

U.S. NUCLEAR REGULATORY COMMISSION



# Strategic Plan

FY 2004–FY 2009



## Mission

**License and regulate the Nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment.**

## Vision

**Excellence in regulating the safe and secure use and management of radioactive materials for the public good.**

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## A MESSAGE FROM THE CHAIRMAN



From left to right, Commissioner Jeffrey S. Merrifield, Chairman Nils J. Diaz, and Commissioner Edward McGaffigan, Jr.

**M**y fellow Commissioners and I are pleased to present the U.S. Nuclear Regulatory Commission's Strategic Plan for Fiscal Years 2004 to 2009. The plan describes how we intend to accomplish our mission. In particular, it establishes our strategic direction by defining the agency vision, goals, outcomes, and strategies that we intend to pursue.

The new Strategic Plan incorporates a number of revisions in order to address a changing environment. The events of September 11, 2001, brought to this country a new recognition of the importance of physical security and emergency preparedness. We recognize that safety, security, and emergency preparedness are integrated activities, and we have revised the plan to reflect this new reality. The Strategic Plan for Fiscal Years 2004–2009 gives prominence to the value of openness in our regulatory processes as essential for ensuring that the NRC remains a strong, fair, predictable, and credible regulator. We continue to believe that our actions must be effective, efficient, realistic, and timely. Management excellence is also essential for successful implementation of our mission and goals.

In developing our Strategic Plan, we benefitted from input from the public, those we regulate, and those interested in the effectiveness of regulation. We thank all our stakeholders who shaped the Strategic Plan, especially the NRC staff that has worked diligently to produce a Strategic Plan that we believe is comprehensive, clear, and can be readily understood. The Strategic Plan for 2004–2009 will serve as a guide for how we will discharge our responsibilities to serve the American public.





NRC Commissioners participating in a public meeting on nuclear safety.

## About the NRC

The U.S. Nuclear Regulatory Commission (NRC or the agency) was established by the Energy Reorganization Act of 1974. The agency began operations in 1975. The U.S. Energy Reorganization Act of 1974 separated the Atomic Energy Commission's regulatory functions from its military and promotional functions and assigned the regulatory functions to the NRC. The NRC thus inherited part of the Atomic Energy Commission's mission under the Atomic Energy Act of 1954: to regulate the civilian commercial, industrial, academic, and medical uses of nuclear materials in order to protect the public health and safety and promote the common defense and security. In so doing, Congress defined the NRC's mission to enable the Nation to use radioactive materials for beneficial civilian purposes while ensuring that public health and safety, common defense and security, and the environment are protected.

The NRC's scope of responsibility includes regulation of commercial nuclear power plants; research, test, and training reactors; nuclear fuel cycle facilities (also called fuel cycle facilities); medical, academic, and industrial uses of radioactive materials; and the transport, storage, and disposal of radioactive materials and wastes. The NRC's regulations are designed to protect the public and occupational workers from radiation hazards in those industries using radioactive materials.

The NRC is headed by five Commissioners appointed by the President of the United States, with the advice and consent of the U.S. Senate, to serve 5-year terms. The President designates one of the Commissioners to serve as Chairman. Under the leadership and policy direction of the Chairman and Commissioners, the NRC issues licenses and oversees licensees for civilian uses of radioactive materials:

- 104 nuclear power reactors
- 36 non-power (research and test) reactors
- 47 uranium recovery sites
- 9 major fuel cycle facilities
- Approximately 4,500 medical, industrial, government, and academic materials licensees



The NRC has responsibility for regulatory activities related to radiation protection and nuclear safety for nuclear facilities and for protection of the common defense and security related to uses of radioactive materials. The NRC also has a role in overseeing certain international uses of radioactive materials. For example, the NRC issues and oversees licenses for the import and export of radioactive materials, and participates in multilateral safeguards and security inspections. The agency works closely with its international counterparts in these areas.

The McGuire Nuclear Power Plant at Charlotte, NC.

In addition, 33 States have signed agreements with the NRC under which they assume regulatory responsibility for the use of certain quantities of radioactive materials for civilian purposes in their respective States. These Agreement States implement State regulations that are compatible with NRC regulations for approximately 80 percent of the more than 17,000 radioactive materials licensees in the United States. The NRC works closely with Agreement States to ensure a sound and consistent regulatory framework.

The NRC, the Agreement States, and those who hold licenses to use radioactive materials share a common responsibility to protect public health and safety and the environment in the United States. Because licensees actually use radioactive materials, they have the ultimate responsibility to handle and use the materials.

## The Changing Regulatory Environment

The many industries that utilize radioactive materials are experiencing change, particularly in the areas of nuclear safety, security and emergency preparedness, risk-informed performance-based regulations, energy production, and waste management. In the next 5 years the Nation is likely to see the following changes occur:

- NRC strategic initiatives will include significant emphasis on strengthening the interrelationship among safety, security, and emergency preparedness.
- The majority of operating nuclear power plants will have applied for license renewal to help meet the Nation's demand for energy production.
- The Department of Energy will submit an application to construct and operate the Nation's high-level radioactive waste repository.
- Increasing quantities of radioactive waste may be transported and held in interim storage or permanent disposal sites.
- The nuclear power industry will show a growing interest in licensing and constructing new nuclear power plants and fuel cycle facilities (for example, gas centrifuge facilities and a mixed oxide fuel facility) to meet the Nation's demand for energy production.
- The NRC, Agreement States, and licensees will continue to devote increasing attention to the security of radioactive materials and facilities, and the NRC will continue its nuclear nonproliferation activities.
- The NRC will continue to see increased requirements for coordination with a wide array of Federal, State, and local agencies related to homeland security and emergency planning.
- The number of Agreement States will increase, as will the numbers of medical, academic, and industrial entities using radioactive materials under the oversight of the Agreement States.
- The regulatory climate is expected to adjust to both internal and external factors such as use of risk-informed and, as appropriate, performance-based regulations.

The backdrop to these industry-specific changes is elevated security and heightened public concern about safety. The NRC recognizes that recent issues, ranging from the potential for terrorist activities to public concern about the adequacy of emergency preparedness plans for areas surrounding nuclear facilities, have contributed to building public confidence through increased public dialogue about the uses of radioactive materials. In this regard the NRC is committed to sharing openly its information and decision-making processes with the public, consistent with the law, and is committed to implementing regulatory processes that facilitate stakeholder involvement. While the NRC will continue to make as much information as possible available to the public, the agency will withhold a relatively small amount of information that could assist potential terrorists.

The manner in which the NRC regulates is also evolving. As the agency continues to learn from operational experience and develops more effective ways of assessing risks and using risk-informed and performance-based approaches founded in “realistic conservatism,” it is better able to make appropriate safety decisions and to better allocate resources to areas where they will have the greatest positive effect. The NRC continues to seek improved effectiveness and efficiency. Toward that end, the agency is taking on specific management challenges identified through ongoing program evaluations.

With respect to all facilities licensed by the NRC and Agreement States, the NRC is increasingly approaching safety, security, and emergency preparedness in an integrated manner. Safety requirements for structures, systems, components, programs, and people all contribute to both safety and security by making accidents unlikely and mitigation capability strong. In addition, safety and security requirements together make these facilities uninviting targets.

Ensuring the protection of public health and safety and the environment has always been, and continues to be, the NRC’s primary goal. Accordingly, safety is the most important consideration in evaluating license applications, licensee performance, and proposed changes to the regulatory framework. Because security is essential to the NRC’s mission and linked with safety, it is also an important consideration in the agency’s actions. The agency continuously works to improve its effectiveness and efficiency without conflicting with or undermining its safety and security mission.

