



CHAPTER 2:

PROGRAM PERFORMANCE

INTRODUCTION

Measuring and Reporting Our Performance

This chapter presents information on NRC program performance during FY 2002. The presentation begins with a discussion of an agencywide evaluation of the NRC's security and safeguards programs to address homeland security during FY 2002 in response to the terrorist attacks on September 11, 2001. The discussion of program performance centers on each of NRC's four operating arenas: Nuclear Reactor Safety, Nuclear Materials Safety, Nuclear Waste Safety, and International Nuclear Safety Support. The discussion of program performance in each arena presents a brief overview of the key programs and some of their major accomplishments. The discussion also includes program performance results for NRC goals and measures, along with relevant budget information and the results of program evaluations or studies completed during FY 2002.

Our Performance Measurement System

The NRC has adopted a performance measurement system which has both strategic goals and strategic goal measures as well as performance goals and performance goal measures. The strategic goals represent the mission of the agency and reflect the overall outcomes to be achieved.

Our performance goals are the key contributors to achieving the strategic goals and focus on outcomes. The performance measures associated with each goal indicate how effectively the NRC is achieving its performance goals and establish the basis for performance management. The measures also establish how far and how fast the agency will move in the direction established by the performance goals. The NRC is currently reviewing performance measures as part of the triennial update of the Strategic Plan to determine if the NRC can find more effective ways to measure and report its performance to the American public.

Performance Data Completeness and Reliability

Assessing the reliability and completeness of performance data is critical to managing for results. Comparisons of actual performance with the projected levels of performance are possible only if the data used to measure performance are complete and reliable. The Reports Consolidation Act of 2000 requires that the Chairman of the NRC assess the completeness and reliability of the performance data used in this report. The Office of Management and Budget (OMB) Circular No. A-11 describes specifically how an agency should assess the completeness and reliability of the performance data.

Data Completeness

Data are considered complete by the Office of Management and Budget if actual performance data are reported for every performance goal and indicator in the annual plan. Actual performance data may include preliminary data if those are the only data available when the report is sent to the President and Congress. The data in this report meets OMB's requirements for data completeness. Actual or preliminary data have been reported for every strategic and performance goal measure.

Data Reliability

Data are considered reliable by the Office of Management and Budget when there is neither a refusal nor a marked reluctance by agency managers or decision makers to use the data in carrying out their responsibilities. Agency managers and decision makers at the NRC use the data contained in this report on an ongoing basis in the normal course of their duties. There is neither a refusal nor a marked reluctance by managers or decision makers in this agency to use the data in carrying out their responsibilities. The data in this report meets OMB's requirements for data reliability.



HOMELAND SECURITY

For over 25 years, NRC regulations have required that major NRC licensees maintain rigorous security programs. These facilities are among the best defended and most hardened commercial facilities in the Nation. As a result of the September 11, 2001 terrorist attacks, the Commission launched a comprehensive evaluation of the security and safeguards programs of nuclear power plants and nuclear materials facilities. Although this work is ongoing, a series of significant actions were undertaken during FY 2002 to enhance the security of NRC licensee's facilities.

Security Improvements

Immediately following the attacks, the NRC issued a series of safeguards and threat advisories to the major licensed facilities placing them on the highest security level. Security across the nuclear industry was enhanced as a result of these actions, and many of the strengthened security measures became permanent requirements during FY 2002. The security enhancements include measures to provide additional protection against vehicle bombs, as well as waterborne and land-based assaults. They include requirements for increased security patrols, augmented security forces, additional security posts, increased vehicle standoff distances, tightened facility access controls, and enhanced coordination with the law enforcement and intelligence communities.

The NRC, in coordination with the intelligence and law enforcement community, also placed special emphasis on strengthening access controls at nuclear facilities. During FY 2002, we worked with the FBI and the industry to review access lists of employees

working at nuclear power plants so as to identify any individual whose name matched the FBI Watch List. No positive matches were identified.

NRC regulations require that individuals having unescorted access to nuclear power plants undergo a background investigation that includes credit checks, employment history, reference examination, psychological testing, and a criminal history check conducted by the FBI. Orders issued during FY 2002 to certain licensees require additional measures, including severe limitations on temporary unescorted access to sensitive areas of these facilities.

During FY 2002, the Commission completed an initial assessment of power reactor vulnerabilities to intentional malevolent use of commercial aircraft in suicidal attacks and initiated a broad-ranging research program to understand the vulnerabilities of various classes of facilities to a wide spectrum of attacks. In addition, the Commission began a series of bilateral exchanges with our allies on nuclear security vulnerabilities and potential mitigating measures. Although our work in this area is ongoing, the Commission directed nuclear power plant licensees to develop specific plans and strategies to respond to an event that could result in damage to large areas of their plants from impacts, explosions or fire during FY 2002. In addition, licensees are required to provide assurance that their emergency planning resources are sufficient to respond to such an event.

In cooperation with other Federal agencies, the Commission began development of revisions to the design basis threat that provides the foundation for the security programs of nuclear power plant licensees during FY 2002. The Commission's Orders

CHAPTER 2: PROGRAM PERFORMANCE

to these licensees in February 2002 effectively enhanced security on an interim basis while this work is underway. Full security performance reviews, including force-on-force exercises, will now be carried out at each nuclear power plant on a three-year cycle instead of the eight-year cycle that had been used prior to September 11, 2001. These reviews commenced with tabletop exercises for the first time involved a wide array of Federal, State and local law enforcement and emergency planning officials.

Establishment of the Office of Nuclear Security and Incident Response

In April 2002, the Office of Nuclear Security and Incident Response (NSIR) was established to improve communications and coordination on security and safeguards issues both within and outside the NRC. NSIR is responsible for developing overall safeguards and security policies and is our central point of contact with the Department of Homeland Security. The office also contains an Incident Response Organization, including the NRC Headquarters Operations Center, and coordinates with Federal response and law enforcement agencies. It also directs NRC information security and secure communications activities.

The establishment of NSIR enhanced the NRC's level of interaction with other Federal agencies, State and local governments, as well as the international community. The Commission's ability to communicate critical, time-sensitive information with licensee sites has also been enhanced. Secure telephones have also been placed in all of our resident inspectors' offices at nuclear power plants. We will soon install secure FAX capabilities in these offices as well.

During FY 2002, around-the-clock operations of the NRC Headquarters Operations Center was maintained, ensuring that a cadre of experts were on call to respond to emergencies. The Incident Response Program also augmented its communication capability between and among Incident Response Centers in our regional offices, and enhanced coordination with other Federal agencies.

During FY 2002, the NRC implemented a new Threat Advisory and Protective Measures System in response to Homeland Security Presidential Directive-3. When a new Homeland Security Advisory System threat condition is declared, the NRC will promptly notify affected licensees of the condition and refer them to the predefined protective measures. The new system for NRC licensees has been formally communicated to licensees, Governors, State Homeland Security Advisors, Federal agency administrators and other appropriate officials. The new system replaces the NRC's 1998 threat advisory system and covers additional classes of licensees not included in NRC's 1998 system.

Headquarters Security

The Commission also specified actions for enhancing security at NRC Headquarters. Consistent with the current Yellow (elevated) threat condition, the NRC enhanced its Headquarters physical security by increasing the number of armed guards, installing perimeter security barriers, and strengthening access controls. Additionally, special mail handling equipment was installed. A comprehensive redesign of our Web site was conducted to restrict access to sensitive but unclassified information, while allowing continued communication with the public on a wide variety of our non-sensitive activities.



HOMELAND SECURITY

Defenses Against Terrorist Use of Radiological Dispersal Devices

In FY 2002, the Commission was also actively involved in efforts to defend against possible terrorist use of radiological dispersal devices. Prior to September 11, 2001, the NRC had initiated two programs aimed at reducing the risk of loss of control of radioactive materials. The NRC is helping to fund efforts by the Conference of Radiation Control Program Directors to identify, recover, and manage the proper disposition of unwanted discrete radioactive sources and devices. The NRC also initiated a program to increase the control of, and accountability for, generally licensed devices through a registration program for certain devices.

NRC alerted licensees, suppliers, and shippers of the need to enhance security against the threat of theft of radioactive material during FY 2002. In addition, the NRC began conducting a comprehensive evaluation of controls to protect those radioactive materials that constitute the greatest hazard to public health and safety. The NRC established a joint working group with the Department of Energy to evaluate approaches for “cradle-to-grave” control of radioactive sources that might be used in a radiological dispersal device. As part of the evaluation, the NRC began working with the Agreement States to establish a consolidated listing of higher-risk materials licensees that may be subject to additional requirements for security measures. The NRC also worked with the then Office of Homeland Security and other agencies to ensure that the Federal Government is

prepared to respond to an event involving a radiological dispersal device. The NRC also began reexamining its import and export licensing procedures and is working with the International Atomic Energy Agency to establish a code of conduct for licensing such materials.

Legislative Proposals

NRC provided legislative proposals to Congress detailing specific initiatives that would further enhance security of NRC-licensed facilities and activities during FY 2002. These proposals address a spectrum of activities. One provision would authorize guards at NRC-regulated facilities to use deadly force to protect property significant to the common defense and security. This would give guards protection from State criminal prosecution for actions taken during the performance of their official duties. Another provision would allow the Commission, in consultation with the Attorney General, to confer upon guards at NRC-designated facilities the authority to possess or use weapons that are comparable to those used by the Department of Energy’s guard forces. Some State laws currently preclude private guard forces at NRC-regulated facilities from utilizing a wide range of weapons. Another provision would make it a Federal crime to bring unauthorized weapons and explosives into NRC-licensed facilities and would make Federal prohibitions on sabotage applicable to the operation and construction of certain nuclear facilities.

NUCLEAR REACTOR SAFETY

Strategic Goal: Prevent radiation-related deaths and illnesses, promote the common defense and security, and protect the environment in the use of civilian nuclear reactors.

Overview

The focus of the Nuclear Reactor Safety arena is to ensure that civilian nuclear power reactors, as well as test and research reactors, are operating in a manner that adequately protects public health and safety and the environment and that safeguards special nuclear material used in reactors. The NRC regulates 104 nuclear power reactors and 36 test and research reactors that are licensed to operate. The primary purpose of test and research reactors is to safely conduct research and development. Almost every field of science, including physics, chemistry and biology, uses these reactors.

The Commission's health and safety regulations seek to provide reasonable assurance of adequate protection of the public health and safety. The regulations are based on defense-in-depth principles and conservative practices that provide an adequate margin of safety.

The collective efforts of the NRC and the nuclear industry are needed to maintain safety. The NRC licensees are responsible for designing, constructing, and operating nuclear reactors safely. Regulatory oversight of licensees is the responsibility of the NRC.

Ensuring the Safe Operation of Nuclear Reactors

The NRC seeks to ensure the safety of nuclear reactors by licensing nuclear power plants and their operators, providing oversight of plant operating performance, maintaining a security and emergency response

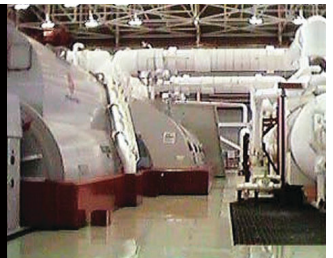
program, establishing clear health and safety regulations, and conducting research to resolve safety issues and provide technical support for developing regulations. The Nuclear Reactor Safety arena consists of programs that work together to achieve the safety goals. Nuclear plant licensees are required to follow regulations specifying how plants are to be designed, constructed and operated. The NRC provides independent oversight of the plants through the reactor oversight process to verify that they are being operated safely in accordance with NRC rules and regulations. If violations are found, the NRC may take enforcement actions. The security and emergency response programs ensure that adequate measures are taken to thwart attacks on reactors and that public safety measures are in place in the event that an incident occurs. The research program analyzes data from operations and independently undertakes studies that provide the basis for maintaining the safety of nuclear power plants. The following sections describe these safety programs in greater detail.

Reactor Licensing

The licensing program seeks to ensure that operating nuclear power plants maintain adequate protection of public health and safety throughout the plant's operating life. This includes assurances that facilities are adequately designed, properly constructed, and correctly maintained and that trained and qualified operating and technical support personnel can prevent or cope with accidents and other threats to public health and safety.

NRC licensing activities include the review of license applications and changes to existing licenses, examining and licensing reactor operators, reviewing reactor events for safety significance, and improving safety regulations and guidance.

► Nuclear power plant steam turbine.



NUCLEAR REACTOR SAFETY

Included in the licensing actions are responses to licensee requests to change or amend their licenses in areas such as license transfers, power uprates, initiatives involving risk-informed regulation, and voluntary conversions of plant technical specifications to an improved standard format.

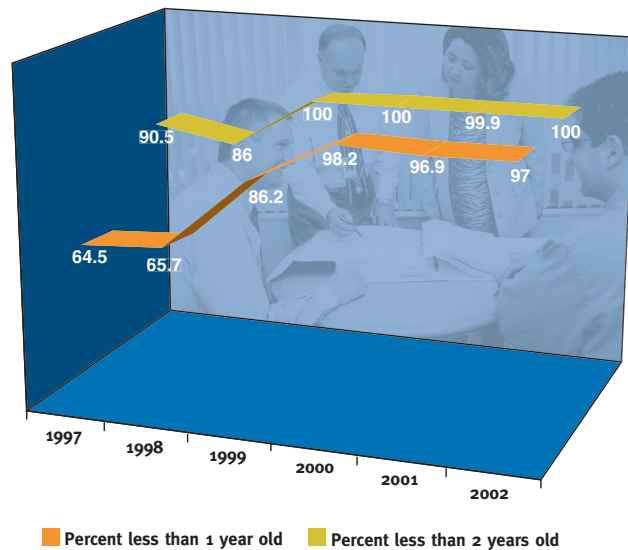
License Transfers

The NRC engaged in significant financial review activities for nuclear power plants because a number of States have taken steps toward deregulation of the power market, the unbundling of services, and general industry consolidation. The cases involved such issues as the sale of a passive owner's minority share and the creation of a separate holding company. In 2001, the NRC completed 15 license transfer applications affecting 41 plants. In 2002, the agency received 11 applications affecting 21 plants. Of the 11 applications, 6 were completed, 3 were withdrawn, and 2 were under review as of December 2002. The NRC has established an ambitious six-month target for completing license transfer/actions and has generally met that goal.

Power Uprates

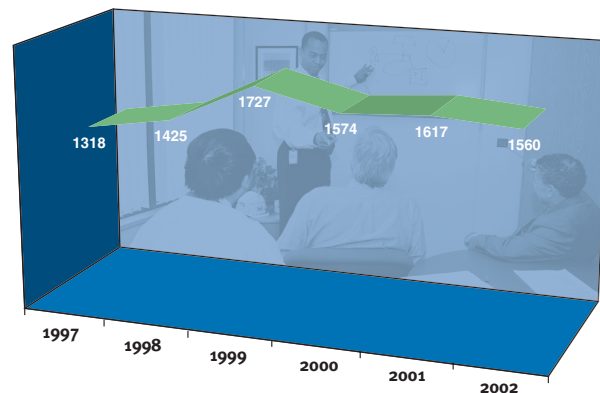
Licensees have been applying for and implementing power uprates since the 1970s as a way to increase the power output of their plants. The staff has been conducting power uprate reviews from the inception of these initiatives and, as of October 1, 2002, had completed 81 such reviews. An equivalent of three large nuclear power plants, or 3,853 Megawatts electric (MWe), has been gained through implementation of power uprates at existing plants. In FY 2002, the staff completed reviews for power uprates at 17 units. These uprates increased electrical generating capacity by about 1,320 MWe.

AGING OF LICENSING ACTIONS



- The licensing program's timeliness in responding to license requests has improved since 1997. In 1997, 65 percent of licensee actions were handled within one year or less. At the end of FY 2002, 97 percent of licensing actions in the working inventory were less than one year old.

LICENSING ACTIONS COMPLETED



- The NRC met or exceeded all established measures for completing nuclear power plant licensing-related actions during FY 2002. NRC staff completed 1,560 licensing actions in FY 2002.

CHAPTER 2: PROGRAM PERFORMANCE

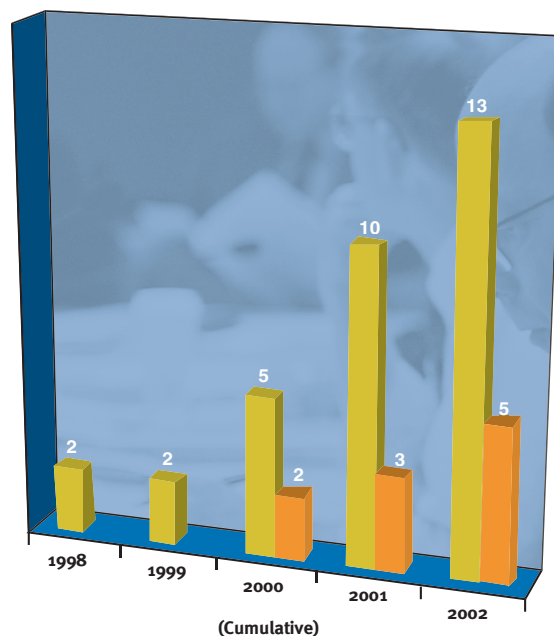
New Reactor Licensing

With increasing interest on the part of the nuclear industry in possibly constructing new reactors, the NRC has assigned staff to work on new reactor licensing activities. In FY 2002, the staff completed an assessment of its readiness to license and inspect new reactors. A proposed update to regulations governing early reactor site permits, standard reactor design certifications, and combined licenses was developed. Early site permit reviews consider site safety and environmental issues, and plans for coping with emergencies, independent of the review of a

specific reactor design. Design certification reviews consider the safety of a reactor design, independent of a specific site. A combined license authorizes construction and conditional operation of a nuclear power plant, and may reference a certified design and/or early site permit.

