 to obtain information regarding the industry's future plans related to power uprate applications. This survey targeted projections for the size and schedule of power uprate submittals over the next 5 years. The results of this survey indicate that licensees plan to submit 46 power uprate applications in the next 5 years. Of these, 15 are expected to be of the extended power uprate type, 3 are expected to be of the stretch power uprate type, and 27 are expected to be of the measurement uncertainty recapture power uprate type. One licensee did not report a size for the expected uprate. The sizes reported for the stretch and extended power uprates may also include measurement uncertainty recapture. Based on the information provided, planned power uprates are expected to result in an increase of about 4870 MWt or approximately 1600 MWe. The staff will utilize the information provided in response to the RIS and survey for planning and allotting resources for power uprate reviews and to assure the staff's readiness and availability to perform the technical reviews for these applications when they arrive.

# Figure 1: Power Capacity Increase