All of these trends and issues have been considered in developing this Strategic Plan for Fiscal Years 2004–2009.

## Organization of the Plan

Over the next several years, the NRC will focus on a single strategic objective and five goals that support that objective, as described in detail in subsequent sections of this plan.

Each section begins with an appropriate goal, strategic outcomes, and a discussion of the evolving issues affecting that particular goal. In each case, this discussion is followed by a description of the strategies and significant means by which the agency will achieve the given goal. The NRC will assess its progress through performance measures and metrics (used to gauge program performance and to verify that key program outputs and outcomes are met).

**Appendix A** expands on the discussion of the agency’s strategic objective and goals by discussing key external factors that could affect the agency’s ability to effectively execute this Strategic Plan.

**Appendix B** describes the schedule of planned program evaluations that the agency will use to adjust and refine its performance.

**Appendix C** is a glossary of terms used in the plan.

Our strategic objective, goals, and strategic outcomes follow.

## Strategic Objective

Enable the use and management of radioactive materials and nuclear fuels for beneficial civilian purposes in a manner that protects public health and safety and the environment, promotes the security of our nation, and provides for regulatory actions that are open, effective, efficient, realistic, and timely.

## Goals

- I. **Safety:** Ensure protection of public health and safety and the environment.
- II. **Security:** Ensure the secure use and management of radioactive materials.
- III. **Openness:** Ensure openness in our regulatory process.
- IV. **Effectiveness:** Ensure that NRC actions are effective, efficient, realistic, and timely.
- V. **Management:** Ensure excellence in agency management to carry out the NRC’s strategic objective.

## Strategic Outcomes

- No nuclear reactor accidents.<sup>1</sup>
- No inadvertent criticality events.
- No acute radiation exposures resulting in fatalities.
- No releases of radioactive materials that result in significant radiation exposures.<sup>2</sup>
- No releases of radioactive materials that cause significant adverse environmental impacts.<sup>3</sup>
- No instances where licensed radioactive materials are used domestically in a manner hostile to the security of the United States.
- Stakeholders are informed and involved in NRC processes as appropriate.
- No significant licensing or regulatory impediments to the safe and beneficial uses of radioactive materials.
- Continuous improvement in NRC’s leadership and management effectiveness in delivering the mission.
- A diverse, skilled workforce and an infrastructure that fully support the agency’s mission and goals.





An NRC inspector at a commercial nuclear power plant.

## I. SAFETY

### GOAL

Ensure Protection of Public Health and Safety and the Environment.

### STRATEGIC OUTCOMES

- No nuclear reactor accidents.
- No inadvertent criticality events.
- No acute radiation exposures resulting in fatalities.
- No releases of radioactive materials that result in significant radiation exposures.
- No releases of radioactive materials that cause significant adverse environmental impacts.

### DISCUSSION

The NRC's primary goal is to regulate the safe uses of radioactive materials for civilian purposes to ensure the protection of public health and safety and the environment. In response to anticipated developments in the nuclear arena over the next several years, the NRC will place significant emphasis on strengthening the interrelationship among safety, security, and emergency preparedness.

The NRC achieves its safety goal by licensing individuals and organizations to use radioactive materials for beneficial civilian purposes and then ensuring that the performance of these licensees is at or above acceptable safety levels. In particular, we maintain vigilance over safety performance through ongoing licensing reviews and inspections, and expanded oversight. We also use enforcement actions for significant deficiencies, including issuing orders for corrective action, issuing shutdown orders, imposing civil penalties and/or criminal prosecution, or, when appropriate, suspending or revoking a license.

The NRC's regulatory actions apply to all licensees whether they use radioactive materials for power generation, reactor fuel production, medical therapies, industrial processes, research, or waste storage

and disposal. The agency's regulatory activities are applied in a graded manner consistent with the risk presented by specific uses, incorporating sound science and operating experience to ensure that licensees have adequate safety margins. In carrying out its safety mission, the NRC conducts activities and takes the full range of actions necessary to ensure that a licensee's performance does not fall below acceptable levels.

Future challenges to the agency's regulatory climate are expected to require adjustment to both internal and external factors, such as the use of risk-informed and, as appropriate, performance-based regulations. Some important considerations include materials degradation at nuclear power plants; high-level waste transport, storage, and disposal; new and evolving technologies; and continual review of ongoing operational experience.

The importance of materials degradation issues is highlighted by recent experiences, including a cavity in a reactor vessel head that the licensee discovered while the facility was shut down. Because of the lessons the NRC learned from these events, the agency increased inspection activities and expanded research into materials degradation issues. Another materials degradation concern is that the majority of operating nuclear power plants are expected to apply for 20-year extensions of their licenses. The primary consideration in the license renewal process is to ensure that the effects of aging are monitored, managed, and controlled such that safety is ensured for the renewal period. License renewal applications for aging plants call for analysis of the robustness, longevity, and continued performance of nuclear power plant components such as electric cabling, instruments and controls, piping, and containment structures.

The NRC faces a major challenge as the Department of Energy prepares an application to establish the Nation's first repository for high-level radioactive waste at Yucca Mountain, Nevada. The NRC's review of this application will require evaluation of

a wide range of technical and scientific analyses and the resolution of various regulatory issues. A related issue may require that safe interim storage capacity must be made available until a repository is licensed and ready to receive high-level waste. Toward that end, the NRC regulates various options for interim storage, including spent fuel pools onsite and dry casks at independent spent fuel storage installations. In addition, the NRC must ensure the safety of spent fuel transportation casks. These casks will be evaluated, tested, and certified as capable of transporting spent fuel from reactor sites or other storage facilities to the national repository.

One challenge the NRC is addressing involves the new reactor designs being submitted for review and possible licensing by the NRC. These next-generation designs require detailed analysis of their vulnerability to accidents and security compromises, as well as development of inspections, tests, analyses, and acceptance criteria for their construction. The NRC is evaluating commercial gas centrifuge facilities that utilize new methods of enriching nuclear fuel for operation in the United States. The NRC is reviewing a license application for a mixed oxide fuel facility that would use plutonium salvaged from decommissioned nuclear weapons to fabricate fuel assemblies for nuclear power plants as a technique for reducing existing quantities of weapons-usable materials.

A final area of future consideration for the NRC will arise as the agency continually reviews domestic and international operational experience to help identify potential new licensee-specific or generic safety issues. It is the responsibility of the NRC to ensure that its licensees use radioactive materials safely. The NRC employs a multi-faceted regulatory approach to safety that includes the following activities:

- Develop and update risk-informed and performance-based standards, as appropriate, and Federal regulations to enable the safe use of radioactive materials, using the

“defense-in-depth” principles and appropriately conservative and realistic practices that provide an acceptable margin of safety.

- License individuals and organizations that intend to use radioactive materials for safe and beneficial civilian purposes.
- Maintain ongoing and consistent oversight of licensees, which includes inspection, enforcement, and incident response activities, to ensure that they are conforming to the applicable regulations and the conditions of their licenses to ensure safety, and to provide timely and appropriate event assessment and response.

The NRC recognizes that close cooperation among Federal agencies, State authorities, and local and Indian Tribal governments will lead to the most effective regulation. Therefore, the NRC works with other Federal agencies, such as the Environmental Protection Agency, the Occupational Safety and Health Administration, the Food and Drug Administration, the Departments of Energy, Transportation, Justice, and Homeland Security, as well as State, local, and Tribal authorities to ensure appropriate coordination of safety and security measures at nuclear facilities and the protection of the safety and rights of occupational workers.