A preapplication review of the Westinghouse AP 1000 reactor design was completed, with Westinghouse applying for certification of this design on March 28, 2002. This application is currently under review. Meanwhile, three companies have stated they intend to submit early reactor site permit applications. The NRC has begun preapplication reviews of three reactor designs; the Simplified Boiling Water Reactor (General Electric's ESBWR design), Siedewasserreaktor (Framatome ANP's SWR-1000), and Advanced CANDU Reactor (Atomic Energy of Canada, Limited's ACR-700), were initiated during FY 2002 while preapplication review of the General Atomics GT-MHR gas-cooled reactor design continued.

LICENSE RENEWAL APPLICATIONS



■ License Renewals Received ■ License Renewals Completed

- ▶ The NRC met or exceeded all established schedules for completing license renewal reviews in FY 2002. The agency issued renewed licenses for Hatch Units 1 and 2, and Turkey Point Units 3 and 4 in FY 2002.

License Renewal

The Reactor License Renewal program implements the technical and regulatory requirements for the renewal of power plant licenses. As mandated by the Atomic Energy Act, the NRC issued original reactor operating licenses for 40 years which may be renewed for an additional 20 years. The review process for renewal applications provides continued assurance that the level of safety provided by an applicant's current licensing basis is maintained for the extended period of operation. When reviewing a license renewal application, the NRC performs a comprehensive review that focuses on passive structures and components of the plants that are subject to the



NUCLEAR REACTOR SAFETY

effects of aging to ensure that the licensee has programs and processes in place to manage these effects.

The license renewal review program is proceeding aggressively. To date, the agency has received thirteen applications. Five applications, covering ten units, have been approved and the licenses have been renewed as of the end of FY 2002. Eight applications, for an additional sixteen units, are currently under review. The NRC expects that almost all of the 104 currently licensed units will ultimately apply to renew their licenses.

Reactor Inspection and Performance Assessment Program

The NRC provides oversight of plants through its reactor oversight process (ROP) to verify that nuclear plants are being operated safely in accordance with NRC rules and regulations. The NRC has full authority to take whatever action is necessary to protect public health and safety and may demand immediate licensee action, up to and including a plant shutdown.

The ROP uses both inspection findings and performance indicators (PIs) to assess the performance of each plant within a regulatory framework of seven cornerstones of safety. The NRC performs a baseline program of inspections at each plant and may perform supplemental inspections and take additional actions as necessary to ensure that the plants address significant issues. The NRC communicates the results of its oversight process by placing plant-specific inspection findings and PI information, as well as industry-level indicators, on its Web site. The NRC also conducts public meetings with licensees to discuss the results of the agency's assessment of licensees' performance.

The ROP is designed to maintain safety more effectively by focusing staff and industry attention on risk-significant activities while reducing unnecessary regulatory burden on the licensees. The ROP was revised in the late 1990s to be more risk-informed, and the second full cycle of assessments using the revised ROP was completed during FY 2002. Key features of the process included development of a risk-informed regulatory framework. This framework is comprised of risk-informed inspections, a significance determination process to evaluate inspection findings, licensee-reported performance indicator information, and streamlined assessment and enforcement activities.

Davis-Besse Inspection Results

In March 2002, FirstEnergy Nuclear Operating Company, the licensee, discovered a cavity in the reactor pressure vessel (RPV) head at the Davis-Besse Nuclear Power Station. The NRC dispatched an augmented inspection team to gather facts about the event. The agency documented the results of the inspection in NRC Inspection Report No. 50-346/02-03, dated May 3, 2002. As a result, the NRC issued two bulletins to all pressurized water reactor (PWR) licensees. The first bulletin instructed licensees to report on the condition of the RPV head, past incidents of boric acid leakage, and the basis for concluding that their boric acid inspection programs were effective. The second bulletin advised the licensees of the need for more stringent inspection techniques in the examination of their vessel heads. A task force was formed to review NRC regulatory practices as a result of this significant plant event. The Davis-Besse Lessons Learned Task Force issued its report on September 30, 2002, and the agency is using the report to develop future agency actions.

CONTINUED ON PAGE 34

CHAPTER 2: PROGRAM PERFORMANCE

Industry Safety Indicators¹

The ultimate measure of NRC's programs in the Nuclear Reactor Safety arena is the continued safe operation of nuclear power plants. In addition to monitoring the performance of individual plants, the NRC compiles data on overall safety performance using several industry-level performance indicators, some of which are included below and on the next page. These indicators show significant improvement in the safety performance of nuclear power plants since 1988.

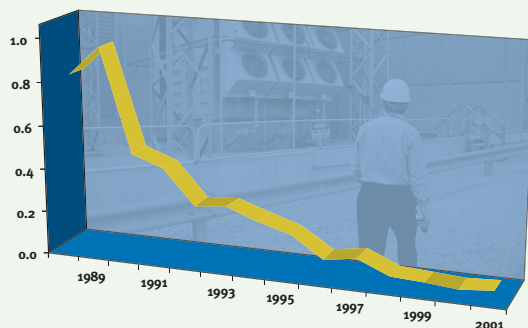
This improvement in the safety performance of nuclear power plants is the result of the combined efforts of the nuclear industry and the NRC and the additional experience both have gained in the operation and maintenance of nuclear power facilities.

Experience in plant operations and feedback from operating experience data have yielded a steady stream of improvements in the reliability of plant systems and components, plant operating procedures, training of power plant operators, and regulatory oversight.

Licensees have the primary role in maintaining safety. They are responsible for designing, maintaining and operating nuclear power plants in a manner that provides adequate protection of public health and safety. The NRC oversees plant operating performance and will not allow licensees to operate their plants if safety performance falls below acceptable levels.

SIGNIFICANT EVENTS

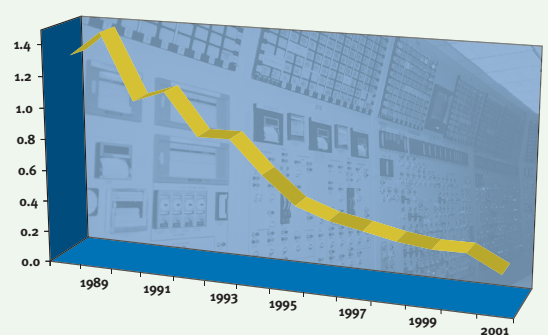
Per reactor



- Significant events meet specific criteria, such as degradation of important safety equipment. The NRC staff reviews operating events and assesses their safety significance. The number of significant events has declined since 1989.

SAFETY SYSTEMS ACTUATIONS

Per reactor

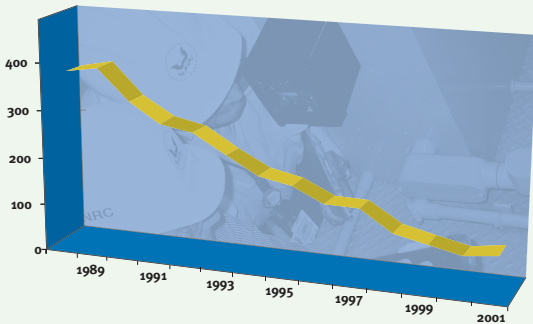


- Safety systems mitigate off-normal events by providing reactor core cooling and water addition. Actuations of safety systems that are monitored include certain emergency core cooling and emergency electrical power systems. Actuations can occur as a result of "false alarms" such as testing errors or in response to actual events. The number of safety system actuations has declined since 1989.

NUCLEAR REACTOR SAFETY

COLLECTIVE RADIATION EXPOSURE

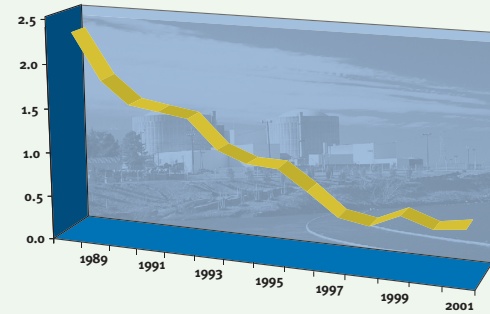
Exposure (Person-centisievert)



▶ The total radiation dose received by workers at nuclear plants is an indicator of the effectiveness of the controls on personnel radiation exposure. Worker radiation dose shows a significant reduction since 1989.

AUTOMATIC SCRAMS

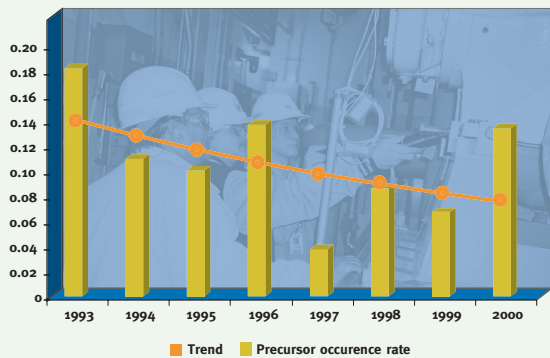
Per reactor



▶ A scram is a basic reactor protection safety function that shuts down the reactor by inserting control rods into the reactor core. Scrams can result from events that range from relatively minor incidents or human error to precursors of accidents. The number of scrams has declined steadily since 1988.

PRECURSOR OCCURRENCE RATE

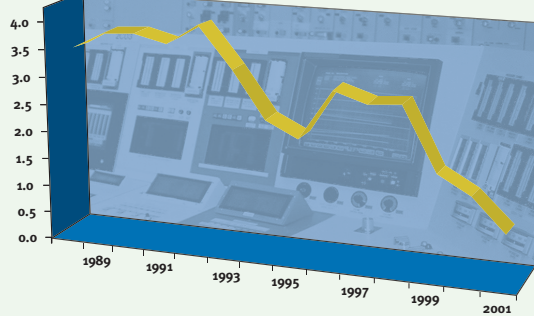
Per reactor per year



▶ The NRC staff assesses the risk significance of events at plants. A precursor event is an event that has a probability of greater than 1 in 1 million of leading to substantial damage to the reactor fuel. The occurrence rate of precursor events declined during the period from 1993 to 2000. A “significant” precursor event has a probability of 1 in 1,000 or greater of leading to substantial damage to the reactor fuel. No “significant” precursor events have been identified between 1996 and 2000.

SAFETY SYSTEM FAILURES

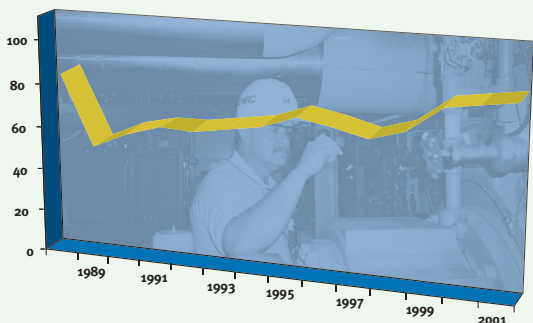
Per year



▶ Safety system failures are any events or conditions that could prevent the fulfillment of a safety function by a safety system. The total number of safety system failures across the industry has declined since 1992.

AVERAGE NUCLEAR REACTOR CAPACITY FACTOR

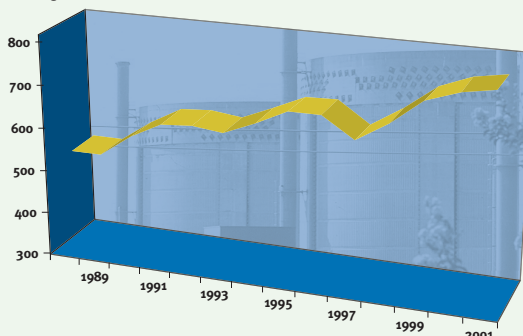
Percent



▶ The average annual reactor capacity factor has increased from 62 percent in 1987 to 90 percent in 2001.
Source: DOE/EIA Monthly Energy Review

NUCLEAR POWER GENERATION

Gigawatt Hours



▶ Improvements in nuclear reactor safety have occurred at a time when nuclear power generation has increased significantly, from 455,000 gigawatt hours in 1987 to 767,000 gigawatt hours in 2001. Source: DOE/EIA Monthly Energy Review

CHAPTER 2: PROGRAM PERFORMANCE

CONTINUED FROM PAGE 31

The plant remains shut down for replacement of the reactor vessel head and for broad safety reviews and performance improvement activities. NRC approval is required before the plant can restart.

Safety Research

The NRC's reactor research program resolves safety issues for nuclear power plants, assesses the effectiveness of selected NRC programs, evaluates operational events to identify precursors to accidents, proposes regulatory improvements, and coordinates the development of consensus and voluntary standards for agency use. The agency conducts its research programs to reduce uncertainties in areas of potentially high risk or safety significance and to develop the technical basis to support realistic safety decisions. Where possible, the NRC engages in research cooperatively with the Department of Energy (DOE), the nuclear industry, universities, and international partners. The research program includes the key areas of risk analysis, structural integrity research, new reactors, and digital safety systems research.

Risk Analysis

Work is underway to advance the state of the art and apply risk assessment methods to provide a technical basis for improving reactor regulatory programs. The reactor research program supports agency efforts to use risk information in all appropriate aspects of regulatory decisionmaking, apply risk assessment technology to resolve safety issues, develop a risk-informed regulatory framework, and focus regulatory activities on the most risk-significant aspects of licensed activities. The research program strives to improve risk technology and modeling techniques, reduce uncertainties, and develop improved data.

Fuel and Thermal-Hydraulic Research

The NRC is conducting studies of fuel behavior with advanced cladding and at high burn-up. Confirmatory experimental work ensures that safety is maintained as the industry seeks the economies of advanced fuel designs and high utilization (burn-up). The experimental program, along with analytic methods under development, will establish new safety limits for energy deposition and clad oxidation during postulated accidents. The NRC, international community and industry are co-funding much of this work to achieve significant efficiencies.

The NRC has completed a Phenomenon Identification and Ranking Table Report that identifies and assesses source term issues for high burnup and mixed-oxide (MOX) fuels. Also, the agency developed the neutronics code, PARCS, and applied it to the analysis of the control rod ejection accident for reactor cores containing MOX fuel assemblies.

The NRC has an extensive thermal-hydraulic program comprising experimental testing, model development, and validation. The application of these models and experimental results provide the technical basis for risk-informing the regulations and for addressing safety issues. Analysis of hydrogen generation during a severe accident using NRC-developed models provides the technical basis for risk informing combustible gas control requirements (10 CFR 50.44). Models used in the analysis of small and large break-loss-of-coolant-accidents provide the basis for risk informing the regulations and acceptance criteria for emergency core cooling systems (10 CFR 50.46). In FY 2002, the NRC completed work to support the risk-informed revision of several emergency core cooling system requirements.



NUCLEAR REACTOR SAFETY

Structural Integrity Research

The ability of structures, systems, and components to withstand normal operational loads, design basis loads, and accidental loads including natural hazards, such as seismic events, tornados, and floods, is important to safe nuclear power plant operation. Several current projects relate to the evaluation of aging and environmental effects on plant components and structures. These projects include evaluations of methods for non-destructive examination to identify potential degradation, methods for conditional assessment, degradation mechanisms, methods to evaluate performance of degraded components, and methods to repair and mitigate the potential effects of these conditions. This research has been a key factor in developing regulatory strategies to address aging effects, including cracking of steam generator tubes, piping systems, and the reactor pressure vessel head penetrations, and has helped establish the technical bases to support reactor license renewal.

These programs, performed with international collaboration efforts, effectively leverage NRC resources and provide data for verification of analytical methods and realistic assessment of the structural capacity for use in risk assessments.

New Reactor Research

Because of the nuclear industry's increasing interest in new reactors, the NRC has initiated research activities to respond to requests for preapplication interactions on advanced reactor designs. The research activities include identifying the safety issues and research needs for the advanced designs and developing the necessary infrastructure (i.e., the technical bases to support NRC review of these advanced designs).

Digital Safety Systems Research

The instrumentation and control (I&C) systems originally installed in nuclear power plants used analog technology. These systems have become obsolete and replacement components are increasingly costly and difficult to obtain. Therefore, licensees are beginning to upgrade their I&C systems with software-based digital control systems. Several current projects provide the technical basis for assessing the ability of existing digital technologies to perform their intended functions under the adverse environmental conditions that may be expected in a nuclear power plant. Such conditions include electromagnetic and radiofrequency interference, as well as abnormal conditions such as smoke and steam environments. The NRC is also conducting research to advance the state of the art assessment of the reliability of complex digital safety systems, including software-based and commercial off-the-shelf systems. This research leverages work that has been performed for other agencies and countries to maximize the efficient use of NRC resources.

In addition, new advanced reactor plants would be expected to use advanced digital I&C systems. Several current projects are examining emerging technologies to identify issues that must be addressed in the licensing process and provide the technical basis for the agency's safety review.

CHAPTER 2: PROGRAM PERFORMANCE

Strategic Goal		Results					
		FY02	FY01	FY00	FY99	FY98	FY97
Prevent radiation-related deaths and illnesses, promote the common defense and security, and protect the environment in the use of civilian nuclear reactors.	Strategic Goal Measures: <ul style="list-style-type: none"> ➤ 1. No nuclear reactor accidents.² ➤ 2. No deaths resulting from acute radiation exposures from nuclear reactors.³ ➤ 3. No events at nuclear reactors resulting in significant radiation exposures.⁴ ➤ 4. No radiological sabotages at nuclear reactors.⁵ ➤ 5. No events that result in releases of radioactive material from nuclear reactors causing an adverse impact on the environment.⁶ 						
	Results: All of the strategic goal measure targets were met.	KEY: <ul style="list-style-type: none"> Indicates goal was achieved. Indicates goal was partially achieved or was not achieved but significant progress was made. Indicates goal was not achieved. 					

