U.S.NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

*Protecting People and the Environment*

# FY 2007 - FY 2012 Strategic Plan

July 2007

**About the NRC**

The United States Nuclear Regulatory Commission (NRC or agency) was established by the Energy Reorganization Act of 1974, and began operations in 1975. The NRC was established to regulate the civilian commercial, industrial, academic, and medical uses of nuclear materials in order to protect the public health and safety, the environment, and promote the common defense and security.

The NRC's scope of responsibility includes regulation of commercial nuclear power plants; research, test, and training reactors; nuclear fuel cycle facilities; medical, academic, and industrial uses of radioactive materials; the decommissioning of these facilities and sites; 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 five-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 commercial nuclear power reactors; 34 non-power (research and test) reactors; approximately 4,500 licensed reactor operators; 40 uranium recovery sites; 9 major fuel cycle facilities; approximately 4,400 research, medical, industrial, government, and academic materials licensees; and, 45 independent spent fuel storage installations. The NRC also consults with the Department of Energy regarding disposal options for waste incidental to reprocessing and monitors Department of Energy disposal actions for these incidental wastes.

The NRC is responsible for regulating domestic activities related to radiation protection and nuclear safety for nuclear facilities and for promoting the common defense and security related to uses of radioactive materials. The NRC also licenses the import and export of radioactive materials, participates in international nuclear activities, including multilateral and bilateral safety and security activities, and works closely with its international counterparts to enhance nuclear safety and security worldwide.

In addition, 34 States have signed agreements with the NRC under which they assume regulatory responsibility over 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 (17,600) of the more than 22,000 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 licensees share a common responsibility to protect public health and safety and the environment. Because licensees are directly involved in the transfer, receipt, manufacturing, production, acquisition, and utilization of nuclear materials, it is the licensee who is ultimately responsible for a safe and secure outcome associated with these activities.

**A Stable Regulator in a Dynamic Environment**
The regulatory environment associated with the use of radioactive materials is changing. The expected receipt of applications to construct and operate new nuclear power plants, and the disposal of high-level nuclear waste, are some of the major challenges facing the NRC over the next several years.

In order to meet these challenges, the NRC must obtain additional resources to meet an increasing workload, hire and train several hundred new technical staff, update the agency's regulatory review and construction inspection guidelines, and expand its infrastructure to accommodate staff increases.

However, even as the NRC expands, the agency's mission, vision, and strategic objective remain unchanged. The NRC's priority continues to be, as always, to ensure the adequate protection of public health, safety, and the environment, and promoting common defense and security.

The Strategic Plan also reflects that the agency's Safety and Security goals, as well as their associated strategic outcomes, continue to accurately describe the agency's core functions, and therefore remain essentially unchanged. This focus on safety and security ensures that the NRC remains a strong, independent, stable and predictable regulator.

In the next five years, the Nation is likely to see the following changes occur:

- The NRC expects to receive applications to construct and operate new nuclear power plants and fuel cycle facilities, including a significant number of uranium recovery applications.

- The Department of Energy will submit an application to construct the Nation's high-level radioactive waste repository.

- Larger quantities of radioactive waste will be held in interim storage or transported to interim storage sites awaiting permanent disposal.

- The NRC will continue to coordinate with a wide array of Federal, State, local and Tribal agencies related to license renewal, new reactor licensing, homeland security, emergency planning and protection of the environment.

- 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 NRC recognizes that the changes described above require an increased need for more effective and open communication with – and education of – public stakeholders about a variety of issues. These include the safety and security of existing and proposed nuclear power plants and other licensed facilities and materials, emergency preparedness, the realistic effects of a potential terrorist act and the impact on the public health and safety and the environment from medical, academic, and industrial uses of licensed materials.

Changes in the regulatory environment also require that the agency's human capital planning includes provisions for knowledge management (capture, documentation and transfer), and the

acquisition of space to accommodate the growing workforce. Central to the agency's success is a comprehensive knowledge management approach that includes processes, policies, and practices to attract and retain knowledgeable staff; practices for sharing, retaining, and recovering knowledge; and the information technology applications that support knowledge management. The NRC is also committed to providing sufficient staff office space to support the anticipated growth in regulatory workload, while maintaining high employee workplace satisfaction, efficient conduct of work activities, and high employee retention rates.

**Organization of the Strategic Plan**
This Plan describes the NRC's strategic objective and its key goals of safety and security. For each of these goals, the Plan describes their strategic outcomes, discussion of issues, strategies, and the means to support the strategies during this strategic planning period. The Plan then describes the organizational excellence objectives (i.e., openness, effectiveness, timeliness, and operational excellence) to support the strategic goals of safety and security. For each of the excellence objectives, the Plan provides a discussion of issues, strategies and selected activities to support the strategies.

**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.

The NRC's strategic objective, goals, and strategic outcomes follow.

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

**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 excellence in regulatory actions that are open, effective, efficient, realistic, and timely.

**Strategic Goals**
**Safety** – Ensure adequate protection of public health and safety and the environment.
**Security** – Ensure adequate protection in the secure use and management of radioactive materials.