Nuclear safety is, moreover, a global issue. As a result, the NRC closely cooperates with its counterpart foreign regulatory bodies and international organizations, such as the International Atomic Energy Agency and the Nuclear Energy Agency, to share information, resources, best practices, and lessons learned from operating experience and to influence the development of standards and guidance consistent with U.S. objectives.

### STRATEGIES AND MEANS

The NRC will employ the following strategies to ensure protection of public health and safety and the environment.

## ■ SAFETY STRATEGIES

- (1) Develop, maintain, and implement licensing and regulatory programs for reactors, fuel facilities, materials users, spent fuel management, decommissioning sites, and waste-related activities to protect public health, safety, and the environment.
- (2) Develop systematic improvements in NRC's regulatory program to ensure the safe use and management of radioactive materials.
- (3) Use sound science and state-of-the-art methods to establish risk-informed and, where appropriate, performance-based regulations.
- (4) Utilize regulatory programs and applied research effectively to anticipate and resolve safety issues.
- (5) Evaluate and utilize domestic and international operational experience and events to enhance decision-making.
- (6) Conduct NRC safety oversight programs, including inspections and enforcement activities, to monitor licensee performance.

## ■ MEANS TO SUPPORT SAFETY STRATEGIES

The NRC conducts a number of programs and initiatives to ensure protection of public health, safety, and the environment. The major programs include licensing and inspection oversight programs, including key program activities such as the incident response program, the Agreement States program, and the ongoing research program. Activities to be conducted in these programs during this strategic planning period include the following examples:

- Review licensing requests (e.g., applications, amendments, renewals, decommissioning, termination, and reactor operator) to confirm that they are consistent with regulatory requirements. [Supports Strategies 1 and 3]
- Implement, review, and refine the Reactor Oversight Process, the main program for overseeing nuclear power plant operation, to better identify significant performance issues

and to ensure that licensees take appropriate actions to maintain acceptable safety performance. [Supports Strategies 3 and 6]

- Maintain trained inspectors at the nuclear power reactor and larger fuel cycle sites (resident inspectors), in the NRC's four regional offices (regional inspectors), and at the agency's Headquarters. The resident inspectors oversee licensees' day-to-day activities, while region-based and Headquarters inspectors perform individual and team inspections in specialized areas related to nuclear reactor safety and non-reactor inspections (e.g., medical, materials uses, and radioactive waste management). [Supports Strategies 1, 3, and 6]
- Conduct emergency preparedness exercises that involve a wide array of Federal, State, and local agencies and emergency response personnel, and use cooperative intergovernmental relationships to balance and inform national response capabilities. [Supports Strategies 3 and 6]
- Maintain the readiness and capabilities of the NRC Operations Center and Regional Response Centers, which coordinate and monitor the agency's response to incidents and reportable conditions and licensees' actions to ensure safety at their facilities. [Supports Strategy 6]
- Conduct a program for the identification and resolution of reactor, materials, and waste generic issues. [Supports Strategies 2, 3, and 4]
- Establish and maintain stable and predictable regulatory programs or policies for licensing and inspecting new nuclear plants, including review of early site permits, design certifications, and combined licenses. [Supports Strategies 1 and 6]
- Foster an environment in which safety issues can be openly identified without fear of retribution. [Supports Strategies 1, 4, and 6]

- Conduct research programs to identify, lead, and/or sponsor reviews that support the resolution of ongoing and future safety issues, including providing independent information and expertise needed to support the NRC's decision-making process. [Supports Strategies 1, 2, 3, 4, and 5]
- Conduct pre-licensing consultation and begin regulatory activity when the expected application for the Yucca Mountain repository is received. [Supports Strategies 1, 2, and 3]
- Complete technical reviews of new spent fuel dry storage systems to ensure that they will be safe and secure for use at any licensed spent fuel storage facility. [Supports Strategies 1 and 3]
- Conduct testing of spent fuel transportation casks under accident conditions to verify designs and modeling. [Supports Strategy 1]
- Conduct periodic reviews of Agreement State programs to ensure that they are adequate to protect health and safety and compatible with the NRC's program. [Supports Strategies 2, 3, and 6]
- Work closely with the Agreement States to develop consistent, risk-informed processes to review event information and identify safety issues for materials licensees. [Supports Strategies 2, 3, and 6]
- Use the information from integrated safety analyses to begin using a graded approach to monitoring and controlling activities at fuel fabrication facilities. The NRC will use the lessons learned from these analyses to develop more risk-informed oversight programs. [Supports Strategies 2 and 3]

- Assess the key issues affecting the safe management of civilian low-level waste disposal to ensure that potential disruption in access to the three licensed disposal sites does not adversely affect licensees' ability to operate safely and decommission their plants safely. [Supports Strategies 2 and 3]
- Evaluate the risk significance of domestic and international operational events and trends in order to improve NRC programs. [Supports Strategies 2 and 5]
- Develop consensus standards with professional societies and standard setting organizations to be used by the nuclear industry and with international organizations to incorporate improvements into NRC regulations. [Supports Strategies 2 and 5]
- Work with international counterparts to exchange information, expertise, operating experiences, and ongoing research to recognize and respond to emerging technical issues and to promote best practices. Participate in the development and evaluation of international standards to determine whether substantial safety improvements can be identified and incorporated domestically. [Supports Strategies 2 and 5]





Dry cask storage for nuclear waste.

## II. SECURITY

### GOAL

Ensure the Secure Use and Management of Radioactive Materials

### STRATEGIC OUTCOME

- No instances where licensed radioactive materials are used domestically in a manner hostile to the security of the United States.

### DISCUSSION

The primary challenge facing the NRC in the coming years is to emerge from the period of uncertainty in post-September 11 security requirements; determine what long-term security provisions are necessary; and revise its regulations, orders, and internal procedures as necessary to ensure public health and safety and the common defense and security in an elevated threat environment. In particular, the NRC will focus its efforts on the following activities:

- Assure the continuing validity of the NRC design-basis threats.
- Complete the identification of vulnerabilities and mitigating strategies at licensed facilities.
- Revise requirements to provide additional protection where needed.
- Develop improved methods of communicating sensitive information to licensees.
- Enhance controls on high-risk radiation sources.
- Develop more formal, long-term relationships with Federal, State, and local organizations with shared responsibilities for protecting nuclear facilities and activities and responding to incidents.

The NRC is being called upon to expand its role in international activities related to the security of

radioactive materials and nuclear facilities. The agency participates in the formulation of foreign policy guidance and shares with the Department of Energy the responsibility for providing international assistance in nuclear security and safeguards. The agency also reviews applications and issues import and export licenses for nuclear materials and equipment. The NRC's involvement with the International Atomic Energy Agency on nuclear safeguards, non-proliferation, and international regulatory standards is also being affected.

### STRATEGIES AND MEANS

The NRC will employ the following strategies to ensure the secure use and management of radioactive materials.

### SECURITY STRATEGIES

- (1) Use relevant intelligence information and vulnerability analyses to determine realistic and practical security requirements and mitigation measures.
- (2) Conduct effective oversight activities and exercises to evaluate licensee security performance.
- (3) Enhance the handling and storage of sensitive security and other pertinent information and the communication of such information to licensees and Federal, State, and local partners.
- (4) Support interagency efforts to develop an integrated approach to the security of nuclear facilities and radioactive materials that supplements licensee efforts with appropriate Federal, State, and local government assets.
- (5) Use a risk-informed, graded approach to establish appropriate regulatory controls for the possession, handling, import, export, and transshipment of radioactive materials.

- (6) Coordinate with Federal and international counterparts to provide appropriate security and control to prevent the proliferation of special nuclear materials and nuclear technology and to reduce the potential for harmful use of high-risk radioactive material.