ANNUAL GOALS AND MEASURES

Strategic Goal: Prevent radiation-related deaths and illnesses, promote the common defense and security, and protect the environment in the use of civilian nuclear reactors.

RESULTS

The NRC has identified five measures to determine if it has met its strategic goal. These are top-level measures that define the agency's success in overseeing reactor licensees. The goal of our regulatory efforts is to prevent the occurrence of any of these events. The NRC has met all of its strategic goal measures since GPRA reporting began in 1997.

PERFORMANCE GOALS

In addition to our strategic goal, the NRC has four performance goals for the Nuclear Reactor Safety arena:

1. Maintain safety, protection of the environment, and the common defense and security.
2. Increase public confidence.
3. Make NRC activities and decisions more effective, efficient, and realistic.
4. Reduce unnecessary regulatory burden on stakeholders.

Performance Goal 1.		Results					
		FY02	FY01	FY00	FY99	FY98	FY97
Maintain safety, protection of the environment, and the common defense and security.	Performance Measures: <ul style="list-style-type: none"> ▶ 1. No statistically significant adverse industry trends in safety performance.⁷ ▶ 2. No more than one event per year identified as a significant precursor of a nuclear accident.⁸ ▶ 3. No events resulting in radiation overexposures from nuclear reactors that exceed applicable regulatory limits.⁹ ▶ 4. No more than three releases per year to the environment of radioactive material from nuclear reactors that exceed the regulatory limits.¹⁰ ▶ 5. No breakdowns of physical security that significantly weaken the protection against radiological sabotage, theft or diversion of special nuclear materials in accordance with abnormal occurrence criteria.¹¹ Results: All of the performance goal measure targets were met.						
		KEY: <ul style="list-style-type: none"> Indicates goal was achieved. Indicates goal was partially achieved or was not achieved but significant progress was made. Indicates goal was not achieved. 					

Performance Goal 1

Adverse Safety Trends: The first measure tracks the trends of several key indicators of industry safety performance. The indicators provide insights into major areas of reactor performance, including reactor safety, radiation safety, and physical protection. These trends are of industry averages, rather than individual plant performance. Statistical analysis techniques are applied to each indicator to determine its long-term trend. To date, there have been no statistically significant adverse trends in any of the indicators. The FY 2002 data are preliminary.

Significant Precursors: The second measure tracks significant precursor events. A “significant” precursor event is defined as an event that has a probability of 1 in 1,000 or greater of leading to substantial damage to the reactor fuel. No significant precursor events have been identified since 1996. The FY 2002 data are preliminary.¹²

Overexposures: The third measure tracks individual radiation overexposures within any nuclear power plant. Radiation levels are monitored carefully within the plant, and this measure focuses on instances in which an individual is exposed to radiation levels that exceed set limits. Any exposures below these limits would not be expected to harm an individual. There have been no instances of radiation exposures that exceed regulatory limits since 1997. The FY 2002 data are preliminary.

Releases to the Environment: In addition to the NRC’s duty to ensure the safe operation within nuclear plants, the NRC has established a performance goal to ensure that the environment is not harmed by radioactive releases from the generation of nuclear power. These releases can be in the water that is used for cooling within the plant or through vents to the atmosphere. Radioactivity releases to the environment are tracked using set regulatory

CHAPTER 2: PROGRAM PERFORMANCE

Performance Goal 2.		Results					
		FY02	FY01	FY00	FY99	FY98	FY97
Increase public confidence.	<p>Performance Measures:</p> <ul style="list-style-type: none"> ➤ 1. Complete milestones relating to collecting, analyzing, and trending information for measuring public confidence. ➤ 2. Complete all public outreach activities. ➤ 3. Complete the milestones specific to the agency allegation program effectiveness assessment plan. (This performance measure will be deleted in FY 2003.) ➤ 4. Issue Director's Decisions for petitions filed to modify, suspend, or revoke a license under 10 CFR 2.206¹³ within an average of 120 days.¹⁴ <p>Results: Performance goal measure targets for the first three performance measures were met. The target for the fourth performance measure was not met since Director's Decisions were issued in an average of 126 days.</p>						
		<p>KEY:</p> <ul style="list-style-type: none"> Indicates goal was achieved. Indicates goal was partially achieved or was not achieved but significant progress was made. Indicates goal was not achieved. 					

limits. Any releases below these limits would not be expected to harm an individual or the environment. There have been no releases of nuclear material into the environment that exceed regulatory limits since 1997. The FY 2002 data are preliminary.

Security: The fifth measure reflects the effectiveness of NRC regulations that are designed to promote physical security of nuclear plants. Any breakdowns of security are reported and an information assessment team is dispatched to investigate the incident. Since 1997, there have been no breakdowns of physical security that significantly weaken protection against sabotage, theft, or diversion of special nuclear materials. The FY 2002 data are preliminary.

Performance Goal 2

Public Confidence: The NRC met the milestone to develop recommendations on methods to assess public confidence. The NRC completed the pilot program to determine the usefulness of the public meeting feedback forms in assessing the effectiveness

of NRC's public meeting process. The NRC has decided to keep the feedback forms as a tool to measure public confidence since it helps the agency to improve its interactions with the public. The NRC compiled and analyzed the results of all the feedback forms for the entire period of the pilot program from September 2000 to February 2002. In the more than 922 public meetings held during this period the public comments ranged from very positive to very critical. For example, 70 percent of respondents were familiar (28 percent somewhat familiar) with the meeting topic prior to attending and 55 percent have attended more than five NRC meetings. Eighty-one percent of respondents indicated that attendees' questions were answered clearly, completely, and candidly, and 11 percent indicated they were not.

Public Outreach: Public outreach meetings give the public opportunities for meaningful participation in NRC activities. For the second measure, the NRC held all five of the scheduled public outreach meet-



NUCLEAR REACTOR SAFETY

ings associated with this measure and collected and considered feedback from the public. The NRC used this information to define the scope and possible environmental impacts of license renewal activities.

Allegation Program Assessment: The FY 2002 milestone for the third performance measure was for the NRC staff to submit an analysis of the pilot program survey to ascertain how NRC did in responding to allegers and addressing their concerns. The Commission has decided to discontinue using the survey as a means of measuring the effectiveness of the allegation program. This decision was based primarily on the fact that the latest survey did not provide any new insights and other methods of feedback provide adequate information on the effectiveness of the program. As a result, this performance measure is being deleted for FY 2003. However, the NRC will continue to solicit comments from allegers in closure letters. The NRC will also monitor feedback received from allegers and reconsider the need for a survey if that feedback begins to indicate that systemic problems are arising.

Director's Decisions: The fourth measure assesses the extent to which Director's decisions are handled expeditiously. Under 10 CFR 2.206, any member of the public can submit a petition asking the NRC to take an enforcement action against a licensee. The Director's Decision is the NRC's acceptance or denial of the petitioner's request. During FY 2002, Director's Decisions were issued within an average of 126 days, which did not meet the target of 120 days.

Failure to meet the target resulted from several petitions related to nuclear plant security that were filed following the terrorist attacks on September 11, 2001. In response to the terrorist attacks, the NRC proposed additional security measures for nuclear power plants. The NRC delayed Director's Decisions until the measures were reviewed and approved so as to ensure that decisions conformed to the new NRC policies.

Performance Goal 3

Risk-Informed Regulation: The first measure focuses on progress in developing a coordinated approach to implementing risk-informed decisions throughout the

Performance Goal 3.		Results					
		FY02	FY01	FY00	FY99	FY98	FY97
Make NRC activities and decisions more effective, efficient, and realistic.	Performance Measures: <ul style="list-style-type: none"> ➤ 1. Complete specific reactor milestones in the Risk-Informed Regulation Implementation Plan. ➤ 2. Complete at least two key process improvements per year in selected program and support areas that increase efficiency, effectiveness, and realism. ➤ 3. Complete all license renewal application reviews within 30 months. 						
	Results: All of the performance goal measure targets were met.	KEY: <ul style="list-style-type: none"> Indicates goal was achieved. Indicates goal was partially achieved or was not achieved but significant progress was made. Indicates goal was not achieved. 					

CHAPTER 2: PROGRAM PERFORMANCE

agency's regulatory processes. The NRC completed the milestones in the risk-informed regulation implementation plan on schedule. The milestones included submitting the proposed rule for combustible gas control (10 CFR 50.44) to the Commission in May 2002, and the proposed rule for risk-informed categorization and treatment of structures, systems, and components (10 CFR 50.69) in September 2002. In addition, the NRC issued the generic safety evaluation for risk-management technical specifications for public comment in July 2002.

Process Improvements: The second measure concerns actions to improve NRC internal processes. During FY 2002, the agency improved its processes in two key aspects of the Nuclear Reactor Safety arena. First, it gained efficiency in the license renewal process. Second, it improved efficiency and effectiveness in reviewing measurement uncertainty recapture (MUR) power uprates.

The first process improvement seeks to achieve a 30 percent efficiency gain in resources needed to review license renewal applications. To achieve the 30 percent goal, the NRC issued improved implementation guidance in a license renewal regulatory guide and the standard review plan. The NRC expects that use of the improved guidance will enhance the efficiency and effectiveness of the renewal process by focusing the information provided by the applicant on situations where augmentation of existing programs is required or a plant-specific program is needed. The first application to be prepared using the improved guidance was filed in the second quarter of 2002.

For the second process improvement, the NRC evaluated the MUR power uprate application and review process. It was determined that the process would be improved if guidance was issued specifying staff information needs. It is expected that the process will be improved because requests for additional information will be minimized for applications that follow this guidance.

License Renewals: The third measure is to ensure license renewal reviews are handled expeditiously. The NRC completed two license renewal reviews, for four units, in FY 2002. It issued renewed licenses for Hatch, Units 1 and 2, in approximately 23 months and the renewed licenses for Turkey Point, Units 3 and 4, were issued in approximately 21 months. The NRC developed and issued guidance based on public interactions with external stakeholders. For example, in the development of the Regulatory Guide, the generic aging lessons learned, and the standard review plan, there was extensive public interaction.

Performance Goal 4.		Results					
		FY02	FY01	FY00	FY99	FY98	FY97
Reduce unnecessary regulatory burden on stakeholders.	Performance Measures: > 1. Complete specific milestones to reduce unnecessary regulatory burden. Results: The performance goal measure target was met.						
		KEY: Indicates goal was achieved. Indicates goal was partially achieved or was not achieved but significant progress was made. Indicates goal was not achieved.					

Performance Goal 4

The milestone for this measure was to implement several initiatives for reducing unnecessary regulatory burden. The NRC expects to complete the initiatives in FY 2004.

One of the strategies in the NRC’s Strategic Plan is to actively seek stakeholder input to identify and discuss opportunities for reducing unnecessary regulatory burden. The agency held a workshop in May 2001 for that purpose. Discussions with stakeholders were held during FY 2002, and an initiative was developed to review various licensee requirements to determine which ones could be modified to reduce unnecessary regulatory burden. The initiative also seeks to identify and address regulations that are obsolete or involve paperwork requirements. The initiative is described in SECY-02-0081, “Staff Activities Related to The NRC Goal of Reducing Unnecessary Regulatory Burden on Power Reactor Licensees.” The issuance of SECY-02-0081 and the related direction from the Commission to the NRC staff fulfilled the milestones established for

FY 2002. The NRC revised the initiative and related milestones in response to stakeholders’ suggestions to avoid collecting additional information to support burden reduction efforts. The NRC began the initiative in FY 2002 and will pursue the associated rulemakings and related activities during FYs 2003 and 2004.

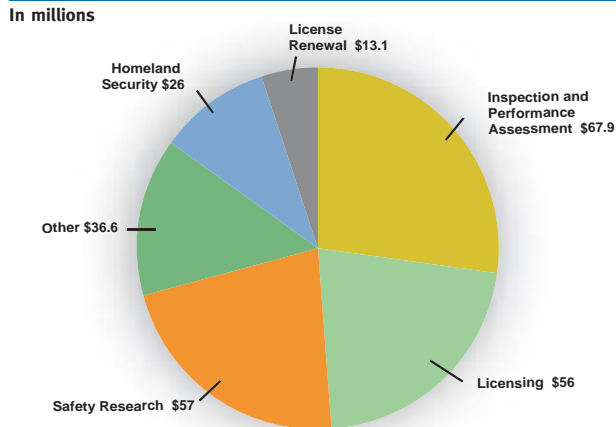
Although not specifically included in the milestones for reducing unnecessary regulatory burden, the NRC is also continuing many initiatives that contribute to this performance goal. These include license amendments, power uprates, electronic information exchange, improved requirements in technical specifications for specific plants, and an improved reactor inspection and oversight process.

CHAPTER 2: PROGRAM PERFORMANCE

FUNDING

The Nuclear Reactor Safety budget, totaling \$256.6 million in FY 2002, was spent primarily on five key programs. Each program provides a specific and linked role to ensure safety at nuclear power plants. For example, the licensing program establishes the standards and procedures for operating nuclear power plants in the plant's operating license. The inspection and performance assessment program inspects the plants to ensure that the plants are being operated and maintained in accordance with its license and NRC rules and regulations.

BUDGET AUTHORITY BY PROGRAM



Total funding for Nuclear Reactor Safety in FY 2002 was \$256.6 million

PROGRAM EVALUATION

The Strategic Plan had no program evaluations scheduled for the Nuclear Reactor Safety arena in FY 2002. However, the NRC continued to integrate the improvements to its regulatory process that resulted from the program evaluation conducted in FY 2001 for the ROP.

Although the ROP has been in place for the last two years at all commercial nuclear power plants, NRC

staff continues to work with all stakeholders to evaluate its effectiveness. As a key part of this effort, the NRC performs an annual self-assessment to identify lessons learned and areas for improvement. The calendar year 2001 assessment was completed in April 2002.

Overall, the self-assessment concluded that the ROP has succeeded in supporting the NRC's performance goals and making progress towards fulfilling the regulatory principles upon which it was established. During 2001, the ROP was effective in monitoring operating nuclear power plant activities, identifying significant performance issues, and ensuring that licensees took appropriate actions before plant performance became unacceptable, thereby helping to ensure that safety was maintained.

Davis-Besse Evaluation

As discussed earlier, an NRC licensee discovered a cavity in the RPV head at the Davis-Besse Nuclear Power Station. The NRC dispatched an augmented inspection team to gather facts about the event. As a result of that inspection, the NRC issued bulletins to all PWR licensees to address the issues identified by the inspection team. In addition, a task force was formed to review NRC regulatory practices as a result of this significant plant event. That task force issued a report on the event on September 30, 2002. The recommendations are being reviewed and action plans are being developed to address four overarching areas. The first is an assessment of stress corrosion cracking. Secondly, an assessment of operating experience for integration of that experience into training and a review of program effectiveness. The third area is an evaluation of NRC inspection, assessment, and project management guidance. Last, an assessment of barrier integrity requirements is being addressed.

► The NRC regulates nuclear medicine.



NUCLEAR MATERIALS SAFETY

NUCLEAR MATERIALS SAFETY

Strategic Goal: Prevent radiation-related deaths and illnesses, promote the common defense and security, and protect the environment in the use of source, byproduct, and special nuclear materials.

Overview

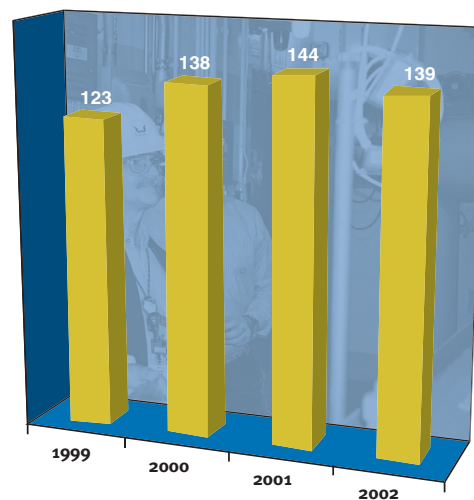
The Nuclear Materials Safety arena encompasses NRC-regulated aspects of nuclear fuel cycle facilities and nuclear materials activities. This arena oversees more than 20,000 specific and 150,000 general licensees. These licensees are regulated by the NRC and 32 Agreement States.

This diverse regulated community includes: uranium extraction; uranium conversion; uranium enrichment; nuclear fuel fabrication; fuel research and pilot facilities; and large and small users of nuclear material for industrial, medical, or academic purposes. The last group--the large and small users of nuclear materials includes radiographers, hospitals, private physicians, nuclear gauge users, large and small universities, and others. This arena includes all regulatory activities carried out by the NRC and the Agreement States to ensure that nuclear materials and facilities are used in a manner that protects public health and safety and the environment and protects against radiological sabotage and theft or diversion of special nuclear materials.

Ensuring the Safe Use of Nuclear Materials

The Nuclear Materials Safety arena oversees several distinct program areas. These programs are discussed in the following section.

NUMBER OF CORE SAFETY AND SAFEGUARDS INSPECTIONS COMPLETED



All Inspections completed as scheduled in Fuel Cycle Master Inspection Plan

In FY 2002, the NRC completed 171 fuel cycle licensing actions and conducted 139 inspections of fuel cycle licensees.

Fuel Facilities Licensing and Inspection

The NRC licenses and inspects all commercial nuclear fuel facilities involved in the processing and fabrication of uranium ore into reactor fuel as part of the agency's nuclear fuel cycle safety and safeguards program. The NRC conducts detailed health, safety, safeguards, and environmental licensing reviews and inspections of licensee programs, procedures, operations, and facilities to ensure safe and secure operations. Each of the 44 fuel cycle facilities holds a license that specifies the materials the licensee may possess, sets restrictions on how the materials may be used, and establishes additional licensee responsibilities (such as worker protection, environmental controls, and financial assurance), as appropriate.