**Safety Goal:** Ensure adequate protection of public health and safety and the environment.

**Strategic Outcomes**

- Prevent the occurrence of any nuclear reactor accidents.
- Prevent the occurrence of any inadvertent criticality events.
- Prevent the occurrence of any acute radiation exposures resulting in fatalities.
- Prevent the occurrence of any releases of radioactive materials that result in significant radiation exposures.
- Prevent the occurrence of any releases of radioactive materials that cause significant adverse environmental impacts.

**Discussion**

The NRC's primary function 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 responding to anticipated developments in the nuclear arena over the next several years, including the review of a number of new nuclear reactor applications, the NRC will continue to 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, the agency will maintain vigilance over safety performance through licensing reviews, inspections, expanded oversight (when needed) rulemaking, and incident response. The NRC will seek to proactively identify and resolve potential safety issues, including those with generic implications for multiple reactors and licensees. The NRC will also use enforcement actions for significant deficiencies, including issuing orders for corrective action, issuing shutdown orders, imposing civil penalties and/or seeking criminal prosecution, or, when appropriate, suspending or revoking a license.

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 using a full range of actions necessary to ensure that a licensee's performance does not fall below acceptable levels.

Future challenges to the agency are expected to require adjustment to both internal and external factors, such as the use of risk-informed and, as appropriate, performance-based regulations. Important current and future challenges include materials degradation issues at existing nuclear power plants; high-level waste transport, storage, and disposal; new and evolving technologies, including digital instrumentation and controls; and domestic and international operating experience and other events of national interest for lessons-learned and best practices. Other considerations include upgrading incident response systems, employing a multi-faceted regulatory approach, and cooperating and coordinating with other domestic agencies and government entities.

The majority of operating nuclear power plants are expected to apply for 20-year extensions of their licenses. Materials degradation is the primary consideration in the license renewal process to ensure that the aging effects 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, instrumentation and controls, piping, and containment structures.

Nuclear facility licensees are replacing analog instrumentation and control equipment with digital equipment because analog replacement parts are becoming more difficult to obtain. Digital systems also offer potentially better performance and features than analog systems. New advanced reactor plants are expected to use advanced digital instrumentation and control systems and control room operator interfaces, presenting regulatory and licensing challenges for the agency and the nuclear industry.

The agency is preparing for the review of applications to construct and operate a new generation of nuclear plants, including advanced light water reactors and non-light water reactors. The agency has reorganized its headquarters reactor licensing organization to dedicate necessary resources to accomplish timely reviews of these applications while also ensuring that adequate resources are available to support the operational safety of the current fleet of reactors. In addition, a dedicated organization has been created in the Region II office in Atlanta, Georgia, that will be responsible for the execution of on-site reactor construction inspection activities across the country.

With the development of new reactor designs and other new facilities and technologies, the NRC is working closely with counterparts in other countries interested in participating in the Multinational Design Evaluation Program, in which several nations jointly cooperate in the review of new reactor designs with the regulatory review authority. These next-generation designs require detailed evaluation of their vulnerability to accidents and attacks, as well as development of inspections, tests, analyses, and acceptance criteria for their construction. First-of-a-kind construction, startup and operation of several U.S.-designed nuclear power plants will continue to occur outside of the United States. Fabrication of a significant percentage of the major components both for these initial plants and for plants that may eventually be built in the U.S. will be accomplished by manufacturers outside of the United States. In response, the NRC is actively engaged, on both bilateral and multilateral bases, with its counterpart regulatory authorities in these countries to enhance sharing of relevant information, experience and expertise.

The NRC faces a major challenge as the Department of Energy prepares to submit 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 on an expedited schedule. Additionally, the Nation will continue to require that the continued safe management of interim storage capacity for spent nuclear fuel must be available even after the repository is licensed and ready to receive high-level radioactive waste. Toward that end, the NRC regulates various options for interim storage, including onsite spent fuel pools and dry casks at independent spent fuel storage installations. In addition, the NRC ensures the safety of spent fuel transportation packages. These packages are evaluated, tested, and certified as capable of safely transporting spent fuel from reactor sites or other storage facilities to the national repository.

The NRC will continue to see industry interest in commercial uranium enrichment technologies that utilize new methods of enriching uranium for operation in the United States. Further, 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 use in nuclear power plants as a technique to reduce 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 operating experience to help identify potential new licensee-specific or generic safety issues. It is the responsibility of the NRC to ensure that its licensees operate nuclear facilities and 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 and regulations, 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 adequate 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 and enforcement, 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 more effective regulation. Therefore, the NRC works with other Federal agencies, such as the Environmental Protection Agency, Occupational Safety and Health Administration, Food and Drug Administration, 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 in the use of nuclear materials and the protection of the public health, safety, and the environment and rights of occupational workers. Certain States that have entered into Agreements with the Commission carry out coordinated and comparable programs for nuclear materials within their respective borders.

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

**Safety Goal Strategies**

1. Develop, maintain, and implement licensing and regulatory programs for reactors, fuel facilities, materials users, spent fuel management, uranium recovery, decommissioning and waste-related activities to ensure the protection of public health, safety, and the environment.

2. Prepare for and manage the review of applications for new power reactors while continuing to ensure the safe operation of existing plants.