### MEANS TO SUPPORT SECURITY STRATEGIES

The NRC conducts a number of programs and initiatives to ensure the secure use and management of radioactive materials, including the following examples:

- Conduct inspections to assess licensees' security performance. The NRC will conduct follow-up reviews, inspections, or investigations as needed when security problems are identified. [Supports Strategies 2, 5, and 6]
- Increase the frequency of conducting safeguards performance evaluations at applicable nuclear facilities involving Federal, State, and local law enforcement and emergency planning officials. The NRC will increase the use of state-of-the-art technology to enhance the realism and effectiveness of exercises. The NRC's program will ensure that the agency has current information on licensees' security programs and their ability to protect against the design-basis threat. [Supports Strategies 1, 2, and 4]
- Complete vulnerability assessments and determine the consequences of a range of threats against existing safety, safeguards, and security requirements. The NRC will share its results with Federal partners to support an integrated national posture for protection of the Nation's critical infrastructure. [Supports Strategies 1 and 4]
- Work with the Homeland Security Council, the Department of Homeland Security, and the intelligence community to define, devel-

op, and implement integrated security response plans and a National Response Plan that incorporates Federal, State, and local government assets. [Supports Strategies 4 and 6]

- Work with States on security measures related to NRC- and State-licensed facilities and activities within their borders. [Supports Strategy 4]
- Assess the threat environment to maintain an adequate regulatory framework, utilizing new information from domestic research and cooperative research programs with international partners. [Supports Strategies 1, 3, 4, 5, and 6]
- Collaborate with the Department of Energy and other agencies to develop and implement a national registry of radioactive sources of concern and establish or improve the controls on high-risk radioactive materials to prevent their harmful use. [Supports Strategies 1, 4, and 5]
- Continue support and active involvement in international security activities, including support of International Atomic Energy Agency nonproliferation initiatives and bilateral physical security inspections of special nuclear materials that originate in the United States. [Supports Strategy 6]
- Identify and obtain access to critical electronic channels of security information to ensure that the NRC and its licensees maintain a current awareness of potential threats to licensed facilities and activities. [Supports Strategies 1 and 3]
- Identify and develop key information technology investments that will enhance the storage, handling, and communication of sensitive security information both within and external to the agency. [Supports Strategy 3]



Public meeting on reactor license renewal.

### III. OPENNESS

#### GOAL

Ensure Openness in Our Regulatory Process

#### STRATEGIC OUTCOME

- Stakeholders are informed and involved in NRC processes as appropriate.

#### DISCUSSION

The NRC views nuclear regulation as the public's business and, as such, it should be transacted openly and candidly in order to maintain the public's confidence. The goal to ensure openness explicitly recognizes that the public must be informed about, and have a reasonable opportunity to participate meaningfully in, the NRC's regulatory processes.

Over the next several years, the public's interest in the safety and security of nuclear facilities and transportation of nuclear waste is expected to increase because of emerging issues. In particular, these issues include the anticipated license application from the Department of Energy for a high-level radioactive waste repository at Yucca Mountain, the potential increase in the number of spent nuclear fuel shipments, the increase in the number of applications to extend the operating life of reactors, applications for a variety of fuel cycle facilities, and possible submittal of applications for reactor facilities.

As a result of the terrorist attacks on September 11, 2001, both security and emergency planning issues have become increasingly important to both the public and government officials. The NRC must, therefore, concentrate its efforts on assuring the public that its rigorous oversight and "defense-in-depth" approach ensures that the public is adequately protected, and that emergency plans surrounding the facility are well conceived and will work.

In light of increased terrorist activity worldwide, the agency has had to reexamine its traditional practice

of releasing almost all documents to the public. While most important safety information would not be useful to potential terrorists and can be shared with the public, that is not true for an increasing amount of security information. The NRC will adopt policies relating to sensitive security information consistent with those at the Department of Homeland Security and other agencies. Although the NRC will withhold a relatively small amount of information that could assist potential terrorists, the agency will continue to make as much information as possible available to the public.

The focus on security has emerged at a time of renewed interest in nuclear power. Some utilities are applying to the NRC for early site permits for new reactors, and existing plants are extending their licenses so they can operate for an additional 20 years. As the NRC processes these requests, it will need to address public concerns about vulnerability to many different types of terrorist attacks without disclosing information that could aid terrorists.

The NRC believes in the importance of transparency in its communications, as well as early and meaningful public involvement in the regulatory process. The agency is committed to keeping the public informed and believes that a responsible and effective regulatory process includes an involved public that is well informed.

#### STRATEGIES AND MEANS

The NRC will employ the following strategies to ensure openness in its regulatory processes.

#### OPENNESS STRATEGIES

- Provide accurate and timely information to the public about the uses of and risks associated with radioactive materials.
- Enhance the awareness of the NRC's independent role in protecting public health and safety and the environment.

- Provide accurate and timely information about the safety performance of the licensees regulated by the NRC.
- Provide a fair and timely process to allow public involvement in NRC decision-making in matters not involving sensitive unclassified, safeguards, classified, or proprietary information.
- Provide a fair and timely process to allow authorized (appropriately cleared with a need to know) stakeholders involvement in NRC decision-making in matters involving sensitive unclassified, safeguards, classified, or proprietary information.
- Obtain early public involvement on issues most likely to generate substantial interest and promote two-way communication to enhance public confidence in the NRC's regulatory processes.

#### MEANS TO SUPPORT OPENNESS STRATEGIES

The NRC conducts a number of programs and initiatives to ensure openness in the agency's regulatory process. Activities to be conducted during this strategic planning period include the following examples:

- Enhance the NRC's communications both within the agency and with the public, the media, and Congress. [Supports Strategies 1, 2, 3, 4, 5, and 6]
- Actively engage the public, particularly potentially affected local individuals, before actions are taken. [Supports Strategies 1, 4, and 6]
- Host public meetings at NRC Headquarters, in Nevada, and along major transportation corridors regarding the proposed high-level radioactive waste repository at Yucca Mountain, including workshops to assist in

furthering an understanding of the NRC's regulatory role. [Supports Strategy 6]

- Implement and maintain the high-level waste Licensing Support Network, a system that stores documents related to the high-level radioactive waste repository, to provide an effective means to make such documents available to the public. Provide periodic training to assist stakeholders in using the system. [Supports Strategies 2 and 4]
- Hold annual public meetings (such as the Regulatory Information Conference and the Nuclear Safety Research Conference) to bring together diverse groups of stakeholders to discuss the latest trends in industry performance and cutting-edge research. [Supports Strategies 1, 3, 4, and 5]
- Improve communications about licensee operating events and their significance using easily understood risk comparisons, plant features, and regulatory controls to put situations into their proper context. Develop and implement agency-wide guidelines that will improve the NRC's ability to communicate with stakeholders regarding risk insights and other health and safety issues. [Supports Strategy 3]
- Develop communication plans for key program activities. [Supports Strategies 1 and 4]
- Maintain and update the NRC's external Web site with timely, user-friendly information and continue to make site enhancements based on input from Web user satisfaction measurement. [Supports Strategies 1, 3, and 4]
- Identify areas that require additional public engagement and dialogue. This may be achieved through independent surveys or other measurement instruments. [Supports Strategy 2].





The NRC and its Agreement States regulate radioactive materials used in diagnosing and treating patients.

## IV. EFFECTIVENESS

### GOAL

Ensure That NRC Actions Are Effective, Efficient, Realistic, and Timely

### STRATEGIC OUTCOME

- No significant licensing or regulatory impediments to the safe and beneficial uses of radioactive materials.