CHAPTER 2: PROGRAM PERFORMANCE

The NRC issues and maintains licenses or certificates to fuel facility operators to authorize their possession and use of source, special nuclear, and byproduct material in accordance with requirements promulgated in the Code of Federal Regulations upon NRC approval of license or certificate applications. These applications demonstrate how the facilities will be operated to ensure adequate safety and safeguards.

A significant licensing action began in February 2001, with the submission of the Duke, Cogema, Stone & Webster (DCS) application to construct a mixed oxide (MOX) fuel fabrication facility on the Department of Energy's Savannah River Site near Aiken, South Carolina. The proposed use of MOX fuel is part of a national nonproliferation effort to dispose of surplus weapons-usable plutonium by irradiating it in existing commercial light water reactors. The NRC issued a draft safety evaluation report for construction in April 2002, that documents its preliminary safety conclusions. The staff review process and conclusions in the report were discussed with the public at a meeting held in North Augusta, South Carolina, on August 27, 2002. Due to changes in the national nonproliferation effort, several aspects of the design basis for the MOX facility will be changed, and the applicant submitted a revised construction authorization request on October 31, 2002.

In FY 2002, the NRC published NUREG-1520, Standard Review Plan for the Review of an Application for a Fuel Cycle Facility, which provides guidance to staff to ensure the quality and uniformity of the safety and environmental reviews of applications to construct or modify and operate nuclear fuel cycle facilities.

The NRC continued its oversight of the United States Enrichment Corporation's (USEC) two gaseous diffusion uranium enrichment plants located in Paducah, Kentucky, and Portsmouth, Ohio. In early 2002, the NRC issued several amendments to the Certification of Compliance for the Paducah plant that facilitated relocation of shipping and transfer operations from the Portsmouth, Ohio, facility to the Paducah plant. The first product shipment directly to the customer from the Paducah plant occurred on May 16, 2002.

The NRC implemented the revised Manual Chapter (MC) 2604, Licensee Performance Review, which makes the fuel cycle licensee performance review process more timely and risk-informed, and will allow the agency to focus more quickly on declining performance trends related to safety-significant activities at licensed facilities. Also, the NRC revised and issued for public comment MC 2600, Fuel Cycle Facility Operational Safety and Safeguards Inspection Program. The revised program will incorporate the operating experience gained during the transition from a compliance-based to a more risk-informed program and better defines the program management oversight process. Implementation is scheduled to begin in FY 2003.

Materials Users Licensing and Inspection

Currently, the NRC licenses and inspects approximately 4,900 specific licenses for the use of nuclear byproduct and other radioactive material. These uses include medical diagnosis and therapy, medical and biological research, academic training and research, industrial gauging and nondestructive testing, production of radiopharmaceuticals, and fabrication of commercial products such as smoke detectors and

other sealed sources and devices. In FY 2002, the NRC completed 4,009 materials licensing actions.

Detailed health and safety reviews and inspections of licensee procedures and facilities provide reasonable assurance of safe operations and the development of safe products. The NRC routinely inspects materials licensees to ensure that licensees are using nuclear material in a safe manner, maintaining accountability of materials, and protecting public health and safety. The NRC identifies issues resulting from incidents and events and analyzes operational experience from NRC and Agreement State licensees. The NRC completed 1,550 nuclear materials program inspections in FY 2002.

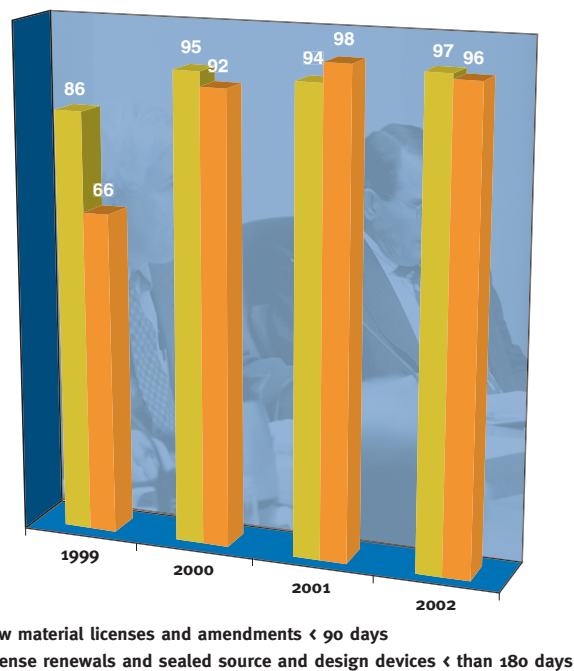
Over the past year, significant progress was made towards identifying the regulatory applications that would be amenable to and would benefit from an increased use of risk insights and information. Draft screening criteria were published and eight case studies were completed to (1) evaluate the effectiveness of the screening criteria for identifying regulatory applications amenable to being risk-informed, (2) identify potential near-term process improvements, and (3) evaluate existing tools, methods and data. The case studies were also used to evaluate the feasibility and usefulness of developing safety goals specific to nuclear material and waste regulation. As a result of this effort, proposed draft safety goals were derived from the case studies. Risk insights from NUREG/CR-6642, Risk Analysis and Evaluation of Regulatory Options for Nuclear Byproduct Material Systems, were used in reevaluating inspection priorities.

The NRC continued monitoring materials safety issues through its event evaluation and incident

response activities. In FY 2002, the NRC staff met regularly to evaluate the safety significance of the events reported by its licensees, and Agreement States reported events that met performance goal conditions. For events involving the loss or theft of licensed material, response actions and source recovery efforts were commensurate with the safety significance of the material involved. Operating experience associated with losses and thefts of material was utilized in the NRC's ongoing assessment of regulatory changes for the security and control of licensed materials. The timeliness in reviewing nuclear material license renewals and sealed source and device designs has improved from 1999–2002, as identified in the graph below.

TIMELINESS IN REVIEWING NUCLEAR MATERIAL LICENSING APPLICATIONS

Percent completed on time



CHAPTER 2: PROGRAM PERFORMANCE

State and Tribal Programs










The NRC provides for cooperation, oversight, technical assistance, and liaison with States, local governments, Indian tribes, and interstate organizations. The NRC shares its regulatory responsibilities with 32 states, called Agreement States. The NRC, with Agreement State participants, conducts periodic Integrated Materials Performance Evaluation Program (IMPEP) reviews of Agreement States programs to ensure public health and safety and compatibility of Agreement State programs with NRC programs. IMPEP uses a common evaluation process that is applicable to both Agreement State and NRC regional materials programs to attain a uniform materials safety policy throughout the nation.

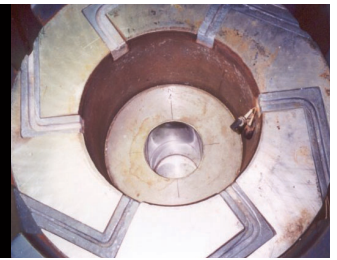
Materials Research

The Research Program is working to develop a technical basis to risk-inform the regulatory requirements for materials licenses by developing risk assessment tools and safety goals for materials applications. In addition, the NRC is cooperating with other Federal agencies to assess the significance of radioactive material released to municipal sewage systems and updating codes used for assessing radiation doses from materials activities.

ANNUAL GOALS AND MEASURES

Strategic Goal: Prevent radiation-related deaths and illnesses, promote the common defense and security, and protect the environment in the use of source, byproduct, and special nuclear materials.

Strategic Goal		Results					
		FY02	FY01	FY00	FY99	FY98	FY97
Prevent radiation-related deaths and illnesses, promote the common defense and security, and protect the environment in the use of source, byproduct, and special nuclear materials.	<p>Strategic Goal Measures:</p> <ul style="list-style-type: none"> ▶ 1. No deaths resulting from acute radiation exposures from civilian uses of source, byproduct, or special nuclear materials, or deaths from other hazardous materials used or produced from licensed material.² ▶ 2. No more than six events per year resulting in significant radiation or hazardous materials exposures from the loss or use of source, byproduct, and special nuclear materials.³ ▶ 3. No events resulting in releases of radioactive material resulting from civilian uses of source, byproduct, or special nuclear materials that cause an adverse impact on the environment.⁴ ▶ 4. No losses, thefts, or diversion of formula quantities of strategic special nuclear material; radiological sabotages; or unauthorized enrichment of special nuclear material regulated by NRC.⁵ ▶ 5. No unauthorized disclosure or compromise of classified information causing damage to national security.⁶ <p>Results: All of the strategic goal measure targets were met.</p>						
	<p>KEY:</p> <ul style="list-style-type: none">  Indicates goal was achieved.  Indicates goal was partially achieved or was not achieved but significant progress was made.  Indicates goal was not achieved. 						



NUCLEAR MATERIALS SAFETY

RESULTS

The NRC has established five measures to determine its success in meeting Nuclear Material Safety strategic goal. These are top-level measures that define the NRC's success in overseeing nuclear materials licensees. The goal of the NRC's regulatory efforts is to prevent the occurrence of any of these events. The NRC has met all of its strategic goal measures since GPRA reporting began in 1997.

1. Maintain safety, protection of the environment, and the common defense and security.
2. Increase public confidence.
3. Make NRC activities and decisions more effective, efficient, and realistic.
4. Reduce unnecessary regulatory burden on stakeholders.

PERFORMANCE GOALS

In addition to our strategic goal, the NRC has four performance goals for the Nuclear Materials Safety arena:

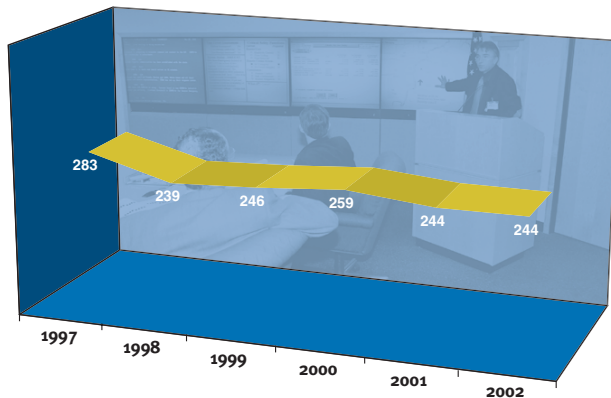
Performance Goal 1

Losses of Control: For the first performance measure, there were 266 losses of control of licensed material in FY 2002. This was within the target of 300.

Performance Goal 1.		Results					
		FY02	FY01	FY00	FY99	FY98	FY97
Maintain safety, protection of the environment, and the common defense and security	Performance Measures:¹ <ul style="list-style-type: none"> ➤ 1. No more than 300 losses⁷ of control of licensed material per year.⁸ ➤ 2. No occurrences of accidental criticality.⁹ ➤ 3. No more than 30 events per year¹⁰ resulting in radiation overexposures¹¹ from radioactive material that exceed applicable regulatory limits. ➤ 4. No more than 45 medical events per year.¹² ➤ 5. No more than 5 releases per year¹³ to the environment of radioactive material from operating facilities that exceed the regulatory limits.¹⁴ ➤ 6. No more than 5 substantiated cases per year of attempted malevolent use¹⁵ of source, byproduct, or special nuclear material. ➤ 7. No breakdowns of physical protection or material control and accounting systems resulting in a vulnerability to radiological sabotage, theft, diversion, or unauthorized enrichment of special nuclear material.¹⁶ ➤ 8. No nonradiological events that occur during NRC-regulated operations, which cause impacts on the environment that cannot be mitigated within applicable regulatory limits, using reasonably available methods.¹⁷ Results: The performance goal measure targets were met.	●	●	●	●	●	●
		KEY: <ul style="list-style-type: none"> ● Indicates goal was achieved. ■ Indicates goal was partially achieved or was not achieved but significant progress was made. ◆ Indicates goal was not achieved. 					

CHAPTER 2: PROGRAM PERFORMANCE

LOSSES OF CONTROL OF LICENSED NUCLEAR MATERIAL



- ▶ Target: No more than 300 losses of control of licensed nuclear material. The target was lowered in FY 2001 from 356 to 350 and was further lowered in FY 2002 from 350 to 300 to better reflect actual operating experience.

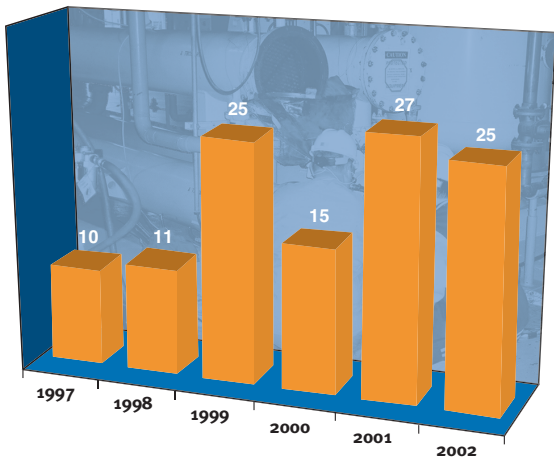
This measure tracks reportable events of materials entering the public domain in an uncontrolled manner. Many of the events counted here do not, by themselves, present a public health and safety risk. For example, most of the losses of control of licensed material involve shielded materials, which are unlikely to result in overexposures to individuals or releases to the environment. However, they are included because their loss may indicate weaknesses in licensee programs, which, if ignored, could trigger a more significant problem.

During FY 2002, NRC took action to increase licensee awareness of the need to maintain effective control over radioactive material, and to report unusual or suspicious activity to local law enforcement and federal agencies. In addition, operating experience associated with the loss or theft of material was utilized in the evaluation of potential regulatory changes. One example is the regulation covering the security and control of portable moisture density gauges typically used in the construction industry. While these gauges do not represent a safety risk, they do represent a significant portion of the events counted under this measure.

NRC also evaluates all losses and thefts of radioactive material in light of the potential for radiological sabotage. None of the events in FY 2002 involved material of sufficient form and quantity to create an effective radiological weapon. Only four events involved a form and quantity of material that NRC considered to warrant increased attention when reported lost. All four of the sources involved in these events were recovered.

Accidental Criticality: For the second measure, there were no instances of accidental criticality in FY 2002, or in any year since data collection began in FY 1997. Licensees must report inadvertent criticality accidents, regardless of whether they result in exposures or injuries to workers or the public and whether they have adverse impacts on the environment. Events of this magnitude are rare and unexpected.

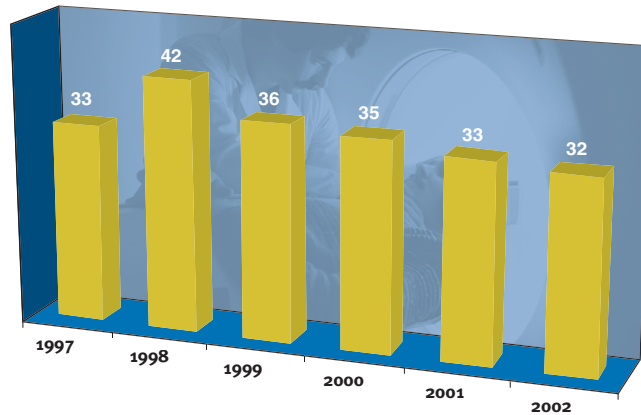
RADIATION OVEREXPOSURES



- ▶ Target: No more than 30 events resulting in radiation overexposures. The target was lowered from 40 to 30 events in FY 2002 to reflect additional historical data.

Radiation Overexposures: For the third measure, there were 25 events resulting in radiation overexposures from radioactive material that exceeded applicable regulatory limits in FY 2002. This represents a slight decrease over the previous year, FY 2001, when 27 events occurred. For fuel cycle facilities, this measure extends to other hazardous materials used with, or produced from, licensed material, consistent with 10 CFR Part 70, Domestic Licensing of Special Nuclear Material. Reportable chemical exposures are those that exceed license commitments. They would also include chemical exposures involving uranium recovery activities under the Uranium Mill Tailings Radiation Control Act.

MEDICAL EVENTS



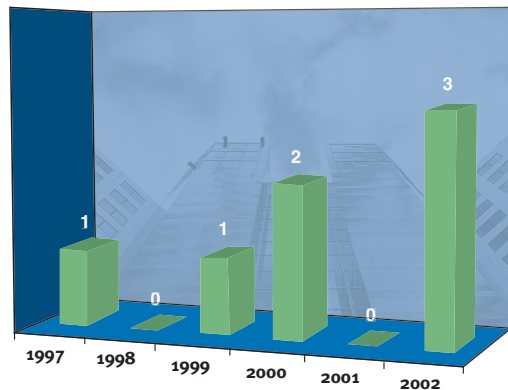
- ▶ Target: No more than 45 medical events.

Medical Events: For the fourth measure, there were 32 medical events in FY 2002. Since GPRA-related data collection began, the peak year was FY 1998 when 42 events occurred. Since that time the trend is generally downward.

This measure pertains to medical events reported under 10 CFR Part 35, Medical Use of Byproduct Material. The NRC's medical use program includes users of byproduct material in medical diagnosis and therapy.

CHAPTER 2: PROGRAM PERFORMANCE

RELEASES TO THE ENVIRONMENT



- No more than 5 releases per year to the environment of radioactive material from operating facilities that exceed the regulatory limits.