3. Conduct NRC safety, security and emergency preparedness programs in an integrated

manner.

4. Improve NRC's regulatory programs and apply safety-focused research to anticipate and resolve safety issues.

5. Use sound science and state-of-the-art methods to establish risk-informed and, where appropriate, performance-based regulations.

6. Ensure the necessary attention to safety matters and the accountability of individuals engaged in licensed activities.

7. Utilize domestic and international operating experience to inform decision-making.

8. Oversee licensee safety performance through inspections, investigations, enforcement, and performance assessment activities.

9. Effectively respond to events at NRC licensed facilities and other events of national interest, including maintaining and enhancing the NRC's critical incident response and communication capabilities.

**Means to Support Safety Strategies**

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

- Review licensing requests (e.g., new applications, amendments, renewals, decommissioning, termination) to confirm that they provide an adequate margin of safety and are consistent with regulatory requirements, and conduct environmental reviews, as appropriate, to ensure actions comply with the National Environmental Policy Act of 1970. [Supports Strategies 1 and 2]

- Implement, review, and refine the Reactor Oversight Process, the principal 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 5 and 8]

- Implement, review and refine materials oversight. [Supports Strategy 8]

- Maintain qualified inspectors at nuclear power reactor and certain fuel cycle sites (resident inspectors) in the NRC's four regional offices (regional inspectors and license examiners) 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., fuel cycle, medical, materials uses, radioactive waste management, and vendor inspections). [Supports Strategies 1, 6, 8, and 9]

- Maintain the readiness and capabilities of the NRC Headquarters 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 Strategies 3, 5, and 9]

- Conduct emergency preparedness exercises that involve a wide array of Federal, State, local and Tribal agencies and emergency response personnel, and use cooperative intergovernmental relationships to balance and inform national response capabilities. [Supports Strategies 3, 6, and 9]

- Conduct a program for the identification and resolution of reactor, fuel cycle, materials, and radioactive waste generic issues. [Supports Strategies 2, 3, and 4]

- Establish and maintain stable and predictable regulatory programs or policies for all programs. [Supports Strategies 1, 2, and 6]

- Maintain an environment in which safety issues and differing views can be openly identified without fear of retaliation. [Supports Strategies 1, 3, and 5]

- Conduct research programs to identify, lead, and/or sponsor reviews that support the resolution of ongoing and future safety issues, including providing tools and expertise needed to support the NRC's independent 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 and 2]

- Complete technical reviews and inspections of new spent fuel dry storage systems and facilities to ensure the safe and secure storage of spent fuel. [Supports Strategies 1 and 3]

- Conduct testing of spent fuel transportation packages under accident conditions to verify designs and modeling capability. [Supports Strategies 1 and 5]

- Conduct periodic reviews of Agreement State programs to ensure that they are adequate to protect the public health and safety and the environment 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 implementing a graded approach to monitor and respond to activities at fuel fabrication facilities. The NRC will use the lessons learned from these analyses to develop more risk-informed oversight programs. [Supports Strategies 1 and 4]

- Assess the key issues affecting the safe management of civilian low-level radioactive storage and waste disposal to ensure that potential disruption in access to the three licensed disposal sites does not adversely affect licensees' ability to safely operate and decommission their facilities. [Supports Strategies 1 and 6]

- Evaluate domestic and international operating events and trends for risk significance and generic applicability in order to improve NRC programs. [Supports Strategy 7]

- Develop consensus standards with professional societies and standard setting organizations to be used by the nuclear industry and international organizations to incorporate improvements into NRC regulations. [Supports Strategies 5 and 7]

- 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 ensure they are soundly based and determine whether substantial safety improvements can be identified and incorporated domestically. [Supports Strategies 5 and 7]

- Maintain an enforcement framework that emphasizes the importance of compliance with regulatory requirements and encourages prompt identification, and prompt, comprehensive correction of violations. [Supports Strategy 8]

**Security Goal :** Ensure adequate protection in the secure use and management of radioactive materials.

**Security Goal Strategic Outcome**

- Prevent any instances where licensed radioactive materials are used domestically in a manner hostile to the United States.

**Discussion**

The NRC must remain vigilant in ensuring the common defense and security in an elevated threat environment. The NRC achieves its common defense and security goal using similar licensing and oversight programs employed in achieving its safety goal. The NRC allows licensees to realize the benefits of nuclear material through its secure use, while at the same time not placing unnecessary regulatory burden on those licensees.

In addition to inspections, the NRC also maintains controls over high-risk radiation sources and other risk-significant radioactive materials, and successfully implements tracking and accounting systems through other licensing and reporting requirements. These systems help ensure that the radioactive materials utilized by licensees are stored and maintained in a secure manner.

A major challenge facing the NRC is to implement a stable and predictable security environment, which requires maintenance of reasonable security measures while providing for continued beneficial uses of radioactive materials. To attain this, the NRC must upgrade its infrastructure for protecting and sharing classified and safeguards information, and for sharing sensitive information, as appropriate, with licensees, members of the public, and other Federal, State, and local government and international stakeholders.