### DISCUSSION

Over the next several years, the NRC anticipates a significant increase in agency workload. In particular, the workload is likely to include licensing requests of unprecedented technical complexity, including the Department of Energy application to license the Yucca Mountain high-level radioactive waste repository and requests to license the next generation of nuclear reactors. Security demands are becoming more complex, requiring diverse professional expertise and close coordination with other Federal, State, and local agencies. Increases in both the frequency and the extent of stakeholder involvement in the NRC's regulatory processes are expected as the agency works to improve openness.

These and other challenges are coming at a time when initiatives such as the Government Performance and Results Act are challenging Federal agencies to become more effective and efficient and to justify their budget requests with demonstrated program results. The drive to improve performance in Government, coupled with increasing demands on the NRC's finite resources, clearly indicates a need for the agency to become more effective, efficient, realistic, and timely in its regulatory activities.

Effectiveness means achieving the desired outcome from a program, process, or activity. The concept of effectiveness applies to all levels of the agency, from individual actions, to programs, to agency-wide initiatives. At the program level, for example, effectiveness refers to the degree of success in achieving

program goals and requires careful alignment of planned activities to intended program results to ensure that the right work is being performed.

Efficiency refers to productivity, quality, and cost characteristics that together define how economically an activity or process is performed. The NRC recognizes that the efficiency of the agency's regulatory processes is important to the regulated community and other stakeholders, including Federal, State, and local agencies, and to the public. Efficient regulatory processes help the NRC to meet stakeholder expectations regarding timely, accurate, and responsible agency actions. While the NRC will never compromise safety for the sake of increased efficiency, the agency works to improve the efficiency of its regulatory processes whenever practicable.

Timeliness, a key product of efficiency, means acting within a predictable time frame and without unnecessary delays. NRC actions should be timely to support the agency's strategic objective of enabling the safe, beneficial use of radioactive materials. The timeliness of agency actions is key to providing a stable, reliable, and responsive regulatory environment. The agency has established timeliness goals for many of its regulatory activities and regularly tracks its performance in meeting these goals.

Throughout the regulatory processes, the NRC seeks to impose only those requirements that are necessary to achieve the agency's mission. NRC regulations were established using the "defense-in-depth" principles and conservative practices that, in some cases, have led to requirements that may exceed what is necessary to reasonably ensure the protection of public health and safety and the environment. Advances in risk analysis and scientific understanding, as well as lessons learned through operating experience, are used to help the agency to focus on the most significant safety requirements and, in certain instances, to avoid unnecessary conservatism that offers little safety benefit.

The NRC believes that efforts to improve efficiency, timeliness, and realism are congruent with the agency's safety and security goals. In fact, initiatives related to this goal should serve to sharpen the agency's focus on safety and security and ensure that available resources are optimally directed toward the NRC's mission.

Many factors could contribute to licensing and regulatory impediments, such as an inadequate regulatory framework, an ineffective program, or an inefficient process that results in an untimely regulatory decision. The NRC is committed to addressing such issues through initiatives related to this goal, and it will also monitor the regulated community for instances where agency actions may have unnecessarily impeded licensees and applicants. In conducting this monitoring, the NRC may consider the results of self-assessments and external assessments, feedback from stakeholders, Congressional direction, and other sources.



The Oconee Nuclear Power Plant at Greenville, SC.

### STRATEGIES AND MEANS

The NRC will employ the following strategies to ensure that its actions are effective, efficient, realistic, and timely.

### EFFECTIVENESS STRATEGIES

- (1) Use state-of-the-art methods and risk insights to improve the effectiveness and realism of NRC actions.
- (2) Improve NRC regulation by adding needed requirements and eliminating unnecessary requirements.
- (3) Use performance-based regulation to minimize unnecessarily prescriptive requirements.
- (4) Use realistically conservative, safety-focused research programs to resolve safety-related issues.
- (5) Enhance cooperation with Federal, State, and Tribal governments and international counterparts.
- (6) Minimize unnecessary regulatory or jurisdictional overlap.
- (7) Anticipate challenges and respond quickly to changes in the regulatory and technical environment.
- (8) Make timely regulatory decisions.
- (9) Foster innovation at the NRC to improve systematically the NRC's regulatory programs.



### MEANS TO SUPPORT EFFECTIVENESS STRATEGIES

The NRC conducts a number of programs and initiatives to ensure achievement of the effectiveness goal. Activities to be conducted in these programs during this strategic planning period include the following examples:

- Conduct systematic evaluations to assess the effectiveness of the agency's programs in relation to its strategic objective and goals. In addition to dedicated internal resources, the NRC will retain outside expertise, as needed, to provide objective assessments and recommendations to improve program performance. [Supports Strategies 1, 2, 6, 7, and 8]
- Use independent, internal agency resources such as the Office of the Inspector General and, where deemed appropriate by the Commission, relevant advisory committees to review whether programs are effective, processes are efficient, and regulatory decisions are sound and realistic. [Supports Strategies 1, 2, 6, 7, and 8]
- Establish specific goals for continuous improvement in programs and processes. [Supports Strategies 8 and 9]
- Use risk-informed and performance-based approaches, where appropriate, to ensure that regulatory programs are conducted consistent with an appropriate level of risk. [Supports Strategies 1, 2, 3, and 4]
- Implement initiatives to encourage innovation and diverse views at the NRC, to empower decision-making, and to effectively manage change. [Supports Strategy 9]
- Expand the use of information technology tools to improve efficiency throughout the agency. This is further discussed in the Management section of this plan under "Expanded Electronic Government." [Supports Strategies 1 and 8]
- Work cooperatively with the Agreement States through the National Materials Program to agree on priorities for enhancing the regulatory framework for materials licensees. [Supports Strategies 5, 6, and 7]
- Encourage stakeholders to identify actions, such as inadequate guidance or an untimely response to stakeholder needs that may have resulted in unnecessary cost or uncertainty. Consider suggested improvements to the regulatory framework and take action to address regulatory practices that impose unnecessary burden. [Supports Strategies 2, 6, and 7]
- Participate in information exchanges and pursue cooperative research, both domestically and internationally, to share positions on technical and policy issues, leverage resources, avoid duplication of effort, and share facilities wherever possible. [Supports Strategies 5 and 6]
- Incorporate effectiveness and efficiency measures in the NRC planning and performance measurement process throughout the agency. [Supports Strategy 8]



Nuclear power plant control room.

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NRC emergency response coordinator meeting.

## V. MANAGEMENT

### GOAL

Ensure Excellence in Agency Management to carry out the NRC's strategic objective

### STRATEGIC OUTCOMES

- Continuous improvement in NRC's leadership and management effectiveness in delivering the mission.
- A diverse, skilled workforce and an infrastructure that fully support the agency's mission and goals.

### DISCUSSION

The NRC strives for management excellence in carrying out all of its regulatory responsibilities. The agency believes that management excellence should be achieved while fostering the successful conduct of priority activities. In setting this goal, the NRC considered the management and support needed to achieve the agency's mission, preexisting management challenges, and other initiatives identified by central organizations such as the General Accounting Office, the Office of Management and Budget, and the Office of Personnel Management. This goal includes strategies for the management of human capital, infrastructure management, improved financial performance, expanded electronic government, budget and performance integration, and internal communications.

Over the next several years, the NRC will deal with a variety of issues across the management spectrum. Among these, the greatest challenges will be to acquire, develop and sustain the agency's highly skilled and diverse technical workforce and to strengthen its information technology infrastructure. The NRC will support its workforce with a high quality, cost-effective administrative infrastructure. Strategies will focus on enhancing individual and collective productivity with the appropriate tools and on employing innovative and sound management practices.