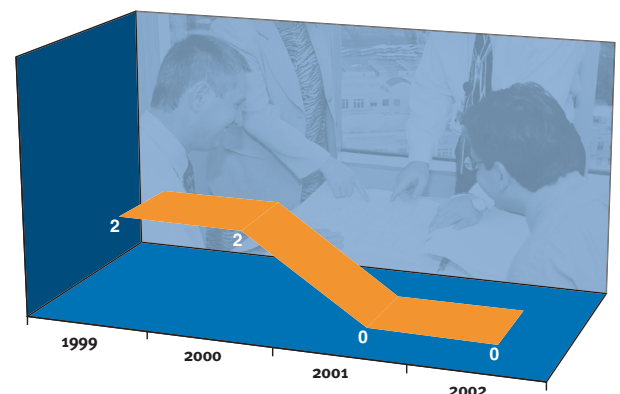
Releases to the Environment: The fifth performance measure is an indicator of the effectiveness of our nuclear materials environmental programs. There were three releases to the environment that exceeded regulatory requirements in FY 2002. These releases did not have any effect on the environment and did not cause doses in excess of the applicable regulatory limit.

Malevolent Uses: The sixth measure tracks our effectiveness at deterring or preventing malevolent uses of nuclear materials. There were no cases of attempted malevolent use of source, by product, or special nuclear material in FY 2002. Malevolent use is defined as the deliberate misuse of radioactive materials with the intent to cause physical or psychological harm to a person or persons, or to cause physical damage to a facility or to the environment. The NRC evaluates intentional violations and deliberate acts against this definition.

Breakdowns of Protection or Control: For the seventh measure, there were no breakdowns of physical protection or material control and accounting systems resulting in a vulnerability to radiological sabotage, theft, diversion, loss of special nuclear material, or unauthorized enrichment of special nuclear material in FY 2002. Events collected under this performance measure may indicate a vulnerability thereby compromising public health and safety.

Nonradiological Events: For the eighth measure, there were no instances of nonradiological events during NRC-regulated operations that caused impacts on the environment in FY 2002, or in any year since GPRA-related data collection began in FY 1997. This measure only involves chemical releases from the NRC-related activities under the Uranium Mill Tailings Radiation Control Act. It is limited to nonradiological environmental impacts from operations, including remediation. Examples of events that might be counted include chemical releases resulting from excursions at in situ leach facilities or releases from mill tailings piles that could contaminate the groundwater.

MALEVOLENT USES



- No more than 5 substantiated cases per year of attempted malevolent use of source, byproduct, or special nuclear material

▶ Radioactive materials are used in a wide variety of devices.



NUCLEAR MATERIALS SAFETY

Performance Goal 2.		Results					
		FY02	FY01	FY00	FY99	FY98	FY97
Increase public confidence.	Performance Measures: <ul style="list-style-type: none"> ▶ 1. Complete milestones relating to collecting, analyzing, and trending information for measuring public confidence. ▶ 2. Complete all the public outreaches. ▶ 3. Complete the milestones specific to the agency allegation program effectiveness assessment plan. (This measure will be deleted in FY 2003.) ▶ 4. Issue Director's Decisions for petitions filed to modify, suspend, or revoke a license under 10 CFR 2.206 within an average of 120 days. Results: The first three performance measure targets were met. The fourth performance measure was not applicable in FY 2002 because no petitions were filed in the Nuclear Materials Safety arena in FY 2002.						
		KEY: <ul style="list-style-type: none"> Indicates goal was achieved. Indicates goal was partially achieved or was not achieved but significant progress was made. Indicates goal was not achieved. 					

Performance Goal 2

Public Confidence: The NRC met the milestone to develop recommendations for continued use of public meeting feedback forms or for another method of assessing public confidence. The NRC completed the pilot program to determine the viability of the public meeting feedback forms to assess the effectiveness of NRC's public meeting process. The NRC has decided to keep the feedback forms as a tool to measure public confidence since it helps to improve interactions with the public. The NRC compiled and analyzed the results of all the feedback forms for the entire period of the pilot program, September 2000 to February 2002. In the more than 922 public meetings held during this period the public comments ranged from very positive to very critical. For example, 70 percent of respondents were familiar (28 percent somewhat familiar) with the meeting topic prior to attending and 55 percent have attended more than five NRC meetings. Eighty-one percent of respondents indicated that attendees' questions were answered clearly, completely, and candidly, and 11 percent indicated they were not.

Public Outreach Activities: Public outreach meetings provide the public with information on NRC activities. FY 2002 examples of public outreach efforts include: the Uranium Recovery Workshop; public meetings on the MOX draft Environmental Impact Statement and draft Safety Evaluation Report; participation at the annual meeting of the Organization of Agreement States; the Risk Task Group Integration meeting; attendance at the Conference of Radiation Control Program Directors annual meeting; workshops and public meetings associated with major rulemakings including Part 35, Medical Use of Byproduct Material. All of the scheduled public outreaches were held in FY 2002.

Allegation Program Assessment: The FY 2002 milestone for performance measure three was for the NRC staff to submit an analysis of the pilot program survey to ascertain how NRC did in responding to and addressing allegers' issues. The Commission has decided to discontinue using the survey as a means of measuring the effectiveness of the allegation program. This decision was based primarily on the fact that the

CHAPTER 2: PROGRAM PERFORMANCE










latest survey did not provide any new insights and other methods of feedback provide adequate information on the effectiveness of the program. As a result, this performance measure is being deleted for FY 2003. However, the NRC will continue in closure letters to ask allers for comments on the resolution of allegations. The NRC will also monitor feedback received from allers, and reconsider the need for a survey if that feedback begins to indicate that systemic problems are arising.

Directors Decisions: There were no petitions filed under 10 CFR 2.206 in the Nuclear Materials Safety arena in FY 2002.

Performance Goal 3

Risk-Informed Regulation: The first measure focuses on progress in developing a coordinated approach to implementing risk-informed decisions throughout the agency's regulatory processes. The milestones for developing a risk-informed regulation implementation plan (RIRIP) were completed on schedule. These included sending the RIRIP updates to the Commission (December 2001 and July 2002) and reporting the final integrated results of the case studies evaluating the use of risk insights for the Office of Nuclear Material Safety and Safeguards regulatory activities.

Process Improvements: This measure shows steps taken to improve our internal processes. This year several processes were evaluated for improvements. In one case, staff began implementing a number of regulatory changes in the materials area based upon recommendation from the FY 2001 review of the nuclear byproduct materials program. One of the major actions was development of a pilot materials inspection program which would utilize relative risk and operational data for establishing inspection priorities and frequencies, and streamline inspection preparation, record-keeping, and reporting requirements. These actions are expected to improve the overall efficiency and effectiveness of the program. In addition, the inspection program for medical use was revised to reflect the requirements of 10 CFR Part 35, published on April 24, 2002. Also, the sealed source and device (SS&D) program was reviewed by an outside group, which found the NRC program technically adequate, with no adverse findings. Two "best practices" which improve the staff's ability to locate specific information on SS&Ds were identified. The results will be incorporated into the next revision of NUREG-1556, Volume 3, "Applications for Sealed Source and Device Evaluation and Registration." The pilot materials inspection program and the review of the SS&D program are also described in the Program Evaluation section of this report.

Performance Goal 3.		Results					
		FY02	FY01	FY00	FY99	FY98	FY97
Make NRC activities and decisions more effective, efficient, and realistic.	Performance Measures: <ul style="list-style-type: none"> ➤ 1. Complete those specific materials milestones in the Risk-Informed Regulation Implementation Plan. ➤ 2. Complete at least two key process improvements per year in selected program and support areas that increase efficiency, effectiveness, and realism. Results: Both performance measure targets were met in FY 2002.						
		KEY: <ul style="list-style-type: none">  Indicates goal was achieved.  Indicates goal was partially achieved or was not achieved but significant progress was made.  Indicates goal was not achieved. 					

Performance Goal 4.		Results					
		FY02	FY01	FY00	FY99	FY98	FY97
Reduce unnecessary burden on stakeholders.	Performance Measures: > 1. Complete specific milestones to reduce unnecessary regulatory burden. > 2. Reduce paperwork and record keeping by the NRC on its licensees by at least 25 percent over a period of five years. Results: Both performance measure targets were met in FY 2002.	●	●	●	●	●	●
		KEY: ● Indicates goal was achieved. ■ Indicates goal was partially achieved or was not achieved but significant progress was made. ✦ Indicates goal was not achieved.					

Performance Goal 4

Regulatory Burden: For the first measure, the NRC completed work on the Part 10 CFR, Part 35 rule earlier this year and published the rule in April 2002. The rule provides a more risk-informed, performance-based approach to the regulation of medical licensees. The staff also conducted training and workshops for licensees and worked closely with the licensee community to develop the implementation guidance.

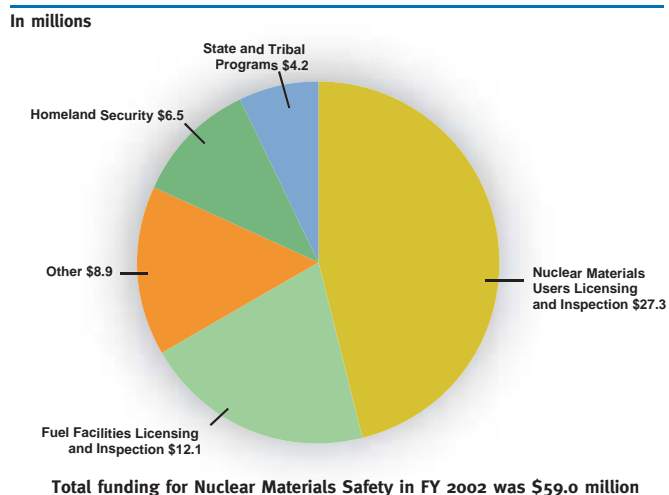
Paperwork Reduction: The NRC also met the target for the second measure by reducing paperwork and recordkeeping burden by 16 percent from FY 2000 to FY 2002, significantly better than the goal of 10 percent for that period. The revision to Part 35 played the largest role in the FY 2002 results.

FUNDING

The Nuclear Materials Safety budget totaled \$59.0 million in FY 2002. More than 78 percent of the funds in this arena were allocated to three key program areas: fuel facilities licensing and inspection, nuclear materials users licensing and inspection, and homeland security.

There were no program evaluations scheduled in the Strategic Plan to be completed for the Nuclear Material Safety arena during FY 2002. However, the NRC continued to integrate the improvements to its National Material Program, Byproduct Material Program, Integrated Materials Performance Evaluation Program Reviews (IMPEP), and Sealed Source and Device Program into its regulatory programs.

BUDGET AUTHORITY BY PROGRAM



CHAPTER 2: PROGRAM PERFORMANCE

PROGRAM EVALUATION

The National Materials Program

The National Materials Program is an effort to create a partnership between the NRC and the Agreement States, for regulating nuclear materials licensees, and ensuring protection of public health and safety and the environment, through the promotion of consensus regulatory priorities, consistent information exchanges, harmonized regulatory approach, and optimized resource strategies. In FY 2002, NRC in coordination with the Organization of Agreement States (OAS) and Conference of Radiation Control Program Directors (CRCPD) Boards developed five pilot projects to provide additional information to help understand the feasibility and viability of the Alliance option recommended by the National Materials Working Group. Each organization (NRC, OAS, CRCPD) has agreed to take the lead for one or more of the pilot projects. Charters for the pilots have been drafted and NRC and the OAS and CRCPD Boards are identifying staff to support working groups to implement the pilots. The pilot projects were discussed at an October 2002, Organization of Agreement States meeting. A report on the results of the pilots is planned for the fall, which will be used as input to help further define a direction for the National Materials Program.

Byproduct Materials Program

The Byproduct Materials Program, Phase II Study was a broad independent review of the nuclear byproduct materials program. It was conducted to: (1) improve efficiency and effectiveness, (2) where possible, apply a more rigorous risk basis to the program, and (3) help control or reduce user fees charged to licensees. In FY 2002, the Phase II findings were implemented. One of the major actions taken led to pilot changes of the materials program inspection frequencies based on a review of their relative risk.

Integrated Materials Performance Evaluation Program

The Integrated Materials Performance Evaluation Program (IMPEP) is an ongoing oversight program designed to evaluate the quality, adequacy, and consistency of NRC and Agreement State materials programs using a set of common performance indicators. In FY 2002, NRC completed a review of the Region II Materials Program. The review was conducted by a multi-disciplinary team, and included the participation of NRC and Agreement State personnel. The team found the Region II operations to be fully satisfactory with respect to the technical quality of licensing, inspections, status of the inspection program, response to incidents and allegations, and technical staffing and training. The Management Review Board supported the teams proposed findings and determined that the program was operating in a manner that was adequate to protect public health and safety. A mid-cycle IMPEP review of Region III also confirmed its program continued to meet IMPEP performance standards.

Sealed Source and Device Program

The Sealed Source and Device Program (SS&D) is one of the elements of the materials licensing program, which was evaluated under IMPEP in FY 2002. In FY 2002, the review team found program operations to be fully satisfactory as compared with performance benchmarks. An MRB meeting confirmed the team's findings, and identified two best practices currently underway in the NRC's program, which improve the capability for locating specific information on SS&Ds. These best practices involve the use of a newly-developed SS&D database to facilitate searches for information based on certain SS&D characteristics, and the addition of a spreadsheet for improving file organization.

➤ Aerial presentation of the proposed nuclear waste repository at Yucca Mountain, Nevada



NUCLEAR WASTE SAFETY

NUCLEAR WASTE SAFETY

Strategic Goal: Prevent significant adverse impacts from radioactive waste to the current and future public health and safety and the environment and promote the common defense and security

Overview

The Nuclear Waste Safety arena encompasses regulatory activities associated with the decommissioning of nuclear reactors and other facilities, storage of spent nuclear fuel, transportation of radioactive materials, and disposal of radioactive wastes. The NRC's efforts in this arena also include waste safety research. The NRC's activities under the Nuclear Waste Policy Act (NWPA) focus on the potential high-level waste geologic repository site at Yucca Mountain in Nevada. The NRC conducts its low-level radioactive waste activities in accordance with the Low-Level Radioactive Waste Policy Act.

Ensuring the Safe Transportation and Disposal of Nuclear Waste

The nuclear waste safety arena has oversight of the distinct program areas discussed in the following section.

Spent Fuel Storage and Transportation Licensing and Inspection

Approximately 3 million shipments of radioactive materials are made each year in the United States. Several Federal agencies share the responsibility for regulating the safety and security of these shipments.

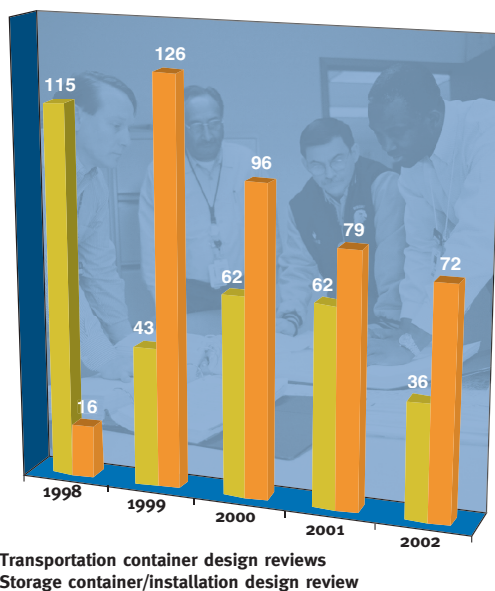
The NRC's transportation activities are closely coordinated with those of the Department of Transportation (DOT) and, as appropriate, with the Department of Energy (DOE) and the Federal Emergency Management Agency. To carry out its regulatory responsibilities for spent fuel and non-spent fuel storage and transportation, the NRC certifies both transport container package designs and spent fuel storage cask designs. The NRC also licenses and inspects interim storage of spent fuel at both reactor and away-from-reactor sites. This helps ensure that licensees transport nuclear materials in packages that will provide a high degree of safety and that licensees provide safe interim storage of spent reactor fuel.

The NRC completed rulemakings associated with Certificate of Compliance amendments for five different storage cask designs. These rulemakings and amendments support the storage needs of specific utilities intending to use the modified storage cask designs.

In FY 2002, the NRC proposed a rulemaking to change 10 CFR Part 71, which establishes requirements for the shipping of nuclear materials. The proposed changes would make the U.S. transportation and safety requirements compatible with the most recent standards issued by the International Atomic Energy Agency and would add other changes initiated by the NRC. The NRC coordinated the proposed rule changes with the DOT, which is proposing to make the same changes to its transportation regulations.

CHAPTER 2: PROGRAM PERFORMANCE

STORAGE AND TRANSPORTATION DESIGN REVIEWS COMPLETED



For FY 2002, the Spent Fuel Storage and Transportation Licensing and Inspection program completed 72 transport container design reviews and 36 storage container and installation design reviews. The graph above displays the number of reviews between FY 1998–2002. The number of design reviews completed in FY 2002 for both the transport and storage containers were lower than the previous year. The decline is attributed to the redirection of staff efforts to respond to activities associated with the September 11, 2001, terrorist attacks and follow-on vulnerability assessments.

NRC staff completed significant work on the licensing process for the Private Fuel Storage, LLC (PFS) application for a license to construct and operate an away-from-reactor independent spent fuel storage

installation on the Reservation of the Skull Valley Band of Goshute Indians, a Federally recognized Indian tribe. Staff members prepared two supplements to the PFS Safety Evaluation Report in response to two late-filed amendments to the PFS License Application. Prompt response by the NRC staff allowed the Atomic Safety and Licensing Board Panel (ASLBP) safety hearing schedule to proceed without additional delays. With the cooperation of the Bureau of Land Management, the Bureau of Indian Affairs, and the U.S. Surface Transportation Board, the NRC staff also completed the Final Environmental Impact Statement was also completed for the PFS project, which allowed the environmental hearing schedule to go forward.

Additionally, the NRC staff participated in the second set of ASLBP hearings on the PFS project, which were completed in early July 2002. These hearings represented a significant adjudicatory proceeding for a major new facility and can be considered a precursor of the hearings on the geologic repository licensing process. The ASLBP expects to complete its findings in the first quarter of 2003. A licensing decision will follow, although the schedule depends on whether the ASLBP decision is appealed to the Commission.