The NRC will also continue to implement the authorities granted to it in the Energy Policy Act of 2005 for enhancing the security of nuclear facilities and radioactive material. The NRC is challenged to complete these rulemakings and other actions recommended by the multi-agency Task Force on Radiation Source Protection and Security, which was established by this Act. In

August 2006, the Task Force issued its first report containing recommendations for improving the security of radioactive sources and subsequent reports are due not less than once every four years.

Another challenge facing the NRC and its licensees is the implementation of the recommendations arising from the NRC's completed identification of vulnerabilities and mitigating strategies at licensed facilities. The NRC emphasizes maintaining the validity of its threat definitions in licensing design-basis threats. These design basis threats are used to assess the level of threat against which licensees must realistically be expected to defend.

The NRC also currently maintains its role in international activities related to the security of radioactive materials and facilities, including: (1) formulating foreign policy guidance, (2) providing international assistance in nuclear security, material control and accounting, and safeguards, (3) reviewing applications and issuing import and export licenses for nuclear materials and equipment, and (4) cooperating with the International Atomic Energy Agency and the Organization for Economic Co-operation and Development's Nuclear Energy Agency on nuclear safeguards, non-proliferation, and international regulatory standards.

**Security Goal Strategies**

1. Use relevant intelligence information and security assessments to maintain realistic and practical security requirements and mitigation measures.

2. Share security information with appropriate external stakeholders and international partners.

3. Oversee licensee security performance through inspections and force-on-force exercises.

4. Control 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.

5. Support Federal response plans that implement an integrated approach to the security of nuclear facilities and radioactive materials that supplement licensee efforts with appropriate Federal, State, local, and Tribal government assets.

6. Use a risk-informed, graded approach to implement appropriate regulatory controls for the possession, handling, import, export, and transshipment of radioactive materials.

7. Enhance the programs for control of the security of radioactive sources and strategic special nuclear material commensurate with their risk, including enhancements required by the Energy Policy Act of 2005.

8. 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 by coordinating with Federal and international partners.

**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:

- 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, 4, 5, 6, and 8]

- 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, 3, and 6]

- On a 3-year cycle, conduct safeguards performance evaluations at every applicable nuclear facility to assess each licensee's protective-strategy capabilities and to evaluate support functions for each respective licensee from Federal, State, and local law enforcement and emergency planning officials. [Supports Strategies 1, 3, 4, and 5]

- Conduct security 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, 4, and 5]

- Work with the Homeland Security Council, the Department of Homeland Security, and the intelligence community to define, develop, and implement integrated security response plans and the National Response Plan that incorporates Federal, State, local, and Tribal government assets. [Supports Strategies 4, 5, and 8]

- Work with States on safety and security measures related to NRC- and State-licensed facilities and activities within their borders. [Supports Strategies 4 and 5]

- Collaborate with the Department of Energy and other agencies to develop and complete implementation of a national registry of radioactive sources of concern and establish or improve the controls on high-risk radioactive materials to prevent their harmful use, including enhancements required by the Energy Policy Act of 2005 and recommended by the task Force on Radiation Source Protection and Security. [Supports Strategies 1, 4, 6, and 7]

- Continue support and active involvement in international security activities, including support of International Atomic Energy Agency non-proliferation initiatives and bilateral physical security inspections of special nuclear materials that originate in the United States. [Supports Strategy 8]

- Identify and obtain access to critical electronic channels of security information maintained by other Federal agencies to ensure that the NRC and its licensees maintain a current awareness of potential threats to licensed facilities and activities. [Supports Strategies 1 and 4]

- Identify and develop key information technology investments, including secure electronic document and records management capabilities, that will enhance the storage, handling, and communication of sensitive security information both within and external to the agency. [Supports Strategy 4]

- Support U.S. government goals to secure nuclear materials internationally through

bilateral agreements to support material control and accounting programs. [Supports Strategies 2, 7, and 8]

## Organizational Excellence Objectives to achieve the Strategic Goals

**Openness:** NRC informs and involves, as appropriate, stakeholders in the regulatory process.

**Discussion**

The NRC views nuclear regulation as the public's business and, as such, believes it should be transacted as openly and candidly as practicable to maintain the public's confidence. Ensuring appropriate openness explicitly recognizes that the public must be informed about, and have a reasonable opportunity to participate meaningfully in, the NRC's regulatory processes. At the same time it ensures that sensitive information is controlled so that security goals are met.

Over the next several years, the NRC will prepare to receive license applications for the construction and operation of a number of nuclear power plants, nuclear materials facilities, and a geologic repository. In addition, there will be an increase in the number of spent fuel shipments and applications to extend the licenses of operating reactors. These activities will generate a great deal of public interest. Public involvement is a key element in the application and licensing process and stakeholders will have many opportunities to participate in the regulatory process before issuance of a license, construction permit, early site permit, design certification, or combined license.