### STRATEGIES AND MEANS TO ENSURE EXCELLENCE IN AGENCY MANAGEMENT

The NRC will employ a variety of strategies, resources, skills, processes, and technologies to ensure the effectiveness and efficiency of agency management. The Agency Management strategies will be achieved by a variety of means, some of which are listed below.

#### A. MANAGEMENT OF HUMAN CAPITAL

The NRC's technical, engineering, legal, and administrative workforce possesses detailed knowledge and specialized technical skills that enable the agency to fulfill its mission. To maintain this expertise and respond to emerging needs, the NRC will need to build its human capital in areas as diverse as nuclear engineering, nuclear safeguards and security, risk assessment, health physics, geochemistry, hydrology, materials engineering, law, information technology, communications, financial management, and other administrative skills. These individuals will achieve their greatest effectiveness when they are appropriately deployed, fully engaged in fulfilling the NRC's mission requirements, and recognized for their performance. For this reason, the agency periodically assesses its management of human capital, looking for ways to make improvements that will better support the achievement of the mission. The NRC will also focus its use of competitive sourcing to improve efficiency and bolster needed skills for the coming years.

#### Human Capital Strategies

The NRC will employ the following strategies to achieve the management excellence goal:

- (1) Optimize the agency's organizational structure to facilitate achievement of performance goals.
- (2) Use innovative recruitment, development, and retention strategies to achieve a high quality, diverse work force with the skills needed to achieve our mission.

- (3) Develop the agency's current and future leaders.
- (4) Strengthen managerial and supervisory accountability for setting individual and organizational performance expectations and for providing timely and complete feedback.
- (5) Foster a work environment that is free of discrimination and provides opportunities for all employees to optimally use their diverse talents in support of the NRC's mission and goals.
- (6) Use competitive sourcing to improve the efficiency of commercial activities while ensuring organizational effectiveness.

#### Selected Means to Achieve Human Capital Strategies

The NRC conducts a number of programs and initiatives to achieve the goal of excellence in agency management. Activities to be conducted in these programs during this strategic planning period include the following examples:

- Use formal development programs and succession planning to create a diverse cadre of skilled leaders who are committed to achieving the agency's mission, goals, and strategies and who are prepared for appointment to leadership positions. [Supports Strategy 3]
- Maintain a dynamic program of training, development, and knowledge transfer to ensure that the NRC acquires and maintains the competencies needed to implement the strategic plan. [Supports Strategy 2]
- Measure the extent to which recruitment, development, and retention strategies enhance diversity at all levels. [Supports Strategy 5]

#### B. INFRASTRUCTURE MANAGEMENT

To provide the NRC with high quality, cost-effective infrastructure management to support the agency's mission and strategic goal achievement, strategies focus on protecting workers and enhancing their individual and collective productivity with the appropriate tools, while employing innovative and sound business practices.

#### Infrastructure Management Strategies

The NRC will employ the following strategies to achieve the management excellence goal:

- (1) Maintain a healthy, safe, secure, and accessible physical work environment.
- (2) Provide equipment, facilities, and administrative services that employees need to work better and deliver high quality products and services on time.
- (3) Effectively acquire goods and services to support the agency mission.
- (4) Continuously identify new and better ways of providing service.

#### Selected Means to Achieve Infrastructure Management Strategies

The NRC conducts a number of programs and initiatives to achieve the goal of excellence in agency management. Activities to be conducted in these programs during this strategic planning period include the following example:

- Maintain buildings and facilities and provide services to ensure safety, workplace comfort, and accommodation of employees and visitors with special needs; and improve their cost-effectiveness and efficiency for the conduct of the agency's business. [Supports Strategies 1 and 2]



- Acquire goods and services in an effective manner to ensure fair and equitable treatment for all parties wishing to do business with the NRC, and to provide results in the best value to the NRC. [Supports Strategy 3]
- Provide physical security for personnel, facilities, and equipment. [Supports Strategy 1]

- Meeting increasing requirements to conduct business electronically, manage information more effectively, be open in agency processes, and ensure information security.
- Meeting the expanding needs of a mobile workforce.
- Establishing and maintaining the Licensing Support Network and the Electronic Hearing Docket for the high-level waste repository proceedings.

### C. IMPROVED FINANCIAL PERFORMANCE

Accurate and timely financial information is critical to achieving the NRC's goals. The effectiveness of the agency's financial management directly affects the fees borne by licensees, as well as the burden on the taxpaying public.

#### Improved Financial Performance Strategies

The NRC will employ the strategies described below to achieve the management excellence goal:

- (1) Provide accurate, timely, and more useful financial information, including cost information to agency managers, and use such information for NRC decision-making.
- (2) Use financial systems and processes to ensure that the NRC's financial assets are adequately protected consistent with risk.

#### Selected Means to Achieve Improved Financial Performance Strategies

The NRC conducts a number of programs and initiatives to achieve the goal of excellence in agency management. Activities to be conducted in these programs during this strategic planning period include the following example:

- Assess needs and identify opportunities to streamline the agency's financial management processes and systems. [Supports Strategies 1 and 2]

### D. EXPANDED ELECTRONIC GOVERNMENT

The NRC's information technology infrastructure is facing three critical challenges:

#### Expanded Electronic Government Strategies

The NRC will employ the following strategies to achieve the management excellence goal:

- (1) Strengthen enterprise architecture to enhance agency information technology/information management investment decisions.
- (2) Influence and implement E-Government initiatives that are applicable to the NRC.
- (3) Adopt Government-wide information technology solutions where cost-effective.
- (4) Expand and strengthen information security capabilities to ensure that effective information protection is in place.
- (5) Make it easier for NRC employees to acquire, access, and use information needed to perform their work.
- (6) Improve the ability of the NRC to conduct business electronically with external entities.
- (7) Provide external stakeholders the ability to access the agency's publicly available information more easily and effectively.

#### Selected Means to Achieve Expanded Electronic Government Strategies

The NRC conducts a number of programs and initiatives to achieve the goal of excellence in agency management. Activities to be conducted in these programs during this strategic planning period include the following examples:

- Maintain a reliable and dependable set of core information technology systems. [Supports Strategy 6]
- Use secure Web technology to improve service and access to information, and increase opportunities for employee telecommuting and other offsite work. [Supports Strategies 3, 4, 5, and 7]
- Participate in E-Government initiatives that are applicable to the NRC. [Supports Strategies 1 and 2]

### E. BUDGET AND PERFORMANCE INTEGRATION

The Government Performance and Results Act calls upon Federal agencies to align their resource allocation decisions more closely with performance outcomes. The NRC has put in place several key processes to ensure such alignment and is now focusing its efforts on effective implementation.

#### Budget and Performance Integration Strategies

The NRC will employ the following strategies to achieve the management excellence goal:

- (1) Improve linkage of individual and organizational performance standards to NRC's Performance Budget.
- (2) Use and improve the Planning, Budgeting, and Performance Management process to ensure better integration of performance results into NRC planning and budgeting.

#### Selected Means to Achieve Budget and Performance Integration Strategies

The NRC conducts a number of programs and initiatives to achieve the goal of excellence in agency management. Activities to be conducted in these programs during this strategic planning period include the following example:

- Improve the performance management system for senior executives by aligning individual performance objectives with organizational and agency goals. [Supports Strategy 1]

### F. INTERNAL COMMUNICATIONS

Internal communications are critically important to the NRC and vital to achieving agency goals. NRC management recognizes that it must strengthen its internal communication methods to foster and support a culture of openness and innovation.