High-Level Waste Regulation

The NRC conducts its high-level waste (HLW) program in accordance with the Nuclear Waste Policy Act, as amended, and the Energy Policy Act of 1992. This legislation specifies an integrated approach and a long-range plan for HLW storage, transportation, and disposal. It also prescribes the respective roles of the NRC, DOE, and EPA in the HLW program. The DOE has the responsibility for the actual disposal of the Nation's HLW, commencing with site characteri-

zation and repository design, and continuing through development, operation, and ultimate closure of a deep geologic repository. The U.S. Environmental Protection Agency (EPA) has been charged with developing environmental standards specific to Yucca Mountain. These standards, which must be consistent with the recommendations of the National Academy of Sciences, will be used to evaluate the safety of the potential geologic repository developed by the DOE. The NRC has extensive prelicensing responsibilities and will be the regulatory authority to issue a license, if appropriate, after determining whether the potential DOE license application for a geologic repository at Yucca Mountain complies with the applicable regulatory standards.

In FY 2002, the NRC continued to build and refine the regulatory framework for evaluating the license application for the proposed Yucca Mountain repository. The NRC issued its final regulation for Yucca Mountain in 10 CFR Part 63 in November 2001. Those regulations reflected the environmental standards developed by EPA. The NRC also published for public comment a proposed rule that addresses “unlikely events” for the proposed Yucca Mountain repository that can be excluded from certain required assessments because of their low probability of occurrence. The NRC also issued for comment a draft of the Yucca Mountain Review Plan, Revision 2, an important companion to the rules in 10 CFR Part 63. The review plan describes the information the staff is to review in the license application and the criteria for determining whether issues have been satisfactorily addressed.

In April 2002, the President accepted the Secretary of Energy’s recommendation that the Yucca Mountain

site be developed as a potential repository for the disposal of high-level nuclear wastes and spent nuclear fuel. In July, Congress approved a resolution of siting approval, which authorizes the DOE to apply to the NRC for a license to operate Yucca Mountain as a nuclear waste repository. The NRC expects the DOE to file a license application in late 2004.

The NRC continued important public exchanges with the DOE on the technical issues most important to licensing the potential HLW repository. These exchanges resolve subissues or lead to agreements for DOE to submit additional information to address the NRC’s concerns. Further, the NRC held numerous meetings with stakeholders on health and safety issues associated with the potential HLW repository at Yucca Mountain, Nevada.

Decommissioning

Decommissioning involves removing radioactive contamination in buildings, equipment, groundwater, and soil to such levels that a facility can be released from service for either unrestricted or restricted use. This program includes power and non-power reactors and materials and fuel facilities. The NRC conducts decommissioning licensing and inspection activities for commercial nuclear facilities currently in the decommissioning process. Licensing actions require NRC review and approval before licensees can implement them. By conducting inspections, the NRC evaluates the licensee’s ability to store or dismantle and decontaminate the facility safely while still maintaining the licensed configuration of the facility and managing the use of decommissioning funds as described in the regulations.

CHAPTER 2: PROGRAM PERFORMANCE

The decommissioning program focuses on resolving key issues, including dose assessments for remediated sites, evaluating institutional controls for restricted use sites, reviewing decommissioning plans, conducting environmental reviews, and preparing environmental impact statements, as appropriate.

The NRC maintains a Site Decommissioning Management Plan (SDMP) list. The SDMP lists sites with technical, financial, and/or other challenges that must be addressed before decommissioning can be completed. During FY 2002, the NRC approved the removal of one site from the SDMP, the Lake City Ammunition Plant in Independence Missouri. The site was deferred to EPA for cleanup as part of a larger cleanup under the Comprehensive Environmental Response, Compensation, and Liability Act. The NRC also developed and implemented public communication plans for SDMP sites to enhance outreach activities with stakeholders.

The NRC issued the final policy statement specifying the decommissioning criteria for the West Valley Demonstration Project at West Valley, New York. These criteria define standards by DOE can ensure that the site can be remediated in a manner that protects public health and safety and the environment.

Waste Safety Research

The Waste Safety Research Program supports a number of the NRC's nuclear waste activities. Research studies involve the decommissioning of facilities, the disposal and storage of radioactive waste, the cleanup of contaminated sites, the development of tools to

assess the movement of radionuclides in the environment, and the assessment of dose to the public as a result of uranium recovery. All research studies support important agency functions. Additionally, the evaluation of spent nuclear fuel storage casks, interim spent fuel storage facilities, and transportation systems support the NRC's efforts to use risk information in all appropriate aspects of regulatory decision making. In FY 2002, the NRC completed a pilot probabilistic risk study of a dry cask storage system.

Package Performance Study

NRC is studying the performance of spent nuclear fuel transportation packages under accident conditions including high-speed impact and fire. Researchers have performed preliminary analyses and prepared test protocols for testing a rail transportation cask. They will perform additional analyses for a truck cask and then revise the test protocols to incorporate the truck cask analyses. The NRC will publish the protocols and conduct public meetings during FY 2003 to discuss the basis conditions of testing. The tests, to be conducted in FY 2004 and FY 2005, will provide empirical data to enhance confidence in the NRC's ability to computationally predict the performance of various transportation packages under accident conditions.

► Independent spent fuel storage installation at H.B. Robinson Nuclear Power Plant, Florence, South Carolina



NUCLEAR WASTE SAFETY

Strategic Goal		Results					
		FY02	FY01	FY00	FY99	FY98	FY97
<p>Prevent significant adverse impacts from radioactive waste to the current and future public health and safety and the environment and promote the common defense and security.</p>	<p>Performance Measures:¹</p> <ul style="list-style-type: none"> ► 1. No deaths resulting from acute radiation exposure from radioactive waste² ► 2. No events resulting in significant radiation exposure³ from radioactive waste ► 3. No release of radioactive waste causing an adverse impact on the environment⁴ ► 4. No losses, thefts, diversion, or radiological sabotage⁵ of special nuclear material or radioactive waste <p>Results: All of the strategic goal measure targets were met.</p>						
		<p>KEY:</p> <ul style="list-style-type: none"> Indicates goal was achieved. Indicates goal was partially achieved or was not achieved but significant progress was made. Indicates goal was not achieved. 					

ANNUAL GOALS AND MEASURES

Strategic Goal: Prevent significant adverse impacts from radioactive waste to the current and future public health and safety and the environment and promote the common defense and security.

RESULTS

The Nuclear Waste Safety arena has established four measures to determine its success in meeting its strategic goal. These are top-level measures defining the NRC's success in overseeing radioactive waste. The goal of the NRC's regulatory efforts is to prevent the occurrence of any of the events. The NRC has met all of its strategic goal measures since GPRA reporting began in 1997.

PERFORMANCE GOALS

In addition to our strategic goal, the NRC has four performance goals for the Nuclear Materials Safety arena:

1. Maintain safety, protection of the environment, and the common defense and security.
2. Increase public confidence.
3. Make NRC activities and decisions more effective, efficient, and realistic.
4. Reduce unnecessary regulatory burden on stakeholders.

CHAPTER 2: PROGRAM PERFORMANCE










Performance Goal 1

Radiation Overexposures: For the first measure, no radiation overexposures from radioactive waste exceeded regulatory limits in FY 2002 or in any year since GPRA-related data collection began in FY 1997. Radiation overexposures are those events that exceed limits provided by NRC regulation 10 CFR 20.2203(a)(2). This measure focuses on events that could result in public or worker overexposures.

Breakdowns of Physical Protection: For the second measure, no breakdowns of physical protection occurred that resulted in a vulnerability to radiological sabotage, theft, diversion, or loss of special nuclear materials or radioactive waste in FY 2002, or in any year since GPRA-related data collection began in FY 1997. Events collected under this performance measure are those that may indicate a vulnerability to radiological sabotage, theft, diversion, or loss of special nuclear materials or radioactive waste, thereby compromising public health and safety.

Radiological Releases: For the third measure, no radiological releases to the environment from operational activities exceeded the regulatory limits in FY 2002 or in any year since GPRA-related data collection began in FY 1997.

Handling of Radioactive Waste and Materials: There were no instances where the NRC did not provide an adequate regulatory framework for radioactive waste and materials under the NRC's regulatory jurisdiction to be handled, transported, stored, or disposed of safely in FY 2002 or in any year since GPRA-related data collection began in FY 1997. The NRC monitors the needs for transportation of materials and waste within its regulatory authority. The NRC also monitors the need for storage and disposal of nuclear wastes under its regulatory authority. For the majority of radioactive waste or materials, the NRC expects no instances where they cannot be handled, transported, or disposed of safely now or in the future.

Performance Goal 1.		Results					
		FY02	FY01	FY00	FY99	FY98	FY97
Maintain safety, protection of the environment, and the common defense and security.	Performance Measures: <ul style="list-style-type: none"> ➤ 1. No events resulting in radiation overexposures⁶ from radioactive waste that exceed applicable regulatory limits⁷ ➤ 2. No breakdowns of physical protection resulting in a vulnerability to radiological sabotage, theft, diversion, or loss of special nuclear materials or radioactive waste^{8,9} ➤ 3. No radiological releases¹⁰ to the environment from operational activities that exceed the regulatory limits¹¹ ➤ 4. No instances where radioactive waste and materials under the NRC's regulatory jurisdiction cannot be handled, transported, stored, or disposed of safely now or in the future^{12,13} Results: All of the performance goal measure targets were met.						
		KEY: <ul style="list-style-type: none">  Indicates goal was achieved.  Indicates goal was partially achieved or was not achieved but significant progress was made.  Indicates goal was not achieved. 					

Performance Goal 2.		Results					
		FY02	FY01	FY00	FY99	FY98	FY97
Increase public confidence.	Performance Measures: <ul style="list-style-type: none"> ▶ 1. Complete milestones relating to collecting, analyzing, and trending information for measuring public confidence ▶ 2. Complete all the public outreaches¹⁴ ▶ 3. Complete the milestones specific to the agency allegation program effectiveness assessment plan. (This measure will be deleted in FY 2003.) ▶ 4. Issue Director's Decisions for petitions filed to modify, suspend, or revoke a license under 10 CFR 2.206¹⁵ within an average of 120 days¹⁶ Results: Performance goal measure targets for the first three performance measures were met. The target for the fourth performance measure was not met since for the two applicable petitions, the Director's Decisions were issued in an average of 167 days.						
		KEY: <ul style="list-style-type: none"> Indicates goal was achieved. Indicates goal was partially achieved or was not achieved but significant progress was made. Indicates goal was not achieved. 					

Performance Goal 2

Measuring Public Confidence: The NRC developed recommendations for continued use of the public meeting feedback form or for another method of assessing public confidence. The NRC completed the pilot program conducted to determine the viability of the feedback forms in assessing the effectiveness of NRC's public meeting process. The NRC has decided to keep the feedback form, as a tool to measure public confidence since the forms help to improve the agency's interactions with the public. The NRC compiled and analyzed the results of all the feedback forms for the entire period of the pilot program, September 2000 to February 2002. Over

900 public meetings occurred during this period, and the public comments ranged from very positive to very critical. For example, 70 percent of respondents were very familiar (28 percent somewhat familiar) with the meeting topic prior to attending and 55 percent have attended more than five NRC meetings. Eighty-one percent of respondents indicated that attendees' questions were answered clearly, completely, and candidly, and 11 percent indicated they were not.

CHAPTER 2: PROGRAM PERFORMANCE

Public Outreach: Public outreach is designed to provide the public with information on NRC activities. The NRC held all of the planned public outreach meetings in the nuclear waste arena. Examples of public outreach efforts in FY 2002 include public meetings held in Nevada to address the Yucca Mountain Review Plan, regulations on disposal of high-level radioactive waste in a geologic repository at Yucca Mountain (10 CFR Part 63), and Site Sufficiency comments, along with broader topics such as the repository licensing process; an open house held in Las Vegas, Nevada where NRC staff were available to discuss NRC's role in regulating the safety of the proposed repository; and public meetings held on the proposed revision to the NRC's transportation regulation (10 CFR Part 71 rulemaking).

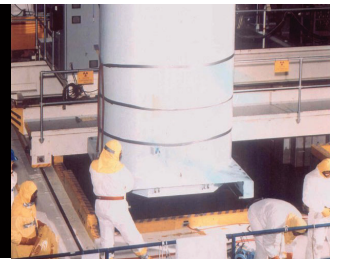
Allegation Program: FY 2002 milestone for the third performance measure was for the NRC staff to submit an analysis of the pilot program survey to evaluate the NRC's performance responding to and addressing alleged issues. The Commission has decided to discontinue using the survey as a means of measuring the effectiveness of the allegation program. This decision was based primarily on the fact that the latest survey did not provide any new insights and other methods of feedback provide adequate

information on the effectiveness of the program. As a result, this performance measure is being deleted for FY 2003. However, NRC will continue in closure letters to ask alleged for comments on the resolution of allegations. The NRC will also monitor feedback received from alleged, and reconsider the need for a survey if that feedback begins to indicate that systemic problems are arising.

Director's Decision-10 CFR 2.206: The fourth measure assesses the timeliness of the Director's Decisions for petitions filed to modify, suspend, or revoke a license under 10 CFR 2.206. The NRC received a number of security-related petitions in FY 2002. Because of the concentrated security-related efforts undertaken during this time, the security-related concerns raised by these petitions needed to be addressed in an integrated fashion with the benefit of the interim compensatory measures (ICMs) and the orders that followed the ICMs. Therefore, in order to evaluate the issues fully, the NRC took longer than the 120-day goal to complete its review and issue a decision. The NRC issued decisions on two relevant applicable petitions in an average of 167 days. Security advisories have since been issued and addressed by licensees with no impact on public confidence from the delay.

Performance Goal 3

Risk-Informed Regulation: The first measure focuses on progress in developing a coordinated approach to implementing risk-informed decisions throughout the agency's regulatory processes. The NRC accomplished the milestones towards developing a risk-informed regulation implementation plan (RIRIP) on schedule. These included sending the RIRIP to the Commission, briefing the Commissioners on the contents (December



NUCLEAR WASTE SAFETY

Performance Goal 3.		Results					
		FY02	FY01	FY00	FY99	FY98	FY97
<p>Make NRC activities and decisions more effective, efficient, and realistic.</p>	<p>Performance Measures:</p> <ul style="list-style-type: none"> ► 1. Complete those specific waste milestones in the Risk-Informed Regulation Implementation Plan. ► 2. Complete at least two key process improvements per year in selected program and support areas that increase efficiency, effectiveness, and realism. ► 3. Complete all major prelicensing milestones needed to prepare for a licensing review of the potential Yucca Mountain repository, consistent with DOE's schedules and before DOE submits its license application.¹⁷ <p>Results: All of the performance goal measure targets were met.</p>						
	<p>KEY:</p> <ul style="list-style-type: none"> Indicates goal was achieved. Indicates goal was partially achieved or was not achieved but significant progress was made. Indicates goal was not achieved. 						

2001 and July 2002), and preparing an overall risk assessment for a dry cask storage system.

Process Improvements: For the second measure, the NRC completed two process improvement reviews in FY 2002. The staff completed a risk insights initiative, which is designed to assess the importance of key technical issues associated with the performance of the proposed Yucca Mountain repository. These insights will help prioritize staff review during the licensing phase. In FY 2002, the process supporting regional inspection planning for independent spent fuel storage installations at 10 CFR Part 50 sites was improved through the use of a risk-informed, performance-based approach, which resulted in a more efficient allocation of available resources. Also, during FY 2002, staff in the nuclear waste safety arena continued progress towards completion of a multi-year effort to update, consolidate, and make more risk-informed and performance-based, the current decommissioning guidance in NUREG-1757. The

NRC issued Volume 1 for public comment and began drafting Volumes 2 and 3.

Prepare for Licensing Review of Potential Yucca Mountain Repository: For the third measure, the NRC met all but one milestone. NRC published the final 10 CFR Part 63, Disposal of High-Level Radioactive Waste in a Proposed Geologic Repository at Yucca Mountain Nevada, on November 2, 2001. This final rulemaking conforms the NRC's rule to EPA's Yucca Mountain standard. The NRC also issued in FY 2002 for public comment a proposed amendment to Part 63, which addresses "unlikely events" that may affect repository performance. The NRC also issued draft Revision 2 of the Yucca Mountain Review Plan for public comment, and held a number of public meetings in Nevada to discuss the document. The Review Plan describes how the staff will review DOE's license application against the requirements in 10 CFR Part 63. The public comment period ends in late FY 2002, and the Review

CHAPTER 2: PROGRAM PERFORMANCE

Performance Goal 4.		Results					
		FY02	FY01	FY00	FY99	FY98	FY97
Reduce unnecessary burden on stakeholders.	Performance Measures: ▶ 1. Complete those specific waste milestones to reduce unnecessary burden.						
	Results: The NRC's FY 2000 Strategic Plan identified no milestones to be completed in the Nuclear Waste Safety arena.	KEY: Indicates goal was achieved. Indicates goal was partially achieved or was not achieved but significant progress was made. Indicates goal was not achieved.					

Plan will be completed in FY 2003. In addition, the NRC completed the Site Characterization Sufficiency Comments in FY 2002. The NRC continued important technical exchanges with the DOE on the key technical issues most important to licensing the potential HLW repository to resolve subissues or reach agreement for the DOE to submit additional information to address NRC's concerns. Because of delays in DOE's program, the NRC reviewed and was able to close 46 of the 60 agreements, which were scheduled for closure in FY 2002.

For further identification of agreements, see Program Evaluation—Risk Insights Initiative for Proposed Yucca Mountain Project.