As the agency prepares for the next generation of nuclear facilities, the need to educate and inform the public about the NRC's processes and its safety and security goals will be critical. To continue its practice of communicating clearly and frequently on operating plant and materials activities, the NRC will hold meetings with the public or other external stakeholders in the vicinity of nuclear facilities and at its headquarters and regional offices. In addition, documents and correspondence related to license renewals and license applications, with the exception of certain security-related, proprietary, and other sensitive unclassified information, are made available through the agency's public Web site at www.nrc.gov. Members of the public may access the NRC Web site via the internet. The agency issues press releases regarding the receipt of license applications and announces public meetings, opportunities for hearings and other avenues for public involvement. Copies of key documents and notifications are sent to Federal, State and local officials, published in the Federal Register and made available electronically at the NRC Web site. In addition, librarians at NRC's Public Document Room are available to assist members of the public in accessing or obtaining copies of the agency's public documents.

**Openness Strategies**

1. Provide accurate and timely information to the public about NRC's mission, regulatory activities, and performance and about the uses of, and risks associated with, radioactive materials.

2. Enhance the awareness of the NRC's independent role in protecting public health and safety, common defense and security and the environment.

3. Provide for fair, timely, and meaningful stakeholder involvement in NRC decision-making without inappropriately disclosing classified, safeguards, proprietary, and sensitive

unclassified information.

4. Conduct early communication with stakeholders on issues of substantial interest.

**Selected Activities 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, other Federal partners, State, local, and Tribal Governments, international stakeholders, non-governmental organizations, the media, and Congress. [Supports Strategies 1, 2, 3, and 4]

- 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 Strategies 2 and 4]

- Provide timely access to nuclear licensing and inspection information, including hearing documents, at NRC's public Web site [Supports Strategies 1, 2, 3, and 4].

- 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) to bring together diverse groups of stakeholders to discuss the latest trends in industry performance and research. [Supports Strategies 1, 3, and 4]

- 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 and security 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. Then conduct timely, appropriate outreach with stakeholders. [Supports Strategy 2].

- Provide stakeholders with as much information regarding the agency's security activities as possible without compromising classified, safeguards, proprietary, and sensitive unclassified information. [Supports Strategy 3]

**Effectiveness:** NRC actions are of high quality, efficient, realistic, and to enable 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 a potential Department of Energy application to license the Yucca Mountain high-level waste repository, requests to license the next generation of nuclear reactors, and potential licensing of new fuel cycle technologies. Security demands remain complex, requiring diverse professional expertise and close coordination with other Federal, State, local, and Tribal 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 continue to challenge 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 efficient and realistic without compromising high quality in its regulatory activities.

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 by the right people. With respect to the next generation of nuclear reactors, effectiveness refers to the scope and technical sufficiency of the application review and the NRC's ability to reach the appropriate findings at the conclusion of reviewing each application. The NRC's ability to effectively conduct application reviews includes a variety of strategies and activities described below. Efficiency is related in part to the length of time involved for the application review. The effectiveness and efficiency of the application review can be increased without compromising safety and security, provided industry submits complete high quality applications.

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, local, and Tribal agencies, and the public. Efficient regulatory processes help the NRC to meet stakeholder expectations. While the NRC will never compromise safety and security for increased efficiency, the agency works to improve the efficiency of its regulatory processes whenever practicable.

**Effectiveness Strategies**

1. Use state-of-the-art technologies and risk insights to improve the effectiveness and realism of NRC actions with a goal of continuous improvement.

2. Cooperate with Federal agencies, States, and Tribal governments and international

counterparts to gain insights and effectively resolve issues to enable the safe and beneficial uses of radioactive materials.

3. Interact with appropriate stakeholders to minimize regulatory or jurisdictional overlap.

4. Anticipate challenges and promptly evaluate and respond to changes in the regulatory and technical environment.

5. Foster innovation at the NRC to improve the NRC's regulatory programs.

6. Achieve efficiencies in the licensing process, which remove unnecessary burden and enable the safe and secure use of nuclear material.

**Selected Activities 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. Use independent, internal agency resources such as the Office of the Inspector General, and relevant advisory committees and outside expertise, as needed, to provide objective assessments and recommendations to improve program performance. [Supports Strategies 1, 2, 3, 4, and 5]

- Establish specific goals for continuous improvement in programs and processes. [Supports Strategy 5]

- 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 and 4]

- Implement initiatives to encourage innovation and diverse views at the NRC, to empower decision-making, and to effectively manage change. [Supports Strategy 5]

- Expand the use of information technology tools to improve efficiency throughout the agency. [Supports Strategies 1 and 5]

- Work cooperatively with the Agreement States to agree on priorities for enhancing the regulatory framework for materials licensees. [Supports Strategies 2, 3, and 4]

- Encourage stakeholders to identify actions, such as inadequate guidance 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, 3, 4, and 6]

- 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 2 and 3]

- Utilize NRC's Lessons-Learned Program and other initiatives to leverage experience as means of continual improvement. [Supports Strategy 5]

**Timeliness**: NRC decision making process is well reasoned, justified, and decisions are made in a timely fashion to ensure safety and security.

**Discussion**
Timeliness means acting within a predictable time frame and without unnecessary delays. The NRC's actions should be timely to support the agency's strategic objective of enabling the safe, efficient, beneficial use and management 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.

**Timeliness Strategies**
1. Complete high quality and timely decisions.

2. Develop milestones and deliverables and articulate them clearly to those we regulate and to the public.

3. Provide clear and timely guidance to applicants and licensees to foster the submittal of high quality and timely applications or license amendment requests.