#### Internal Communications Strategies

The NRC will employ the following strategies to achieve the management excellence goal:

- (1) Communicate the NRC's vision, values, and expectations to address the full range of NRC's strategic goals and to achieve alignment on desired outcomes.
- (2) Improve communication up, down, and across organizational units.
- (3) Foster a work environment that values differing opinions and rewards safety-conscious thinking.

#### Selected Means to Achieve Internal Communications Strategies

The NRC conducts a number of programs and initiatives to achieve the goal of excellence in agency management. Activities to be conducted in these programs during this strategic planning period include the following examples:

- Redesign the NRC's internal Web site, emphasize frequent feedback, and increase face-to-face, two-way communications between management and staff. [Supports Strategies 1, 2, and 3]
- Provide enhanced training opportunities for NRC employees to develop more effective communications skills. [Supports Strategies 1, 2, and 3]



## Appendix A

### Key External Factors

The NRC's ability to achieve its goals depends on a changing equation of industry operating experience, national priorities, market forces, and availability of resources. This appendix discusses significant external factors, all of which are beyond the control of the NRC but could have an impact on the agency's ability to achieve its strategic goals.

#### Receipt of New Reactor Operating License Applications

The U.S. nuclear industry has indicated a new and growing interest in licensing and constructing new nuclear power plants. If the NRC receives a substantial increase in new reactor operating license applications beyond that presently anticipated, significant reallocation of resources would be necessary to provide timely review of the applications and inspection of construction activities. In addition, the high level of public interest likely to be associated with such applications would require significant efforts by the NRC to keep stakeholders informed and involved in the licensing process.

#### Significant Operating Incident (Domestic or International)

A significant safety incident could cause an unexpected increase in safety and security requirements that would likely change the agency's focus on initiatives related to its five goals until the situation was stabilized. Because NRC stakeholders (including the public) are highly sensitive to many issues regarding the use of radioactive materials, even events of relatively minor safety or security significance can sometimes require a response that consumes considerable agency resources.

#### Significant Terrorist Incident

A significant terrorist incident anywhere in the United States could significantly alter the Nation's priorities. This, in turn, could affect significance levels, a need for new or changed security requirements, or other policy decisions that might impact

the NRC, its partners, and the industry it regulates. In particular, the impact on State regulatory and enforcement authorities might affect their ability to work with the NRC in achieving its goals.

A significant terrorist incident at a nuclear facility or activity anywhere in the world would likely result in similar changes in the NRC's priorities and potential in U.S. policy regarding export activities, the NRC's role in international security, and/or requirements for security at U.S. nuclear power plants.

#### Timing of the Department of Energy Application and Related Activities for the High-Level Waste Repository at Yucca Mountain

The proposed repository for spent nuclear fuel represents a major effort for the NRC in planning, review, analysis, and ultimate decision-making regarding the licensing of the facility. The agency has begun to ramp up this effort in response to pre-application activities by the Department of Energy. The timing of the Department's actions will heavily influence the NRC's resource allocation decisions over the next several years. Acceleration or delay in the Department's activities will most likely require reprogramming of NRC resources, which may affect other programs that are directly associated with achieving the agency's goals.

#### Homeland Security Initiatives

Emergency preparedness activities with Federal, State, and local agencies continue to increase in scope and number. This impacts the agencies' priorities and workloads. As more resources are diverted to external coordination activities, previous work activities are re-prioritized.

#### Legislative Initiatives

Numerous legislative initiatives under consideration by Congress could have a major impact on the NRC. In particular, pending energy legislation would affect the agency's priorities and workload, if enacted. Increasing interest in diversified sources of energy and energy independence could lead to an increase in license applications for nuclear power plants. Any

attendant increase in resources devoted to license review and analysis might affect the agency's ability to achieve its goals for this planning period.

## Appendix B

### Program Evaluations

Consistent with the NRC's goal of ensuring safety, the agency is evaluating several of its safety programs aimed at ensuring that the performance of licensees are at or above acceptable safety levels. The program evaluations presented below reinforce the NRC's commitment to ensuring nuclear safety. The NRC considered the results of the evaluations in developing the strategies in the Safety section. For example, the results of evaluations of the agency's Reactor Inspection and Performance Assessment program and the Fuel Cycle Licensing and Inspection program were used to strengthen the alignment of program performance measures with the agency's strategic outcomes, as well as to better demonstrate contributions of program activities and outputs.

#### Planned Program Evaluations:

##### Reactor License Renewal Program

*Expected Completion Date:* FY 2004

*Objectives:* The reactor license renewal program evaluation has two objectives: (1) to determine if program elements are effective and efficient, and (2) to provide timely, objective information to inform program planning and improvements given the current regulatory environment and the strategic plan.

*Scope:* The evaluation has the following program components: safety review, inspection, and guidance development. The evaluation examines the efficiency and effectiveness of the review process for verification of compliance with the "Requirements for Renewal of Operating Licenses for Nuclear Power Plants," as specified in Title 10, Part 54, of the Code of Federal Regulations (10 CFR Part 54). In particular, the evaluation will focus on how NRC's reviews of the Scoping and Screening of License Renewal Applications can be improved.

##### Reactor Operating Experience Program

*Expected Completion Date:* FY 2004

*Objectives:* The reactor operating experience program evaluation has two objectives: (1) to determine if the ongoing program is effective in supporting achievement of the performance goals and the agency's strategic plan goals, and (2) to provide timely, objective information to inform program planning and improvements.

*Scope:* The evaluation will include the following aspects of the program: (1) the agency's capability to retain operating experience information and to perform longer-term operating experience reviews, (2) current thresholds, criteria and guidance for initiating generic communications, (3) opportunities for additional efficiency and effectiveness gains stemming from changes in organizational alignments, (4) the effectiveness of the Generic Issues Program, and (5) the effectiveness of the internal dissemination of operating experience information to end users.

##### High-Level Waste Repository

*Expected Completion Date:* FY 2005

*Objective:* The NRC will perform an evaluation of the NRC's high-level waste repository program. This program evaluation will assess the adequacy of NRC processes, procedures, and staffing to conduct regulatory activities for the proposed high-level waste repository at Yucca Mountain. The results of the evaluation will serve as a mechanism for identifying areas that require additional focus, and for deciding whether changes might be needed to ensure the future effectiveness of the program.

*Scope:* This evaluation will consider the following areas: (1) management plans for ensuring that all major licensing review actions are identified and scheduled and their responsibilities assigned, (2) organization of the Yucca Mountain project within the Office of Nuclear Material Safety and Safeguards management structure, (3) processes, procedures, and technical support (staffing and tools) for conducting the license review and preparing staff outputs, (4) process and procedures for

inspections and allegations, (5) training and qualification of licensing employees.

#### Reactor Oversight Program

*Expected Completion Date:* FY 2005

*Objectives:* The reactor oversight program evaluation will have two objectives: (1) to determine whether the ongoing program is effective in supporting the achievement of the performance goals and the agency's strategic plan goals, and (2) to provide timely, objective information to inform program planning and improvements.

*Scope:* The evaluation will include the following aspects of the program: (1) the efficiency of the agency's baseline inspection program, (2) the effectiveness of the significance determination process, and (3) the usefulness of current performance indicators for enhancing agency planning and response.

#### Reactor Licensing Program

*Expected Completion Date:* FY 2005

*Objectives:* The reactor licensing program evaluation will have two objectives: (1) to determine whether the ongoing program is effective in supporting the achievement of the performance goals and the agency's strategic plan goals, and (2) to provide timely, objective information to inform program planning and improvements.

*Scope:* The evaluation will include the efficiency and effectiveness of the following program components: (1) review of license amendments requests, (2) review of relief requests, and (3) issuance of orders. The evaluation will consider the process work flow, quality requirements, and roles and responsibilities for each product line in order to identify best practices for ensuring safety while enhancing process efficiency.