Performance Goal 4

There were no milestones identified in the FY 2000 Strategic Plan to be completed for the Waste arena. However, the NRC has a number of milestones to be completed in FY 2003–2004, including review of any application submitted for Standard Technical Specifications for Spent Fuel Dry Storage Cask Designs, and adoption of the STS, if approved.

Funding

Each program area in the Nuclear Waste Safety arena plays a specific role in ensuring the safety, protection, and security of the public and environment from radioactive waste. Most of the funding was budgeted for high-level waste regulation and spent fuel storage and transportation (see graph on the right). The regulation of decommissioning accounted for another 17 percent. Waste safety research, which accounted for approximately 16 percent of the allocated funds, supports the NRC's activities associated with decommissioning of nuclear reactors and other facilities, and the interim storage and transportation of spent nuclear fuel. Lastly, homeland security accounted for 6 percent of the allocated funds.

PROGRAM EVALUATION

There were no program evaluations scheduled in the Strategic Plan to be completed for the Nuclear Waste Safety arena during FY 2002. However, NRC initiated one and completed one program evaluation in FY 2002, which are identified below.

Risk Insights Initiative for Proposed Yucca Mountain Project

In FY 2002, NRC initiated a Risk Insights Initiative that will assist in identifying the most important information related to the performance of the proposed Yucca Mountain repository, and resolution of licensing issues. NRC staff has identified nine key technical issues that are most significant to repository performance, such as thermal effects on flow of water. The NRC and DOE have developed formal agreements on the information that DOE needs to furnish in order to address each of these issues, and their related subissues. The Risk Insights Initiative was presented by NRC staff to the Advisory Committee on Nuclear Waste, and will continue in FY 2003. It will help focus regulatory activities, and support risk-informed decision-making during the prelicensing and licensing phases of the repository program.

Decommissioning Program: Lessons Learned from NRC and Licensee Experience

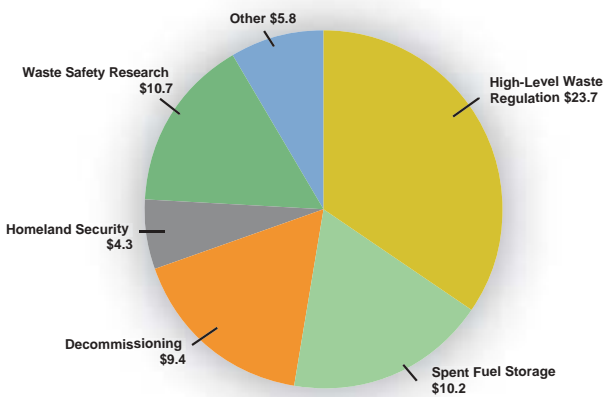
In FY 2002, the NRC completed a review of decommissioning plans and license termination plans recently submitted by licensees to identify improvements that should result in more effective and efficient use of NRC’s and licensees’ resources. In 1997, the NRC issued its final regulation for termination of licenses. This regulation requires different information to be submitted than had been previously required. As a result of the review, the NRC found common areas in licensee plans that, if more completely addressed, would eliminate requests for additional information and improve the quality and timeliness of NRC reviews.

Twelve specific areas of improvement were identified and summarized in a Regulatory Issue Summary issued in January 2002. They included the need for more frequent interactions between NRC and licensees during the preparation of decommissioning plans, greater use of in-process inspections than one time confirmatory surveys, and more complete identification of assumptions for modeling of radiation exposures to humans.

To further improve the review of these plans, the NRC has also expanded its acceptance review process to facilitate the identification of significant technical deficiencies earlier in the review process. In addition, the NRC will focus on reviewing financial assurance and institutional controls issues associated with sites requesting license termination with restrictions on future site use, before conducting a full plan review, as resolving these issues is key to approving the plan.

BUDGET AUTHORITY BY PROGRAM

In millions



Total funding for Nuclear Waste Safety in FY 2002 was \$64.1 million.

CHAPTER 2: PROGRAM PERFORMANCE

INTERNATIONAL NUCLEAR SAFETY SUPPORT

Strategic Goal: Support U.S. interests in the safe and secure use of nuclear materials and in nuclear non-proliferation.

Overview

The International Nuclear Safety Support arena encompasses international nuclear safety and regulatory policy formulation, import-export licensing for nuclear materials and equipment, treaty implementation, international information exchange, international safety and safeguards cooperation and assistance, and deterrence of nuclear proliferation. The agency's international activities support broad U.S. national interests, as well as the NRC's domestic mission.

Maintaining A Program of International Cooperation

The NRC maintains a program of international cooperation to help enhance the safe, secure, and environmentally acceptable civilian uses of nuclear energy both in the United States and throughout the world. This includes work with international organizations such as the International Atomic Energy Agency (IAEA) and the Nuclear Energy Agency.

The International Nuclear Safety Support arena also encompasses the issuance of import/export licenses. It includes activities to ensure compliance with statutes, treaties, conventions, and agency agreements for cooperation and support for International Development-related work with the countries of the Former Soviet Union (FSU) and Central and Eastern Europe (CEE).

Strategic Goal		Results					
		FY02	FY01	FY00	FY99	FY98	FY97
Support U.S. interests in the safe and secure use of nuclear materials and in nuclear non-proliferation.	Performance Measures: <ul style="list-style-type: none"> ▶ 1. Fulfills 100 percent of the significant² obligations over which the NRC has regulatory authority arising from statutes, treaties, conventions, and Agreements for Cooperation.³ ▶ 2. No significant proliferation incidents attributable to some failure of the NRC. ▶ 3. No significant safety or safeguards events that result from the NRC's failure to implement its international commitments. Results: All of the strategic goal measure targets were met.						
		KEY: <ul style="list-style-type: none"> Indicates goal was achieved. Indicates goal was partially achieved or was not achieved but significant progress was made. Indicates goal was not achieved. 					



INTERNATIONAL NUCLEAR SAFETY SUPPORT

As the regulator of the world's largest civilian nuclear program, the NRC has extensive regulatory experience to contribute to international programs in areas such as nuclear reactor safety, nuclear safety research, radiation protection, nuclear materials safety and safeguards¹, nuclear facility and materials security, waste management, and decommissioning of nuclear facilities. The NRC can learn, in turn, from the regulatory experience of other countries. The NRC gains access to non-U.S. safety security and safeguards information through interaction with foreign entities, thereby leveraging its resources. Additionally, the NRC supports the development and implementation of international regulatory standards, policies, and practices.

RESULTS

The International Nuclear Safety Support arena has established three measures to determine its success in meeting the NRC's strategic goal.

Significant Obligations: For the first performance measure, the NRC carried out 100 percent of the significant obligations over which it has regulatory authority arising from statutes, treaties, conventions, and Agreements for Cooperation during FY 2002. For example, the NRC facilitated the timely processing of all export license applications and provided timely comments to the executive branch when consulted on proposed international nuclear agreements and technology transfers. In addition, the NRC led the U. S. delegation to the Second Review Meeting of the Contracting Parties under the Convention on Nuclear Safety (CNS) in Vienna, Austria in April 2002. The Chairman presided over the discussion of the U.S. program and the U.S. National Report, while members of the U.S. delegation participated

in the peer review of the national reports of 27 contracting parties. The report of the U.S. delegation was sent to the State Department with a letter recommending that it be sent to the Senate Foreign Relations Committee. The NRC also participates in development of other international legal framework documents (e.g., The Convention of the Physical Protection of Nuclear Materials, The Nuclear Liability Convention, and the IAEA Safeguards Additional Protocol).

Proliferation: No significant proliferation incidents attributable to some failure of the NRC were reported by the U.S. Government, the IAEA, or other authoritative international organization during FY 2002.

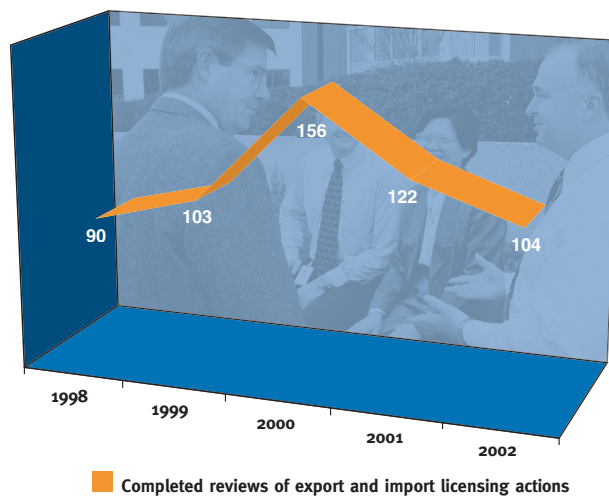
Safety or Safeguard Events: For the third performance measure, no significant safety or safeguards events resulting from the NRC's failure to implement its international commitments occurred in FY 2002. In addition, the U.S. national report for the CNS was published as NUREG-1650.

The NRC approved two export license amendment requests, each of which increased by approximately five kilograms the amount of highly-enriched uranium (HEU) authorized for export to Canada for use as target material for medical isotope production. In addition, the NRC participated in an interagency working group to review physical security measures applicable to the transportation of HEU.

The NRC also played a key role in defining criteria for international agreements on exclusion, clearance, and exemption of contaminated and radioactive materials and for release of commodities for unrestricted use.

CHAPTER 2: PROGRAM PERFORMANCE

NRC EXPORT/IMPORT LICENSING ACTIONS



The NRC completed action on the 104 export and import licenses it received within the 60-days processing deadline. This includes reviews of proposed exports of proliferation-sensitive equipment and material (see graph above).

The NRC participated in IAEA operational safety review team missions to the Czech Republic (two missions) and Hungary; International Regulatory Review Team missions to Armenia, Mexico, Lithuania, and the Czech Republic; and a radiation protection mission to Tajikistan. The NRC engaged in bilateral assistance activities in nuclear safety and safeguards with Russia, the Ukraine, Armenia, Kazakhstan, and countries of central and Eastern Europe in close coordination with the Departments of State and Energy. The NRC successfully concluded eight bilateral exchange agreements in FY 2002 between the Commission and appropriate foreign counterparts to ensure that an effective framework exists for NRC's international exchanges.

Funding for Achieving the Strategic and Performance Goals

The International Nuclear Safety Support arena budget totaled \$11.7 million in FY 2002.

Program Evaluation

The Strategic Plan identified no program evaluations for the International Nuclear Safety Support arena in FY 2002.

ADDRESSING THE PRESIDENT'S MANAGEMENT AGENDA

The President's Management Agenda contained Governmentwide initiatives in FY 2002 to reform government to be more citizen-centered, results-oriented, and market-based, actively promoting competition rather than stifling innovation. As a result, the President identified five Governmentwide initiatives to improve government performance: (1) strategic management of human capital, (2) budget and performance integration, (3) competitive sourcing, (4) expanded electronic government, and (5) improved financial management. The NRC has responded to these Governmentwide initiatives, and its FY 2002 accomplishments in these five areas are identified below. In addition, the General Accounting Office and NRC's Inspector General (IG) identified a number of management challenges, which these actions also address (see Appendix A for a discussion of the management challenges).

Strategic Management of Human Capital

The Nuclear Regulatory Commission recognizes the importance of managing its human capital and has taken steps to address emerging security issues and an aging workforce.

Strategic Alignment

In FY 2001, the NRC IG suggested the need for an agency-wide workforce plan. In FY 2002, the NRC provided a report to OMB, *Strategic Human Capital and Workforce Restructuring Plan: Improving Performance at the Nuclear Regulatory Commission*, which describes the NRC high-level human capital plan. The plan also addresses workforce and organizational structure challenges, and activities being taken to implement the President's Management Agenda initiatives.

The plan describes NRC's commitment to strengthening its workforce planning efforts and the achievement of NRC's strategic human capital management goals. It reflects the continuing efforts to address challenges presented by the external environment and presents strategies that are being implemented to accomplish the NRC's mission.

During FY 2002, the staff presented integrated human capital resource data and information to the Commission for the FY 2004 budget submission. The agency first implemented this approach in FY 2001 as part of its FY 2003 planning, budgeting, and performance management (PBPM) process. This approach provided NRC managers with a forum to discuss human capital needs and recommend strategies to meet them. This also resulted in an agency-wide integrated and coordinated approach to human capital planning and budgeting for the future.

To further strengthen the alignment of planning, budgeting, and performance, the agency is exploring options to restructure Senior Executive Service (SES) performance plans to conform to the President's Management Agenda initiative on budget and performance integration.

Workforce Planning and Deployment

In June 2002, an online skills and competencies strategic workforce planning system was implemented. The system enables managers to specify their skills needs and check available employees' expertise in these skill areas. Managers can view employee skills assessments along with demographic information that includes educational attainment and retirement eligibility. Managers can use this information to devise strategies to ensure that the workforce continues to possess the skills needed to accomplish the NRC's mission.

CHAPTER 2: PROGRAM PERFORMANCE

The NRC's mission-critical skills are in engineering, science (including health physics), mathematics, threat analysis, and information technology. During FY 2002, the NRC collected agency-wide skills data to be used for identifying gaps in needed skills and addressing critical skills shortages through a wide variety of human resource flexibilities.

During FY 2002, the agency continued to support its fellowship and scholarship programs, which are important components of the agency's strategic workforce planning process. NRC attended 22 targeted recruitment events at colleges and universities and participated in 12 minority professional career fairs. This effort identified a significant number of highly qualified and diverse entry-level and intern candidates for technical and administrative positions.

The NRC developed restructuring initiatives for consideration by the Commission, to more clearly align NRC's organizational structure with its human capital goals in FY 2002. Action plans, linked to the agency's strategic workforce planning efforts, were being developed to review systematically our organizational structure. The plans respond to ongoing external and internal changes, and streamline programs and processes to ensure organizational effectiveness.

Talent

During FY 2002, the NRC continued to develop and implement a systematic approach for addressing the agency's human capital needs through a comprehensive strategic workforce planning process. The goal of the process is to ensure the availability of the appropriate staff skills and competencies to fulfill our safety mission; to enhance safeguards and security in

response to the September 11, 2001, terrorist attacks on the United States; and to identify and develop approaches to address potential areas of new regulatory responsibilities.

In FY 2002, the NRC implemented an automated web-based vacancy announcement system that includes online application capability and rating, ranking and referral features. This system is extremely helpful in recruitment efforts and will enable applicants to apply directly to the NRC via the Web. It also expedites the agency's internal selection process by allowing rating officials and managers to conduct the process electronically. The new system has also streamlined the preparation of vacancy announcements and made our human resources services and processes more effective and efficient.

Leadership and Knowledge Management

In anticipation of a growing number of retirements of senior managers over the next several years, the NRC has implemented two leadership competency development programs in order to prepare the next generation of leaders. These programs, the Senior Executive Service (SES) candidate Development Program and the Leadership Potential Program (LPP) select high-performing individuals and train them for future midlevel and senior-level leadership positions. Since 2001, 23 employees have completed the SES Candidate Development Program and 40 employees have completed the LPP for supervisory leadership positions. The agency has successfully placed 21 SES candidate graduates in SES positions and 17 of the 40 people who graduated from the LLP have been placed in supervisory positions. During FY 2002, the agency selected an additional 22 individuals to participate in the SES Candidate Development Program.



ADDRESSING THE PRESIDENT'S MANAGEMENT AGENDA

Performance Culture

Individual performance plans address organizational and program goals. During FY 2002, the NRC worked to better align individual performance plans more closely with agency strategic and performance goals, measures and strategies.

Accountability

The NRC's corporate management strategies, which support the achievement of the agency's strategic goals, provide the overarching framework of the agency's strategic human capital plan.

The NRC is developing an evaluation plan that will employ measures (currently under development) and metrics for each of the strategic human capital goals in order to determine the organization's success in achieving the expected outcomes.

Budget and Performance Integration

The President's Management Agenda has identified a number of initiatives that agencies should address in response to budget and performance integration. For example, over time, agencies should identify high-quality outcome measures, accurately monitor the performance of programs, and begin integrating this information with associated cost. The administration is developing changes that will make budgeting and management in the executive branch more performance oriented and will improve accountability. Ultimately, the administration will encourage agencies to more completely integrate information about costs and program performance in a single oversight process. To address these initiatives, the NRC has pursued and completed a number of actions in FY 2002.

Integrating Planning and Budgeting

The NRC's Planning, Budgeting, and Performance Management (PBPM) process is the fundamental framework for the agency's planning and budgeting. The PBPM process establishes plans that define clear goals to be accomplished and tracks progress during the year to ensure the NRC achieves the desired results. NRC budget accounts are linked to the goals so that the budgetary resources devoted to each goal are clearly established.

The General Accounting Office (GAO) issued a report in January 2002, *Managing for Results—Agency Progress in Linking Performance Plans with Budget and Financial Statements*. The GAO examined whether each agency: (1) linked its performance plans to program activities in its budget, (2) presented funding estimates for expected levels of performance, and (3) clearly indicated how the funding estimates were derived or allocated from the program activities in its budget request. The GAO stated that the "NRC was able to create a clear link between performance and requested funding, and between resources consumed and results."

The GAO also issued a report in November 2002, *Managing for Results: Efforts to Strengthen the Link Between Resources and Results at the Nuclear Regulatory Commission*. In that report, the GAO described how the PBPM process is used to integrate planning and performance information with budget formulation and execution decisions.

During FY 2002, the NRC prepared a draft management directive that lays out the roles and responsibilities of offices and individuals involved in

CHAPTER 2: PROGRAM PERFORMANCE

performance measurement. The management directive will provide guidance to agency employees on performance measurement. The NRC expects to finalize and implement the management directive in FY 2003.

Full Budgetary Cost

Currently, the NRC captures full budgetary costs and program managers receive cost reports that show the full costs of major programs and activities. These reports allow managers to better plan and manage their programs through the budget year. The NRC will continue to refine the integration of outputs, goals, and full costs as outlined in the OMB guidance for the FY 2005 budget.