**Selected Activities to Support Timeliness Strategies**
- Report progress toward timeliness output measures for various NRC activities such as licensing, inspection, and allegation reviews. [Supports Strategies 1 and 2]

- Reduce the review time required for early site permits, combined licenses, and other licensing actions while maintaining safety and security. [Supports Strategy 3]

- Promptly review and communicate cases where applications or license amendment requests will not support the agency's timeliness goals. [Supports Strategies 1, 2, and 3]

**Operational Excellence:** NRC operations use current effective business solutions to achieve excellence in accomplishing the agency's mission.

**Discussion**
Operational excellence captures the NRC's approach in strengthening and supporting the processes that assist the agency in accomplishing its mission. Operational excellence is primarily accomplished through effective leadership in providing timely, high quality information management and information technology; hiring and retaining knowledgeable and skilled staff; ensuring sufficient office space capacity; and providing accurate and timely financial information.

Timely, high quality information is critical to the achievement of the NRC's safety and security mission. The NRC's information technology/information management systems and services must work effectively to deliver that information to all participants in the regulatory process, including the NRC staff, stakeholders and the public. In addition, information technology

continues to offer significant opportunities for improving the efficiency and effectiveness of NRC operations. For additional information, see the NRC Information Technology/Information Management Strategic Plan FY 2008-FY 2012, available at www.nrc.gov.

The NRC's 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 continue to build its human capital in diverse areas. The individuals hired with these skills will achieve their greatest effectiveness when they are appropriately deployed, fully engaged in fulfilling the NRC's mission requirements, provided appropriate training as needed, and recognized for their performance. The NRC is a knowledge-centric agency that relies on its staff to make the sound regulatory decisions needed to accomplish the agency's mission. As such, the agency is dedicated to maintaining its technical excellence now and in the future through a strategic approach to training, development and knowledge management. As the agency evolves its knowledge management program into the future, the agency will move to become an *intelligent learning system*: essentially, a cradle-to-grave lifecycle approach to organizational learning and knowledge management that captures and internalizes agency knowledge through a comprehensive, integrated, competency-based system of training. For this reason, the agency will continually assess its management of human capital, looking for ways to make improvements that will better support the achievement of the mission. For additional information, see the NRC Strategic Human Capital Plan, available at www.nrc.gov.

Expanded office space capacity is also an important component under operational excellence. With significant and rapid growth in the NRC's staff to meet the new reactor licensing and other initiatives under the Energy Policy Act of 2005, there is a need to expand the NRC's office space capacity. In addition, operational excellence depends on the effective and efficient acquisition of goods and services to meet the needs of the NRC.

Accurate and timely financial information is another component of operational excellence, and is critical to enable agency managers to achieve the NRC's safety and security goals while effectively and efficiently utilizing resources. The quality of the agency's financial information impacts the effectiveness of managerial decisions and, in turn, the fees borne by licensees, as well as the burden on the taxpaying public.

**Operational Excellence Strategies**

1. Strengthen accountability for setting and achieving individual and organizational performance expectations and for providing timely and comprehensive feedback.

2. Reward safety-conscious actions and improve communication throughout the organization to support a culture of openness, trust and innovation.

3. Improve support services to make them more efficient and make it easier to accomplish agency goals.

4. Conduct the NRC's information technology and information management activities to improve the productivity, effectiveness and efficiency of agency programs and operations, and enhance the utility and accessibility of information for all users inside and outside the agency.

5. Use innovative strategies to recruit, develop, and retain diverse employees, and

increase the diversity of employees in senior and managerial positions to achieve a high quality, diverse work force.

6. Continue to 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.

7. Sustain a learning environment that provides continuing improvement in performance through knowledge management, performance feedback, training, coaching and mentoring.

8. Ensure that the NRC has appropriate facilities that preserve a physical work environment that facilitates staff retention, regulatory effectiveness and operational efficiency.

9. Provide accurate, timely, and useful financial information to agency managers for effective decision-making.

**Selected Activities to Support Operational Excellence**

Information Technology/Information Management

- Improve information management processes, such as information dissemination and knowledge management. [Supports Strategies 3 and 4]

- Improve internal and external electronic information access and delivery systems. [Supports Strategies 3 and 4]

- Systematically evaluate, improve, integrate, and automate selected regulatory and support processes from beginning to end, considering the needs of all process participants and using the most effective redesign approaches and technologies. [Supports Strategies 3 and 4]

- Apply information technology/information management (IT/IM) to meet high-priority business needs (e.g., new reactors, fuel cycle facilities, the high-level waste repository proceeding, homeland security). [Supports Strategies 3 and 4]

- Seek common solutions, reduce duplication, and promote sharing of data, systems, and service components across the agency. [Supports Strategies 3 and 4]

- Influence Federal initiatives that are applicable to the NRC and expeditiously adopt such IT solutions where they provide sufficient return on investment. [Supports Strategies 3 and 4]

- Build shared services into the IT infrastructure to reduce costs of applications that require these services. [Supports Strategy 4]

- Expand and strengthen information security capabilities to ensure that effective information protection is in place, and develop and communicate policies regarding security. [Supports Strategy 4]