#### Uranium Recovery

*Expected Completion Date:* FY 2006

*Objective:* The NRC will perform an evaluation of the effectiveness of the implementation of the NRC's Uranium Recovery Program. This program evaluation will assess how effective the program has been in achieving its performance goals and its capacity to successfully meet future challenges. The results of the evaluation will serve as a mechanism for identifying areas that require additional focus and deciding

whether changes could be made to current business practices to improve the overall effectiveness of the program.

*Scope:* The evaluation will consider the following Uranium Recovery Program elements: (1) licensing reviews (both Titles I and II of the Atomic Energy Act of 1954), (2) inspections, (3) support to Agreement States, (4) compliance with Operating Plan commitments, (5) support for hearings, (6) response to petitions filed under 10 CFR 2.206, (7) response to allegations, (8) public meetings, and (9) NRC employee qualification. The evaluation will not include source material licensing, enrichment certification, or the dam safety program.

#### Reactor Safety Research Program Research and Test Reactor Program Allegation Program

*Expected Completion Date:* FY 2006

*Objectives:* Each program evaluation in FY 2006 will have two objectives: (1) to determine whether the ongoing program has been effective in supporting the achievement of the agency's strategic plan goals, and (2) to provide timely, objective information to inform program planning and improvements.

*Scope:* The evaluations will include major components of the program, but could be narrowed to focus on a particular program process or aspect of the program as they progress. The specifics of the final scope will depend upon performance data that are already collected by each program, or, if necessary, on a particular controversy or concern with program performance at the time of the evaluation. To inform program planning in a timely manner, the evaluations will be scheduled such that the results will be available to inform the development of budget planning assumptions for the subsequent budget year and to inform resource allocation decision-making for the current execution year.

#### Schedule for Planned Program Evaluations

FY 2004:

- Reactor License Renewal Program
- Reactor Operating Experience Program

FY 2005:

- High-Level Waste Repository

- Reactor Oversight Program
- Reactor Licensing Program

FY 2006:

- Uranium Recovery
- Reactor Safety Research Program
- Research and Test Reactor Program
- Allegation Program

## Appendix C Glossary

**Agreement State:** a State that has signed an agreement with the NRC allowing the State to regulate the use of certain radioactive materials within its borders.

**Defense-in-Depth:** an element of the NRC's Safety Philosophy that employs successive compensatory measures to prevent accidents or lessen the effects of damage if a malfunction or accident occurs at a nuclear facility. The NRC's Safety Philosophy ensures that the public is adequately protected and that emergency plans surrounding a nuclear facility are well conceived and will work. Moreover, the philosophy ensures that safety will not be wholly dependent on any single element of the design, construction, maintenance, or operation of a nuclear facility.

**Design Basis Threat:** a profile of the type, composition, and capabilities of an adversary. The NRC and its licensees use the design basis threat as a basis for designing safeguards systems to protect against acts of radiological sabotage and to prevent the theft of special nuclear material.

**Diversity:** differences that define each employee as a unique individual. Differences in culture, ethnicity, race, gender, national origin, religion, disability, sexual orientation, education, experiences, opinions, and beliefs are just some of the distinctions that each employee brings to the workplace.

**Effectiveness:** ability to achieve the intended outcome(s) of an activity, program, or process. A program cannot be considered effective if it is not meeting its objectives and achieving the intended outcome(s).

**Efficiency:** the ability to act with a minimum of waste, expense, or unnecessary effort. Efficiency embodies a combination of productivity, cost, timeliness, and quality.

**Enterprise Architecture:** a strategic information asset base that defines (a) the mission, (b) the information necessary to perform the mission, (c) the technologies necessary to perform the mission, and (d) the transitional processes for implementing new technologies in response to changing mission needs. In addition, enterprise architecture includes (a) a baseline architecture, (b) a target architecture, and (c) a sequencing plan. Enterprise architecture is used to inform and guide information technology planning and investment decisions.

**High-Level Waste:** the highly radioactive materials that are produced as byproducts of the reactions that occur inside nuclear reactors. Such wastes take one of two forms, becoming either spent (used) reactor fuel when it is accepted for disposal or waste materials that remain after spent fuel is reprocessed.

**Low-Level Waste:** items that have become contaminated with radioactive material or have become radioactive through exposure to neutron radiation. This waste typically consists of contaminated protective shoe covers and clothing, wiping rags, mops, filters, reactor water treatment residues, equipment and tools, luminous dials, medical swabs, injection needles, and syringes. The radioactivity can range from just above background levels found in nature to very high levels found in certain cases (such as parts from inside the reactor vessel in a nuclear power plant).

**Outcome Goals:** long-term performance goals; the intended outcomes of specific strategies.

**Performance-Based:** an approach to regulatory practice that establishes performance and results as the primary bases for decision-making. Performance-based regulations have the following attributes: (1) measurable, calculable or objectively observable parameters exist or can be developed to monitor performance; (2) objective criteria exist or can be developed to assess performance; (3) licensees have flexibility to determine how to meet the established



performance criteria in ways that will encourage and reward improved outcomes; and (4) a framework exists or can be developed in which the failure to meet a performance criterion, while undesirable, will not in and of itself constitute or result in an immediate safety concern.

**Program Assessment Rating Tool (PART):** an instrument used by the Office of Management and Budget to inform budgeting decisions, support management, identify design problems, and promote performance measurement and accountability.

**Regulatory Framework:** several interrelated aspects—(1) the NRC’s mandate from Congress in the form of enabling legislation, (2) the NRC’s licenses, orders, and regulations in Title 10 of the Code of Federal Regulations, (3) regulatory guides, and review plans and other documents that guide the application of NRC requirements that amplify those regulations, (4) the licensing and inspection procedures utilized by NRC employees, and (5) the enforcement guidance.

**Risk-Informed:** an approach to decision-making in which risk insights are considered along with other factors such as engineering judgment, safety limits, redundancy, and diversity. Risk insights are gathered by asking three questions: “What can go wrong?”; “How likely is it?”; and “What are the consequences?” A risk assessment is a systematic method for addressing these three questions as they relate to understanding likely outcomes, sensitivities, areas of importance, system interactions, and areas of uncertainty.

**Risk Insights:** refers to the results and findings that come from risk assessments. A risk assessment is a systematic method for addressing the three risk questions as they relate to the performance of a particular system (which may include a human component) to understand likely outcomes, sensitivities, areas of importance, system interactions and areas of uncertainty.

**Spent Fuel:** see High-Level Waste.

**Stakeholders:** members of the public with a specific interest in a given topic.

**Standards:** technical requirements and recommended practices for performance of any device, apparatus, system, or phenomenon associated with a specific field.

**Yucca Mountain Repository:** a proposed underground facility at Yucca Mountain, Nevada, for the permanent disposal of high-level waste produced from nuclear power plants and the Nation’s nuclear weapons production activities.

## Endnotes

- (1) “Nuclear reactor accidents” are defined in the NRC Severe Accident Policy Statement as those events that result in substantial damage to the reactor fuel, whether or not serious offsite consequences occur.
- (2) “Significant radiation exposures” are defined as those that result in unintended permanent functional damage to an organ or a physiological system as determined by a physician in accordance with Abnormal Occurrence Criterion I.A.3.
- (3) Releases that have the potential to cause “adverse impact” are those that exceed the limits for reporting abnormal occurrences as given by Abnormal Occurrence criterion 1.B.1 [normally 5,000 times Table 2 (air and water) of Appendix B, Part 20].
- (4) “Public” includes occupational workers.





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