Program Effectiveness

The President's Management Agenda requires agencies to be able to document program effectiveness. The analysis should show how program outputs and policies affect desired outcomes. The agency should also be able to demonstrate that program results inform budget decisions.

The NRC conducts program evaluations as part of its PBPM process. For example, in FY 2001, the NRC conducted program evaluations of the revised reactor oversight process and the national materials program. These two programs have major impacts on the regulation of reactors and materials licensees. In FY 2002, the NRC continued its ongoing review of its security programs.

In addition, NRC conducts annual meetings of its Program Review Committee to review the annual budget estimates. At these meetings, the Committee examines policy decisions from the previous year in

the context of the NRC's planning and budgetary processes.

Competitive Sourcing

One of the NRC's corporate management strategies is to acquire goods and services efficiently. The agency has continued its strong emphasis on procurement streamlining and innovation as the key to improving the efficiency of the contracting process. In addition, the NRC has established output measures associated with the implementation of the competitive sourcing initiative under the President's Management Agenda, performance-based contracting, and the posting of procurement synopses on the Internet.

Contract management is necessary to ensure that the agency obtains goods and services in an efficient manner consistent with mission needs. It includes the development and implementation of agency-wide contracting policies and procedures, and implementation of the agency's Small Business Program. The primary purpose of the Small Business Program is to ensure that small 8(a), disadvantaged, and women-owned businesses receive a full and fair opportunity to participate in NRC's procurement activities. Contract management also includes the development and application of streamlined procurement processes and adherence to sound business practices in the negotiation, award, administration, and closeout of agency contracts.

In the area of competitive sourcing, the NRC has made significant progress toward achieving the OMB objective of considering a minimum of 15 percent of commercial positions for competitive sourcing by the end of FY 2003. Specifically, the NRC formed an inter-office core team to ensure that competitive

ADDRESSING THE PRESIDENT'S MANAGEMENT AGENDA

sourcing activities are consistent with the agency plan, which was submitted to OMB on December 12, 2001; to provide guidance and assistance to offices in conducting cost comparisons or direct conversion actions; and to ensure accurate and consistent information for both inherently governmental and commercial positions on Federal Activities Inventory Reform (FAIR) Act inventories. Additionally, the NRC has successfully achieved the administration's goal of subjecting at least 5 percent of the commercial inventory under the FAIR Act to public-private competitions or direct conversions in FY 2002.

The NRC continued to implement performance-based contracting for facility management services, data entry, information technology, and other support services to provide vendors with a better understanding of contract requirements. The NRC includes such criteria as measurable performance requirements, quality standards, quality surveillance plans, and provisions for reduction of fee or price when services are not performed. During FY 2002, NRC exceeded the goal of 20 percent eligible service contracting dollars conducted with performance-based contracts.

The NRC's corporate management strategy to provide proactive information management and information technology services encompasses the Governmentwide reform to expand the applications of online procurement and other E-government services and information. Supporting strategies directly address improving the agency's ability to conduct business electronically and providing external stakeholders with access to publicly available information. During FY 2002, the NRC continued to post on the Governmentwide point-of-entry web site all required synopses for acquisitions valued at over \$25,000 and

all associated solicitations. In addition, the agency streamlined its paper-intensive ordering and payment functions through increased use of the purchase card.

Expanded Electronic Government

The NRC has actively pursued implementation of the President's Management Agenda goal of expanded electronic government (E-Gov). During FY 2002, the NRC made important strides in utilizing electronic and technological solutions to provide high-quality service to citizens, while reducing the cost of delivering those services

The NRC is currently participating in 13 of the 24 OMB E-Gov initiatives. The agency is making good progress towards integrating its processes for capital planning and investment control (CPIC), Government Information Security Reform Act (GISRA), and enterprise architecture (EA). The agency has also increased its focus on IT system performance measurement and tracking. The NRC is on track for complying with the Government Paperwork Elimination Act (GPEA).

During FY 2002, the agency emphasized the requirements and benefits of E-Gov to key staff and managers. The NRC held a series of briefings and discussions with agency personnel to communicate the value of the E-Gov initiatives. The agency also designed a guidance, oversight and status reporting structure for agency E-Gov activities in order to monitor its progress in furthering the use of E-Gov.

E-Gov Initiatives

Of the 13 initiatives related to E-Gov, the NRC has made the most progress in E-Rulemaking, E-Records, Integrated Acquisitions, E-Clearance, and E-Authentication. The NRC used E-Clearance at the end of 2002 to provide clearance information to

CHAPTER 2: PROGRAM PERFORMANCE

OPM. The NRC has become recognized as a leader in online rulemaking and E-Records management solutions and has shared best practices with initiative partners. As in the E-Clearance effort, as E-Gov solutions begin to materialize, the NRC will assess the impact of these solutions and, where beneficial, begin implementing them.

Other E-Gov initiative accomplishments during FY 2002 include implementation of an integrated payroll and human resources system; membership in the Regulation Community of Practice (E-Reg CoP); service on the Federal Acquisition Management Information System (FAMIS) project; and continued involvement in the Small Agency Council.

Capital Planning and Investment Control

Management Directive 2.2 documents NRC's CPIC process. All of the NRC's major information technology systems have a business case. The NRC has validated the business cases against new criteria (Exhibit 300) required by OMB. The agency incorporated the new criteria into exhibit preparation guidance and trained staff in its use. During FY 2002, the agency applied this new process to about 60 percent of NRC's IT budget for FY 2004. The NRC will continue to review and adopt OMB guidance in this area, implement changes to NRC CPIC process, and update Management Directive 2.2 when necessary.

Enterprise Architecture (EA)

The NRC has made progress in embracing EA. During FY 2002 the agency refined its EA activities to reflect OMB guidance, hired a Senior Enterprise Architect to further improve our EA activities, established a Senior Management Information Technology Advisory Council, reviewed EA best practices, established a revised

baseline for the NRC's Technical Reference Model, and included EA in a revised IRM Strategic Plan.

During FY 2003, the NRC will focus on strengthening the integration of EA with CPIC to more effectively link business systems to the agency mission. The agency also intends to develop EA strategy documents, such as an EA Revitalization Plan to facilitate progress improvements in EA. One key document in this area will be a revision of Management Directive 2.1, Information Technology Architecture (Enterprise Architecture). Another important effort will be to issue a technology plan.

Government Information Security Reform Act

To improve information security efforts, the NRC hired a senior IT security officer. An FY 2001 self-assessment of IT security identified some corrective action and the agency made these corrections during FY 2002. The NRC published incident response procedures and established a central repository for security documents and an IT security program tracking system to improve its security efforts. The agency also created and implemented internal security measures to support GISRA. In FY 2003, the NRC plans to update the security policies and procedures in Management Directive 12.5, NRC Automated Information Systems Security Program (ISSO); establish online security courses for users and ISSO's; and perform a self-assessment.

Performance Measures

The NRC verified that all major IT systems are operating within 90 percent of the targets for cost, scheduling, and reliability. The NRC FY 2003 Budget Estimates and Performance Plan included output measures for IT security. The agency is increasing its focus



ADDRESSING THE PRESIDENT'S MANAGEMENT AGENDA

on the project control phase of CPIC and will continue to monitor the performance of its major IT systems.

Government Paperwork Elimination Act (GPEA)

The NRC established a GPEA compliance task force during FY 2002 to ensure that it would meet its goal for the GPEA. The NRC completed a survey of its transactions and mapped statute requirements to agency practices to determine which areas need greater attention. The task force will continue to monitor progress monthly. The agency expects to achieve compliance with GPEA requirements by October 2003. (See the following discussion for the Electronic Information Exchange for more information)

Citizen One-Stop Access to the NRC

During FY 2002, the NRC successfully completed the redesign of its external web site to enhance citizen access. New features include media streaming of Commission meetings. In addition, citizens can sign up for electronic information interchange with the Commission, which includes electronic signature capability (See the following discussion for the Electronic Information Exchange for more information).

To enhance public access and public confidence, the new Web site allows access to NRC's public documents in electronic form via the agency's electronic record-keeping system known as ADAMS. Citizens can now access all of NRC's forms on the NRC Website, which includes a single "Contact Us" page covering all major channels for communicating with the agency.

Electronic Information Exchange (EIE)— Minimizing the Burden on Business

The NRC launched the EIE production system during FY 2001. The EIE program is a key component of NRC's E-Gov activities. It provides for the transmission of digitally signed electronic documents to the NRC over the Internet. Information received can be electronically disseminated and loaded directly into the agency's information systems. EIE will also play a major role in enabling the NRC to meet the GPEA requirement to allow the public the option of transacting business with the agency electronically.

In FY 2002, the NRC developed and published a proposed rule and guidance on electronic maintenance and submission of information. This rule will help bring the NRC's communications regulations into compliance with GPEA. It also will expand the number and types of documents that NRC stakeholders and the public can submit electronically.

In FY 2002, the NRC implemented the first version of the High-Level Waste Electronic Hearing Docket (HLW-EHD), which is the official hearing docket of the NRC for DOE's license application to operate a nuclear waste repository at Yucca Mountain. The HLW-EHD was established pursuant to the requirements of 10 CFR 2.1.1013, to receive electronic filings via EIE from parties to the proceedings.

In addition, the NRC established the Licensing Support Network (LSN), which has been operational since October 18, 2001 although no party or potential party has, as yet, made its relevant materials available through the system. The LSN provides shared document discovery and facilitates electronic motions practice for the adjudicatory hearing on DOE's

CHAPTER 2: PROGRAM PERFORMANCE

license application to construct a HLW repository at Yucca Mountain. The LSN is intended to benefit the repository licensing proceeding by making all parties' relevant documents publicly accessible before docketing, ultimately providing the parties with significant information regarding the proposed repository that they can provide to the electronic and publicly accessible docket through a fully electronic filing process.

Productivity Improvements

During FY 2002, the NRC implemented a new seat management contract. This is a performance-based contract that reflects industry best practices in the effective management of IT resources. The contract includes replacement, maintenance, and support of agency desktops, phase-in of desktop support for regions and resident inspector site expansion sites, network printers, and infrastructure.

In FY 2002, NRC relocated all of its archived records from a commercial contractor's site to the National Archives and Record Administration (NARA) Federal Records Center. Relocating the records will allow the NRC to save on records storage and related services. Before FY 2002, the NARA was unable to provide the full services required for managing active archived records. As a result, the NRC had retained the services of a commercial contractor to process and store active archived records.

To be effective and efficient in its IT/IM program, The NRC has established several output measures that gauge its success in providing the support services required by NRC personnel. For example, the agency established measures for the availability of key infrastructure services and of agency network servers for NRC staff. In FY 2002, the NRC achieved a

result of 99.6 percent and 99.8 percent respectively, in these two measures.

Improved Financial Management

Financial Management Systems

During FY 2002, the NRC completed several projects designed to meet Federal financial management system requirements and applicable Federal accounting standards as reported by the agency head. The PeopleSoft Human Resources Management System (HRMS) was implemented in November 2001. This facilitated closure of a prior year material weakness and system deficiency associated with accounting for internal use software. The agency also moved its core accounting system needs to the Department of Interior's National Business Center. Lastly, the agency implemented a new cost accounting and reporting system.

During FY 2003, the agency will begin efforts to upgrade the NRC's license fee bill generator system and move to the next version of PeopleSoft software.

Accurate and Timely Financial Information

The NRC's ongoing program to supply agency managers with monthly accounting and budget execution reports and meet external reporting requirements resulted in the following accomplishments:

- ▶ The NRC received an unqualified opinion on its financial statements.
- ▶ The NRC received the Association of Government Accountant's Certificate of Excellence in Accountability Reporting award for its FY 2001 Performance and Accountability Report.

ADDRESSING THE PRESIDENT'S MANAGEMENT AGENDA

- The agency published standard cost management ratios in the agency's monthly Budget Execution Report for agency managers.
- The agency provided core accounting system reports electronically on the users' desktop computers to reduce costs and improve timeliness.
- The NRC's external reporting activities met Treasury's standards for timeliness, reconciliation, reliability, and consistency.
- The agency issued quarterly cost management reports to agency managers for FY 2002.

Integrated Financial and Performance Management Systems for Day-to-Day Operations.

Core accounting is integrated with HRMS (i.e., personnel, payroll, and labor reporting) and fee collection systems. The agency also provides managers with desktop electronic access to daily financial data and to periodic summarized reports. Senior managers receive monthly budget execution reports, agency standard cost ratios, and performance data. In the current year, the agency deployed the first phase of a cost accounting reporting application.

Annual Financial Statements and Internal Controls

The NRC began preparing interim financial statements one year ahead of OMB's requirements. A complete set of principal statements and footnotes for the period ending March 31, 2002, were submitted in a timely fashion. The agency also made substantial progress in addressing the material weakness associated with incomplete implementation of the accounting standard for managerial cost accounting. Corrective action included using data from the cost accounting system to

prepare the statement of net cost and issuing quarterly cost management reports to agency managers.

The agency received an unqualified audit opinion on its annual financial statements and had one material internal control weakness reported by its auditors. When the financial statement audit report is issued in January 2003, an action plan will be established to correct any remaining issues.

Strategies for submitting *the FY 2002 Performance and Accountability Report* by February 1, 2003, included:

- Establishment of an integrated schedule for preparing the performance report, financial statements, and completing the audit in a timely manner;
- Preparation of all principal statements and footnotes for the period ending March 31;
- Preparation of principal statements for the quarter ended June 30; and
- Establishment a target date of December 20, 2002, for completing the audit of the FY 2002 financial statements.

For the FY 2002 financial statements included in the Performance and Accountability Report, the agency incorporated quarterly financial statements into the FY 2002 annual audit process and is in the process of establishing an internal performance and accountability report acceleration committee to meet the November 15, 2004, OMB due date.

DATA SOURCES AND QUALITY

The NRC's data collection and analysis methods are largely driven by the regulatory mandate entrusted to it by Congress. The NRC's mission is to regulate the Nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, to promote the common defense and security, and to protect the environment. Section 208 of the Energy Reorganization Act of 1974, as amended, requires the NRC to inform Congress of incidents or events that the Commission determines to be significant from the standpoint of public health and safety. The abnormal occurrence (AO) criteria were developed by NRC in order to comply with the legislative intent of the Act to determine which events should be considered significant. Events that meet the AO criteria are included in an annual Report to Congress on Abnormal Occurrences (NUREG-0090).

Most of the data used to measure the strategic goals and the performance goals focused on maintaining safety are attained or derived from the NRC's AO data and reports submitted by NRC licensees and Agreement States.

One important characteristic of the data used in this report is that the data normally originate from external sources such as Agreement States and NRC licensees. The NRC believes these data to be credible because (1) the information needed from external sources is required to be reported to the NRC by regulations, (2) the NRC maintains an aggressive inspection program that, among other activities, audits licensees programs and evaluates Agreement State programs to determine that information is being

reported as required by the regulations, and (3) there are agency procedures for reviewing and evaluating licensees. The NRC employs database systems that support this process, including the Sequence Coding and Search System (SCSS), the Accident Sequence Precursor (ASP) Database, the Nuclear Materials Events Database (NMED), and the Radiation Exposure Information Report System (REIRS).

The NRC has established procedures for the systematic review and evaluation of events reported by NRC licensees and Agreement State licensees. The objective of the review is to identify events that are significant from the standpoint of public health and safety based on criteria that include specific thresholds. The NRC uses a number of sources to determine the reliability and the technical accuracy of event information reported to NRC. Such sources include: (1) the NRC licensee reports themselves, which are carefully analyzed, (2) NRC inspection reports, (3) Agreement State reports, (4) periodic review of Agreement State regulatory programs, (5) NRC consultant/contractor reports, and (6) U.S. Department of Energy Operating Experience Weekly Summaries. In addition, daily interaction and exchange of event information occurs between headquarters and regional offices, and periodic conference calls are placed between headquarters, the region, and Agreement States to discuss event information. Events identified that meet the abnormal occurrence criteria are validated and verified by all applicable NRC headquarters program offices, regional offices, and agency management prior to submission to Congress.



DATA SOURCES AND QUALITY

Data Security

Data security is provided by the agency's computer security program. This program provides administrative, technical, and physical security measures for the protection of the agency's information, automated information systems, and information technology infrastructure. This includes special safeguards to protect classified information, unclassified safeguards information, and sensitive unclassified information that is processed, stored, or produced on certain types of automated information systems.

Improvements in Performance Data

The NRC analyzed its data verification procedures for all of its performance measures during FY 2001. The analysis consisted of an evaluation of the data collection, data analysis, and reporting procedures for completeness, accuracy, consistency, and timeliness. The analysis also included an evaluation of NRC management controls, which ensure that the reported data are valid and reliable. As a result, the NRC believes that its performance data are valid and reliable.

Following the analysis of data verification procedures, the development of a Management Directive for our performance management system was begun during FY 2002. The Management Directive establishes responsibilities within the agency for our performance measurement system and standards for performance goals and measures. This directive will provide guidance to agency personnel on procedures to follow in using the performance measurement system.

A more complete discussion of validation and verification for NRC measures and metrics is included in the NRC FY 2002 Budget Estimates and Performance Plan (NUREG-1100, Vol. 17) submitted to Congress.

An extensive explanation of data verification and validation procedures for each performance measure is included with the Performance Plan, in Appendix IV.

The NRC makes performance data information accessible to citizens through our web page. For example, if a citizen wanted to verify and/or know more about the licensee event reports, which are the raw data for most of our performance measures, they can be retrieved through our Agencywide Documents Access and Management System (ADAMS) under "licensee event report," which is available on the NRC Web site at www.nrc.gov/reading-rm/adams.html.