- Strengthen IT infrastructure capabilities to accommodate agency business needs during both nuclear and non-nuclear emergencies. [Supports Strategies 3 and 4]

Human Capital

- Review the NRC organizational structure and make changes to ensure it adequately serves our present and future needs. [Supports Strategy 1]

- Recruit from sources that will ensure a high quality, diverse staff while retaining current staff through the use of incentives. [Supports Strategy 5]

- Strengthen the NRC leadership cadre by concentrating on areas where improvement is needed to support agency goals. [Supports Strategy 1]

- Ensure that each office has a knowledge management philosophy to retain knowledge that may have otherwise been lost through attrition. [Supports Strategy 7]

- Create an environment in which each employee is accountable for his/her own achievements and which fosters individual employee development and achievement. [Supports Strategies 1, 2, 6, and 7]

Expanded Office Space Capacity

- Maintain and acquire adequate space near the Headquarters White Flint Complex and in Regional Offices to ensure staff efficiency and effectiveness in meeting the demands for new reactor licensing and other initiatives. [Supports Strategy 8]

- Optimize space use at the Headquarters and the regions. [Supports Strategy 8]

- Maintain a healthy, safe, secure, adaptable, and accessible physical work environment that facilitates regulatory effectiveness and operational efficiency. [Supports Strategy 8]

- Identify new and better ways to integrate business plans, user needs, space design, information technology, and alternate workplace strategies that enhance recruitment and retention, and improve organizational and staff performance. [Supports Strategy 8]

Financial Information

- Replace several of the agency's financial systems, including the NRC's core accounting system (the Federal Financial System), the License Fee Billing System, and the Human Resources Management System. [Supports Strategy 9]

- Conduct rigorous independent review, testing, and evaluation of major financial system security plans to ensure full and complete system certification under the Federal Information Security Management Act. [Supports Strategy 9]

- Ensure that performance management systems for senior executives continue to align individual performance objectives with organizational and agency goals. [Supports Strategies 1 and 9]

## 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. A process for managing change and transition should continue to be refined and implemented to ensure the NRC is ready to address changing priorities in a timely manner. 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 License Applications
A resurgence of interest to construct and operate new nuclear power plants is leading to intense competition for qualified individuals to serve as technical staff for both the NRC and licensees, as well as for nuclear power plant operating personnel. Increasing turnover and competition for qualified staff will remain an NRC challenge for the next several years.

Significant Operating Incident (Domestic or International)
A significant incident could cause an unexpected increase in safety and security requirements that would likely change the agency's focus on initiatives related to its goals until the situation stabilizes. 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 would heighten the NRC and its licensees' oversight and response stance. Subsequent new or changed security requirements or other policy decisions might impact the NRC, its partners, and the industry it regulates. A significant terrorist incident at a nuclear facility or activity anywhere in the world could result in similar changes in the NRC's priorities and potentially 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.

Emergency Preparedness and Incident Response
Emergency preparedness and incident response activities with Federal, State, local, and Tribal agencies continue to increase in scope and number. This impacts the agency's priorities and workloads.

Timing of a Department of Energy Application for the High-Level Waste Repository at Yucca Mountain and Related Activities
The licensing of the proposed repository for spent nuclear fuel represents a major effort for the NRC in planning, review, analysis, and ultimate decision-making. The NRC expects to receive a license application for a high-level waste repository no later than June 2008. 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 may affect other programs that are directly associated with achieving the agency's goals.

Legislative Initiatives
Legislative initiatives under consideration by Congress can have a major impact on the NRC. For example, the Energy Policy Act of 2005 has greatly affected the agency's priorities and

workload. Increasing interest in diversified sources of energy and energy independence are leading to an expected increase in license applications for nuclear power plants. The attendant increase in resources devoted to license review and analysis are affecting how the agency's goes about achieving its goals for this planning period.

Global Nuclear Energy Partnership (GNEP)
GNEP has been proposed by the Department of Energy as a means to recycle (reprocess) nuclear fuel using proliferation-resistant technologies to recover more energy and reduce waste. The impacts on the NRC could include developing the licensing requirements for, and then licensing commercial reprocessing facilities, advanced burner reactors, and associated storage and waste facilities. The level of Congressional, industry, and international support is uncertain at this time. As a result, the scope and schedule of NRC activities is uncertain.

Pandemic
The outbreak of a pandemic could significantly impact the NRC's essential functions to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment. The NRC must remain prepared for responding to the Nation's needs during a pandemic to monitor and ensure adequate safety and security while allowing licensees to maintain essential services to the public during a pandemic.

## Appendix B

### Planned Program Evaluations

Operator Licensing Program
*Expected Completion Date:* FY 2008, FY 2009, FY 2010, FY 2011, FY 2012
*Objective:* The annual evaluation of the Operator Licensing Program ensures that the program is effective and consistently implement the requirements in 10 CFR Part 55 and the guidance in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," and other policy documents.
*Scope:* The annual evaluation of the Operator Licensing Program audits one or two written examinations and operating tests in each Region to ensure consistent quality, level of difficulty, administration, and grading. The evaluation also includes a detailed review of the operator licensing function in two Regional Offices each year, with each Region performing a similar self-assessment during the alternate years. The detailed reviews assess seven functional areas including administrative requirements, written examinations, operating tests, re-qualification program oversight, regional operations, licensing assistant activities, and resource utilization.

Reactor Oversight Program
*Expected Completion Date:* FY 2008, FY 2009, FY 2010, FY 2011, FY 2012
*Objective:* The annual reactor oversight program evaluation has 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.

Work Planning Process
*Expected Completion Date:* FY 2008
*Objective:* The primary objective is to conduct an effectiveness review of the Office of Nuclear Reactor Regulation's work planning process by (1) assessing the current services provided by the work planning center, (2) developing recommendations on adding, deleting and or modifying current services aimed at improving the effectiveness and efficiency of the workload management services, (3) developing recommendations as to what processes should be included under the auspices of the centralized work planning program, and (4) developing recommended steps to improve the information technology (IT) systems that support the work planning process.
*Scope:* The project includes the evaluation of the work planning process; the evaluation is intended to improve the effectiveness and efficiency of the planning process to better serve the Office of Nuclear Reactor Regulation's workload management needs.

Decommissioning and Low-Level Waste Management Dose Modeling and Performance Assessment Approaches Review
*Expected Completion Date:* FY2008
*Objective:* Complete a comprehensive technical review and critical evaluation of the Division of Waste Management and Environmental Protection current approaches and methodologies used to conduct dose modeling analysis for decommissioning and low-level waste management.
*Scope:* This project involves a review and evaluation of approaches, methods, and tools currently used by the Division of Waste Management and Environmental Protection staff for dose analyses and performance assessments for decommissioning and low-level waste. The scope of this project will specifically address the following issues: (a) whether the approaches, methodologies, and tools are efficient and consistent for their specific applications; (b) whether the methods used are scientifically and technically sound and appropriate for their intended uses; (c) areas of enhancement, if any, in methods, processes, approaches, and tools; (d) aspects of quality assurance/quality control and internal/external audit of dose analysis and probabilistic assessment analysis used in regulatory compliance, National Environmental Policy Act analysis, or the Division of Waste Management and Environmental Protection key decisions; (e) assessment of the tools for user-friendly applications by staff and licensees and the frequency of use of such tools; (f) assessment of the status of codes/models if they are up-to-date and if they use the latest available technology.

Integrated Materials Performance Evaluation Program Reviews of selected NRC Regional Offices
*Expected Completion Date:* Region IV in FY 2009.
*Objective:* Each Program Evaluation will determine if the Regional Offices are conducting programs that meet the objectives set out in Management Directive 5.6 for Adequate and Compatible materials programs.
*Scope:* The evaluations will include the common performance criteria (Technical Staffing and Training, Status of Materials Inspection Program, Technical Quality of Inspections, Technical Quality of Licensing Actions, Technical Quality of Incidents and Allegations) and the appropriate non-common criteria for the specific Regional activities and responsibilities. The evaluation will be conducted in accordance with Management Directive 5.6 and the implementing procedures. The findings and report will be finalized after evaluation by the Management Review Board. Any recommendations or good practices will be factored into future activities for all of the Regional materials programs.

Fuel Cycle Licensing and Inspection Program
*Expected Completion Date:* FY 2009
*Objectives:* The fuel cycle licensing and inspection program provides regulatory oversight for fuel cycle facilities in the areas of safety, safeguards and environmental protection. Findings from previous Program Assessment Rating Tool reviews for this 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. Ongoing efforts are being implemented to develop independent assessments to validate and confirm that the program objectives are continuing to be met in an efficient and effective manner.
*Scope:* The efforts will focus on independent reviews to assess and evaluate the effectiveness of the fuel cycle program.

## Appendix C

### Glossary

Agreement State: a State that has signed an agreement with the NRC providing for the State to regulate the use of certain radioactive materials within its borders and the discontinuance of Federal authority in that State (does not apply to the regulation of operating commercial nuclear reactors).

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. Diversity Management (DM) means creating a work environment where differences in heritage, background, style, tradition and views are valued, respected and used to increase organizational capacity. DM promotes new ways of looking at ideas and decisions in accomplishing the agency's mission.

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).

Package: the assembly of components and radioactive contents, as presented for transport, that are necessary to ensure compliance with the requirements of 10 CFR Part 71.

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: 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 such as: (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 Assessment: a systematic method for addressing the following three questions as they relate to the performance of a particular system, including the human component: "What can go wrong?"; "How likely is it?"; and, "What are the consequences?"

Risk Insights: refers to the results and findings that come from **risk assessments** and may

include improved understanding of the likelihood of possible outcomes, sensitivity of the results to key assumptions, relative importance of the various system components and their potential interactions, and the areas and magnitude of the uncertainties.

Risk-Informed: an approach to decision-making in which **risk insights** are considered along with other factors such as engineering judgment, safety limits, and redundant and/or diverse safety systems. Such an approach is used to establish requirements that better focus licensee and regulatory attention on design and operational issues commensurate with their importance to public health and safety.

Spent Fuel: see High-Level Waste.

Stakeholders: members of the public, Federal, State, and Indian Tribe agencies, and licensees 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.